TeachME PROFESSIONAL DEVELOPMENT
CEUs for Teachers and Educators

Developing Infant-Toddler School Readiness

Introduction

School readiness is at the foundation of early childhood programs across the country. School readiness refers to the skills, knowledge, and attitudes needed to be successful in school and in life. School readiness can be explored through five domains defined by the Office of Head Start (OHS): approaches to learning, social and emotional development, language and literacy, cognition, and perceptual, motor and physical development. A child's interpersonal experiences directly impact brain development, which then impacts school readiness skills.

Section 1: What is School Readiness?

Defining School Readiness

While there is clearly a strong desire to increase school readiness for young people, there is no definitive definition of "school readiness," and interpretations vary between early childhood organizations like The National Association for Young Children [NAEYC] and Head Start (Wilmington, 2017). NAEYC's position statement focuses on meeting students where they are, putting the responsibility on schools to meet the needs of all students (Wilmington). The Office of Head Start [OHS], on the other hand, has a more definitive and measurable definition for school readiness, "as children possessing the skills, knowledge, and attitudes necessary for success in school and for later learning and life" (as cited in Head Start, 2022a). For teachers of infants and toddlers, this means supporting the developing brain in such a way that builds a solid foundation for learning and social-emotional development.

Until recent times, the majority of research on school readiness focused on preschool completion and kindergarten readiness. However, with broad research showing that the foundations of school readiness really begin in infancy, frameworks for school readiness of infants and toddlers is gaining traction. While "school readiness" as it pertains to infants and toddlers might seem counterintuitive, Head Start (2022a) defines the five central domains of school readiness for birth to age five, and how students should progress across these domains. Furthermore, these "serve as the core for identifying essential areas of development and learning for birth to 5 year olds" (Horm et al., 2017). The domains are used to establish frameworks, curriculum, materials, and desired

educational outcomes for early childhood programs. Likewise, the domains are typically addressed in statewide early learning guidelines [ELGs] for infants and toddlers.

History of School Readiness

In 1965, President Lyndon B. Johnson established Head Start as one of his initiatives in the War on Poverty. Head Start was designed to alleviate economic inequities and eliminate poverty "by providing preschool children of low-income families with a comprehensive program to meet their emotional, social, health, nutritional, and psychological needs" (Head Start of Lane County, 2022). By this time, early research had confirmed the importance of early learning, and the goal of Head Start was to prepare children living in poverty for school and future success. In 1994 the Head Start Act was not only renewed but it also established an Early Head Start program for low-income families with infants and toddlers (Head Start of Lane County). The Head Start Act helped to lay down some of the foundational ideas for early childhood programs across the country.

Much later, in 1990, President George H.W. Bush worked with state governors to establish National Education Goals to achieve by the year 2000. The first goal stated that by the year 2000 "all children in America will start school ready to learn" (as cited in Horm et al., 2017). At this time, efforts to measure school readiness were mainly focused on preschool children and included three components: "the readiness of the individual child, the readiness of schools for children, and the readiness of the family and broader community to support optimal early development" (Horm et al.).

A little more than a decade later, the George W. Bush administration made additional changes to the education system with the No Child Left Behind [NCLB] Act and Good Start, Grow Smart, which "brought school readiness and early childhood education to the forefront of the national conversation" (Woolmington, 2017). Good Start, Grow Smart was "supported preschool access for low-income students and aimed to increase awareness of the importance of early childhood education" (Woolmington). NCLB legislation required high stakes tests in school in order to hold teachers and schools accountable for student failures. While testing started in 3rd grade, pressure went all the way down to preschool and kindergarten for teachers to adequately prepare their students for the subsequent grades. Woolmington explains, "During this same time . . . increased pressures from high stakes testing and the federal push to bring awareness to the importance of preschool, there was also heightened investment in early childhood

education from families." More students began enrolling in preschools and school readiness became a greater concern for parents.

In 2015, the Every Student Succeeds Act [ESSA] was signed into law by President Barack Obama, replacing NCLB and becoming the primary federal law for K-12 general education. "ESSA prioritizes equal access to education and closing opportunity gaps—issues that originate before children enter the K-12 system" (First Five Years Fund, 2021). ESSA recognizes the importance of early learning and the need for quality early childhood learning experiences across the country. ESSA "includes the first-ever dedicated funding stream for ECE, the Preschool Development Grant Birth through Five program (PDG B-5), which provides competitive grants for states to improve ECE coordination, quality and access" (First Five Years Fund). Overwhelming research shows that students who enter kindergarten lacking in necessary skills are more likely to remain behind throughout their school careers and beyond; ESSA aims to improve ECE programs to better prepare children to start kindergarten with equal opportunities.

While NCLB allowed for early childhood funding, ESSA actually emphasizes its importance throughout "by promoting service coordination within communities, encouraging greater alignment with the early elementary grades and building ECE knowledge and capacity among teachers, leaders and other staff" (First Five Years Fund, 2021). ESSA also gives more discretion to the states in regards to how they use the funds to improve ECE programs. While highly encouraged, most of the ECE provisions are not mandated, but states are still including ECE in their plans. This means that "states are voluntarily electing to articulate and broaden pathways for ECE opportunities within the larger continuum of learning," acknowledging the importance of these early learning programs (First Five Years Fund, 2018).

Why ECE & School Readiness are Important

Research has shown both short-term and long-term benefits to high quality early learning programs "including lasting gains in both IQ and social-emotional skills" (First Five Years Fund, 2022). Preparation for school readiness begins at birth. High quality early learning programs "lay the foundation for school readiness by building these cognitive and character skills that children need to do well in school and in life, including attentiveness, persistence, impulse control and sociability" (Five Years Fund). As stated previously, when students enter kindergarten behind it is more likely that they will remain behind in subsequent grades. However, when children are prepared to enter kindergarten, there is an 82% chance that they will master basic skills by age 11,

compared to a 45% chance for children that are not school ready (Five Years Fund). “Research shows the foundation for success in life begins during the critical period from pregnancy to age 5,” so investing in quality early education learning experiences is crucial for further development (Five Years Fund).

Learning experiences do not only take place in schools or childcare facilities; high quality learning typically begins at home, and can take place with any caregiver, by any adults who provide care for a child (e.g. parents, guardians, teachers, babysitters, etc.). While these experiences usually begin with parents or guardians, “high-quality child care and preschool programs provide a continuation of the reliable, nurturing environment . . . offering rich ‘serve and return’ interactions with early educators that maintain their healthy development” (Five Years Fund, 2022).

Risk Factors to School Readiness

Poverty

Low income and poverty have detrimental effects on early childhood education and thus, later education as well. Poverty is one of the most recognized risk factors for school readiness, as “fewer than half (48%) of poor children are ready for school at 5 years of age as compared with 75% of children from moderate or high income households” (Williams & Lerner, 2019). Further, First Five Years Fund (2022) reports that by the age of four, there is an obvious 18-month gap in school readiness skills of a child living in poverty compared to a child in average or wealthy households. Unfortunately, as more time passes, the gap typically widens, and becomes very difficult and expensive to close. There is hope, however, as research shows that high quality ECE “can bring disadvantaged children to parity by kindergarten, reducing children’s timidity, improving attentiveness and IQ scores . . reducing the percentage of children repeating a grade, and lowering the rate of special education placement by 10%” (First Five Years Fund).

While high quality early education and childcare is important for all children, research has shown that children from low-income families can actually be harmed by low quality care situations (First Five Years Fund, 2022). Children that attended high quality ECE programs had overall better life outcomes than children that attended low quality programs but “low-income males who were in poor-quality settings experienced reduced health outcomes and earned lower wages later in life” than those who attended good programs or stayed home with a family member (First Five Years Fund). Likewise, the amount of time that children from low-income households are forced to spend in

low quality child care situations is related to increased behavioral problems (First Five Years Fund). Because of the susceptibility for children living in poverty to the adverse outcomes of low quality programs, it is crucial that ECE programs provide high quality experiences for them.

Special Education Needs

Children with developmental disabilities are at a higher risk for school readiness deficits (Williams & Learner, 2019). The Individuals with Disabilities Education Act [IDEA] ensures children with special needs have access to Free Appropriate Public Education [FAPE], with Part C addressing early intervention services for children from birth to age three that qualify. Approximately "3% of children 0 to 3 years of age are served, with boys accounting for 64% of children" (Williams & Lerner). For this age group, the majority of early intervention services are provided at home. About 8% of this group were no longer eligible for services by age 3, when they would have been covered under Part B of IDEA, which suggests a level of effectiveness of early intervention (Williams & Lerner).

Unstable Home Life

Children in the foster care system or otherwise involved with child welfare are often at higher risk for school readiness deficits for the following reasons: "the impact of childhood trauma and loss on the developing brain . . . and less access to early childhood education and programs that may help to remediate losses" (Williams & Lerner, 2019). Unstable placements in foster care put children particularly at risk, as well as mistreatment from caregivers. Likewise, children that experience instability in placements have higher instances of internalizing behavior like depression, lower adaptive skills, and poor social skills, as well as externalizing behavior like aggression and impulsivity (Williams & Lerner). These internalized and externalized behaviors cause deficits to school readiness in both the social-emotional and the cognition domains, as children cannot learn successfully if their basic needs are not met.

Toxic Stress & Trauma

Toxic stress, which can be caused by trauma, disrupts healthy brain development in children, starting from birth. Toxic stress is when a child "experiences strong, frequent, and/or prolonged adversity," such as physical and/or emotional abuse, neglect, economic hardships, caregiver substance abuse, or exposure to violence (Williams & Lerner, 2019). The disruption in healthy brain development can cause later mental, physical, and emotional problems. Children with two or more traumatic experiences

“were 2.67 times more likely to repeat a grade” than children without, and children without adverse experiences were “2.59 times more likely to be usually or always engaged in school” (Williams & Lerner).

Section 1 Key Terms

Early Childhood Education (ECE) - A broad term used to describe an educational program that serves young children from birth to around age eight

Early Learning Guidelines (ELGs) - Describes what children should know and be able to do along a continuum

Every Student Succeeds Act (ESSA) - Federal K-12 education law of the United States signed into law in 2015 by Barack Obama

Individuals with Disabilities Education Act (IDEA) - Legislation that ensures students with disabilities have equal access to Free Appropriate Public Education (FAPE) tailored to their individual needs

No Child Left Behind Act (NCLB) - The main law for K-12 education from 2002-2015, prior to ESSA

Toxic Stress - Strong, frequent, and/or prolonged adversity

Section 1 Reflection Questions

1. Which risk factor to school readiness have you seen kids exhibit the most in your practice? What are the effects that you have noticed?
2. Do you agree with NAEYC’s position that schools should meet children where they are, rather than children meeting criteria for school readiness? Why or why not?
    a. What are the potential challenges associated with creating school readiness programs for infants and toddlers within this framework?

Section 1 Activities

1. Using the background information described above, create your own definition of “school readiness” for infants and toddlers.

Section 2: Domains of School Readiness for Infants & Toddlers

What are the Domains?

Head Start (2022a) provides a framework describing skills, behavior, and knowledge that infants and toddler (birth to age five) programs should build upon. The framework describes what this age group should know and be able to do in order to succeed in school. The framework is research-based, comprehensive, inclusive, manageable, and measurable (Head Start). Head Start's framework explains "how children progress across key areas of learning and development and specifies learning outcomes in these areas." ECE programs across the country use this framework to guide curriculum selection, plan activities, and inform practice. In addition, families can use the framework to provide rich educational experiences at home.

The central domains describe "broad areas of early learning and development from birth to 5 years that are essential for school and long-term success," and include:

- Approaches Toward Learning
- Social and Emotional Development
- Language and Literacy
- Cognition
- Perceptual, Motor, and Physical Development" (Head Start, 2022a).

The domains are "intended to be overlapping and connected indicators of a child's ability to succeed in a school setting" (Mead, 2022). The domains are not a hierarchy, but rather skills that can be developed at the same time, and they are related to one another and can affect each other. For example, as children's communication skills develop, so might their relationships with other children - a sub-domain of social-emotional skills - because they will have the communication and complementary skills necessary to play together, take turns, ask for a different toy, et cetera. The domains also change slightly as children get older to reflect their growth. For example, the Language and Literacy domain consists of one category: Language and Communication for infants and toddlers, and then separates into two domains for preschoolers: Language and Communication and Literacy.

Approaches Toward Learning

Approaches toward learning focuses on how children learn, and refers to the skills and behaviors that children use to engage in learning (Head Start, 2022a). This domain is not concerned with which skill children develop, but rather how they develop it. The subdomains include Emotional and Behavioral Self-Regulation, Cognitive Self-Regulation (Executive Functioning), Initiative and Curiosity, and Creativity (Head Start). Within this domain, young children learn to acquire new skills, gain new knowledge, and set and achieve goals. While infants and toddlers might not be able to verbally express their questions and curiosity about the world, they are constantly looking for answers. Children will "learn to successfully navigate learning experiences that are challenging, frustrating, or simply take time . . . How children engage in learning . . . directly contributes to success in school" (Head Start).

Approaches toward learning also refers to "learning styles, habits, motivation, and attitudes that reflect the many ways children involve themselves in learning," which are also influenced by individual characteristics, such as gender, temperament, family, community, culture and values (Head Start, 2022b). It's important to note that habits, motivations, and attitudes will vary greatly from child to child, due to these other influential factors.

Self-regulation, Emotional & Cognitive. Self-regulation is the "ability to control one's behavior, including emotions, thoughts, actions and attention," particularly when faced with triggering or challenging situations (Rymanowicz, 2018). While self control is more of a social skill - e.g. not hitting your classmate for cutting in line - self-regulation refers to managing those inside feelings, physical sensations, and thoughts when something goes wrong. Emotional and behavioral self-regulation refers to the strategies that infants and toddlers use to manage emotions and behavior with adult support; cognitive self-regulation refers more to executive functioning skills, such as impulse control, sustained attention, and flexibility in thinking (Head Start, 2022a). The development of self-regulation skills actually begins at birth and continues into young adulthood. So why is it crucial to build these skills so early? Children learn at a rapid pace during the first few years of life. Caregivers and teachers can use the developmental readiness of this age group to help young children develop "attentional control, problem-solving, and coping strategies for managing distressing environmental or emotional experiences" (Rosenbalm & Murray, 2017). Starting in infancy and building upon these skills throughout toddlerhood and later pre-school ensures that children will enter kindergarten ready to learn. Building self-regulation skills in ECE is also an investment

because “stronger self-regulation predicts better performance in school, better relationships with others, and fewer behavioral difficulties” (Rosenbalm & Murray). Likewise, the ability to regulate strong feelings and thoughts helps to build overall resilience.

Self-regulation skills are important for school success, but what does that look like for an infant or toddler? For infants, “self-regulation occurs within the context of consistent, responsive relationships” (Head Start, 2022a). Infancy is a critical time for building secure attachments with caregivers, including parents, guardians, and teachers. Secure attachment is “when children know they can depend on adults to respond sensitively to their needs” (Pahigiannis, Rosanbalm, & Murray, 2019). Secure attachment promotes the feelings of safety and security for babies, which are important foundations for building self-regulation. Both infants and toddlers depend on their caregivers to provide comfort, calmness, and safety, particularly during stressful situations. Infants are able to utilize basic self-regulation skills, such as self-soothing (e.g. thumb sucking), or diverting attention from upsetting situations, typically turning to a trusted caregiver (Pahigiannis, Rosanbalm, & Murray). Toddlers can exhibit slightly more advanced self-regulation skills, such as increased focus, behavior adjustments to reach goals, and waiting for slightly longer periods (Pahigiannis, Rosanbalm, & Murray). However, beyond the instinctual skills, self-regulation needs to be taught and practiced.

Supporting Self-Regulation Development. Self-regulation is not an innate skill. There are multiple layers that go into developing self-regulation, beginning with a biological disposition for self-regulation readiness (Rosenbalm & Murray, 2017). More complex skills and motivation for self-regulation are developed through “predictive, responsive, and supportive” environments and relationships with caregivers (Rosenbalm & Murray). Co-regulation refers to “the warm, responsive interactions and support, structure, coaching and modeling provided by caregivers to foster self-regulation development in children,” and is the foundation for helping infants and toddlers develop self-regulation (Rosenbalm & Murray). Co-regulation looks different at various stages of development, as a child’s own self-regulation skills grow and develop, but it remains critical throughout development.

Infants are entirely dependent on their caregivers to meet all of their needs. Infants “react physically to the sensory information around them,” but have little control over any of it (Rosenbalm & Murray, 2017). Therefore, effective co-regulation during infancy includes the following:

- sensitivity to need and cues

- structure and consistency
- warmth and nurturing
- physical and/or emotional comfort during stressful situations
- modification of the environment to decrease stressful stimuli (Rosenbalm & Murray)

Infants can experience distress for no obvious reason, and caregivers can counter these feelings by "being warm and responsive and providing physical comfort to help babies calm down" (Rosenbalm & Murray). A good rule of thumb is to meet the baby's level of disdain with equal levels of calmness, comfort, and warmth. Caregivers can build a stronger bond by responding to cues with eye contact, comforting words, or physical affection, like a hug. This interaction between a baby and caregiver (baby cues → caregiver appropriately responds) is referred to as "serve and return," and is extremely beneficial because "neural connections are built and strengthened in the child's brain that support the development of communication and social skills" (Center on the Developing Child, 2022). Serve and return interactions are important for healthy development because without them, the brain isn't getting that positive growth and "the body's stress response is activated, flooding the developing brain with potentially harmful stress hormones" (Center on the Developing Child).

Toddlers have a little bit more control over their environment, such as being able to ask for something to eat if they are hungry or moving away from a loud noise. However, their strong emotions and lack of impulse control far outweigh their limited self-regulation skills. At this stage, caregivers effectively co-regulate by doing the following:

- teaching and modeling skills
- using simple words to communicate needs,
- Talking about emotions and use emotion words,
- providing a safe, structured and nurturing environment (Rosenbalm & Murray, 2017).

Toddlers are parrots, meaning they will mimic everything their caregivers do and say. Therefore, toddlerhood is an important time to model desirable self-regulation skills, such as waiting patiently, using self-calming strategies, or engaging in positive self-talk. Caregivers can also promote the use of "functional" language by using simple words to

communicate needs; teaching and modeling this language helps to develop practical vocabulary, as well as build the child's own capacity for self-regulation. Labeling emotions and modeling how to express feelings will build emotional intelligence, and help children to communicate their needs in different situations; likewise, identifying feelings and emotions is the foundation for being able to deal with the strong emotions that they feel. For toddlers, the classroom should be set up to "invite positive interactions, reduce stress and frustration, and provide a 'home away from home' feeling" (Rosenbalm & Murray).

Initiative and Curiosity. The initiative and curiosity sub-domain refers to "increasing interest in and curiosity about objects and materials in the environment" (Head Start, 2022a). Curiosity in itself is the desire for knowledge about the world around us. Curiosity comes naturally to infants and toddlers, as everything is new to them. They are interested in exploring and figuring out how things work. Believe it or not, babies begin gathering information about the world before they are actually born. In the womb "they can hear their mother's voice, taste the flavors of the foods she eats, and tell the difference between the two languages she speaks" (Head Start, 2022c). All of this sensory intake helps to prepare babies for what they will experience in the world.

So why are initiative and curiosity important and what do they look like in the early years? Curiosity is at the center of all learning; it is what drives humans to want to know more. The National Center on Early Childhood Development [NCECD] (2022) explains that curiosity "helps children be more observant and to think about things and try to figure them out," and it also helps little ones discover that they can actually make things happen and "have an impact on the world." This not only builds a child's sense of self but it aids in teaching them about cause and effect relationships. Curiosity about different sounds and noises also supports language development. This type of interest supports language development because children "expand their vocabulary as they use language to describe what they're thinking, seeing, hearing, or experiencing" (Balani, 2020). Research also shows "that the more curious children are, the better they do academically in reading and math once they enter school" (Parlakian & Shah, 2020).

Infants and toddlers express curiosity long before they can accurately verbalize it. Babies show their inquisitiveness with questioning expressions (raising eyebrows, wide eyes), looking back and forth between what is being observed and a "trusted information source" (parent, teacher, older sibling), vocalizing excitement, or pointing to what is being observed (Parlakian, 2020). Toddlers might use their developing verbal

skills to ask questions or repeat an action several times to see if the results change. Toddlers will also take a caregiver's hand to physically show what they are curious about.

Supporting Initiative and Curiosity Development. Secure relationships with caregivers is the foundation of initiative and curiosity development in infants and toddlers. Early models of trust and responsiveness from a caregiver "build the self-confidence they need to initiate exploration, attempt new experiences, and engage with objects and people" (Illinois Early Learning Project, 2022). For example, when toddlers walk on grass for the first time, they are interested and excited to see what it feels like on their feet; however, since this is a new experience, they feel more confident if they know that their trusted adult is nearby just in case.

Allowing infants and toddlers to try things their own way supports the development of initiative and curiosity. Sometimes this means allowing a child to try, fail, and try again. While this may cause a little bit of frustration, it forces little ones to try different approaches until they find one that works, which directly develops initiative. Likewise, supporting children through trial and error shows them that it's okay to make mistakes.

One of the best ways to encourage curiosity and discovery in children is through play. Head Start (2022d) defines play as "an activity that is fun and engaging for the player." Play should include elements of choice for the child but it can be facilitated by caregivers. Through play, children form and explore relationships, they "shape and test hypotheses," and "they make sense of their world" (Project Zero, 2022). While learning and playing may sound like separate entities, it is actually through playing that young children learn the most. While schools often focus on attainment of key content and facts, play creates "deep, conceptual understanding that allows them to connect concepts and skills, apply their knowledge to different situations, and spark new ideas" (Zosh et al., 2017).

On the spectrum of playful learning experiences, free play, or unstructured play, probably lends itself most to the development of curiosity. When children are engaged in free play, they are "motivated by their own desires and curiosity, and guided by their own mental rules" (Sundquist, 2022). Free play is child-led, meaning the child decides when to start and end, as well as what rules to play by (within reason, obviously). This independence allows children to be more exploratory in their play, which feeds their curiosity. During free play, caregivers "should not expect that [the] child's play will always make sense, or that they will use toys, games and other objects for the purposes for which they are intended" (Balani, 2020). In fact, the whole idea of free play is that

children can design the rules in such a way that allows them to investigate areas of interest.

Creativity. For infants and toddlers "creativity is about active exploration, self-expression, and experimentation supported within the context of nurturing and responsive relationships" (Virtual Lab School, 2021). When people think of creativity, they tend to jump to creative arts, such as painting, singing, or dancing. While these are all elements of self-expression, creativity for infants and toddlers looks different than for older kids and adults. Head Start (2022a) explains that infants and toddlers will learn to use "creativity to increase understanding and learning," as well as "imagination in play and interactions with others." For infants and toddlers, using creativity to increase understanding consists of the following (in order of progression):

- Interacting with people in different ways
- Changing behaviors, expressions, or actions based on responses of others
- Finding new things to do with everyday objects (e.g. use a spoon as a drumstick)
- Combining objects/materials in "new" and "unexpected ways"
- Finding joy in creating something new (Head Start)

Infants and toddlers use creativity to think outside of the box. When they interact in different ways or find new things to do with an object, they are developing flexibility in their thinking. Banging spoons on pots and pans might be noisy but it is a great way for little ones to develop their creative thinking skills.

For infants and toddlers, using "imagination in play and interaction with others" begins at around 8-9 months, and consists of the following (in order of progression):

- "Uses sounds, gestures, signs, or words playfully through songs, finger plays, or games"
- "Uses imagination to explore possible uses of objects and materials"
- Engages in pretend play with other kids (Head Start, 2022a)

It is not only adorable when young children start to use sounds and gestures during familiar songs, but it is also encouraging innovative development.

Supporting Creative Development. Similarly to initiative and curiosity, play is one of the best ways to develop creativity in infants and toddlers. Play comes in many forms (free

play, guided play, imaginary play, play with objects, play with peers/adults, cooperative play, et cetera), but all of them involve thinking creatively. Imaginary play in particular, which can be done solo, with a friend, or with an adult, lends itself to building creativity. During imaginary play, "children experiment with different roles" (Taylor, 2021). Imaginative play can involve games or dressing up, but it can also be whatever the child wants it to be. While toys like play food, costumes, or action figures can foster imaginary play, they are absolutely not necessary. Sometimes using objects that do not serve a defined purpose, such as a bucket or laundry basket, actually pushes "children to think more creatively" (Taylor).

Although infants do not yet have the capacity to "imagine" themselves in specific roles, they can still participate in play that will later develop their creativity. Taylor (2021) explains that simply "engaging in back-and-forth conversations with your baby offers a chance for infants to try out different social roles." When communicating with an infant, imitating their sounds will encourage a response, such as a squeal or a coo, allowing them to fulfill a conversational role. Encouraging exploration during play also supports creative development. Providing babies with toys and objects of different sizes, colors, and textures is a creative learning experience in itself. Babies will experiment by rubbing the object on their face or arms, or dropping it to see what happens; all of these experiences are new for a baby and feed into that innate curiosity and creativity. Singing action songs, like Patty Cake or This Little Piggy, and modeling the motions "invite participation with their corresponding actions" (Taylor). In infancy, babies will just enjoy watching their caregivers act out the song but once they get a little bit older, they will undoubtedly take part in the action.

By 2-years-old, children are much more adept for imaginative play. Having an area in the classroom or play area containing blocks, buckets, pots and pans, and some Play Doh, for example, creates a space for the kids to use objects in whatever way suits their imagination. Some other ways to encourage imaginative play in toddlers is to roleplay new scenarios or have themed dance parties (Taylor, 2021). Using dolls to practice sharing or taking turns not only lends itself to creativity, but also to teaching important interpersonal skills. Practicing social skills or preparing for an upcoming event through play gives children the opportunity to learn and process related emotions in a low-stakes setting. Within these imaginative roles, "children express their ideas, thoughts and feelings, learn how to control their emotions, interact with others, resolve conflicts and gain a sense of competence" (UNICEF, 2018). Finally, turning on some music for a themed dance party - e.g. the children move around like different animals or their favorite superheroes - gets kids moving (which often meets sensory needs as well),

pretending, and allowing their creativity to flow freely. Pretending to be something that they are not is fun but it also shows the importance of flexible thinking.

In addition to imaginative play, art is an excellent way to support creative development in young children. "Early art experiences are all about the process of sensory exploration . . . [Art] stimulates the senses, and therefore the brain, creating connections and wiring for the brain for future successful learning" (Kile, 2018). For babies, art allows them to experiment with colors, shapes, and textures. For toddlers, art is a means of communication and self-expression during a time when they are identifying their own sense of self. Creating something artistic makes them feel proud, and gives them a chance to show their individuality. Kile explains that for infants and toddlers, "the process of allowing them to manipulate and have an effect on the raw material is so much more important than the final product." It's okay if a project does not come out looking exactly the way the teacher and students originally envisioned it; encouraging and respecting the creativity of the little ones is what is important at this stage.

Social and Emotional Development

Social development refers to "a child's ability to create and sustain meaningful relationships with adults and other children," while emotional development refers to children's "ability to express, recognize, and manage their own emotions as well as respond appropriately to others' emotions" (Head Start, 2022a). The sub-domains of social and emotional development include: Relationships with adults, relationships with other children, emotional functioning, and sense of identity and belonging. Infants and toddlers begin developing both social and emotional skills and behaviors during their earliest interactions with the adults in their lives. Head Start explains, "Children who develop trusting relationships with adults are able to more fully explore and engage in the world around them. They know that the adults will support them in challenging times." Positive early interactions lend themselves to emotional regulation and the building blocks for healthy relationships.

During toddlerhood and into preschool age, children really start to manage their own emotions (with adult support, of course), and use their developing social skills to build relationships with other children. Toddlers use the skills that they learn from adults to interact with children. These relationships "foster problem-solving skills as young children navigate the difficulties and joys of interacting with another child who has different wants and ideas" (Head Start, 2022a). As toddlers build relationships with adults and other children, their own sense of identity and belonging further develops as well. A sense of identity and belonging "contributes to school readiness and learning by

helping children gain self-confidence. When children feel good about themselves and what they can do, they engage more fully in learning opportunities" (Head Start).

The rate of social and emotional development will vary from child to child due to individual, linguistic, and cultural differences. Some cultures encourage an outgoing disposition, while others are taught to be "reserved" in both social interactions and emotional expressions (Head Start, 2022a). In addition, children with disabilities might need ongoing guidance in building social-emotional skills. For example, some children might need direct instruction in how to appropriately express themselves or how to interact with other children.

Relationships with Adults. Healthy social and emotional development of infants and toddlers begins with positive relationships with nurturing caregivers. "Responsive caregiving supports infants in beginning to regulate their emotions and in developing a sense of predictability, safety, and responsiveness in their social environments" (California Department of Education [CDE], 2021). Consistent, nurturing, and responsive relationships with adults build the foundation for all other learning and development. Relationships with adults not only influence children's sense of self, but also how they interact with others. Children learn to relate well with others through their own interactions with trusted adults, as well as by seeing adults interact with other people. Children use adult relationships for "reassurance that they are safe, for assistance in alleviating distress, for help with emotion regulation, and for social approval or encouragement" (CDE).

Relationships with Other Children. Interacting with other children in infancy looks different than in toddlerhood. Infants connect by looking at or touching other children, while toddlers might interact by handing another child a toy or a book. Eventually, babies and toddlers advance to engaging in repetitive activities together, such as rolling a ball back and forth, and then to cooperative activities like building with blocks (CDE, 2021). Through interactions with peers, infants and toddlers "explore their interest in others and learn about social behavior/social interaction," and provide context for "social learning and problem solving, including the experience of social exchanges, cooperation, turn-taking, and the demonstration of . . . empathy" (CDE).

Supporting Positive Relationship Development. Caregivers support the building of positive relationships first and foremost, by being nurturing, responsive, and supportive to the child. Relationships with caregivers are the stepping stones to subsequent positive relationships. "Young children who experience secure relationships are happier, kinder, more social, less anxious, and better learners than those children who do not feel

secure" (Honig & Wittmer, 2020). When it comes to forming positive relationships with other children, toddlers need practice! They need opportunities for learning to share, taking turns, resolving conflict, and communicating appropriately.

Teachers can support peer relationship building by creating an environment that lends itself to positive interactions and sharing. For example, having multiples of a favorite toy allows children to spend more time playing with the toy together, and less time having to take turns playing by themselves. Further, teachers can create an environment that supports playing together by "having a mirror wide enough for two toddlers to look at themselves together, providing a slide or ramp that is wide enough for more than one child, and creating play spaces for small groups of children" (State Capacity Building Center [SCBC], 2018). When taking turns or sharing is a challenge, teachers can help toddlers effectively communicate their emotions and desires to one another.

Another way that teachers support positive relationship building is by modeling prosocial behavior. Toddlers see and hear everything; even when adults think no one is paying attention, toddlers are observing! Therefore, it is crucial that trusted adults are seen showing kindness and respect to colleagues, supervisors, parents, other adults, and children. While sometimes roleplaying with another adult is a great way to show prosocial behavior in the context of a lesson, modeling should be done in everyday interactions. Children will emulate what they see their trusted adults doing.

Since toddlers are just learning how to form friendships, teachers can help them to better communicate with one another. Toddlers might not have the language to communicate their thoughts and desires effectively, so teachers can be there to assist. For example, if one child is closely watching another child but is not interacting, the teacher might say, "You seem very interested in what she is doing, would you like to ask, 'Can I play with you?'" (SCBC, 2018). If one child does not understand what the other is trying to say or do, teachers can intervene and try to clear up confusion.

Finally, teachers should provide babies and toddlers with time to play and cooperatively interact with one another. Activities that encourage sharing, such as an art project with an abundance of supplies, are great options for positive interaction between kids. Group activities are also an opportunity for teachers to acknowledge thoughtful behavior by children, which encourages them to continue engaging in that way. For example, a teacher might say, "I love how Sarah shared the red crayon with John; that was very kind!"

Emotional Functioning. Emotional functioning refers to childen's ability to express their own emotions, manage emotions with support, interpret the emotions of others, and express concern (or empathy) for others. In infancy, babies express their emotions through facial expressions, vocalizations, and body language. As their communication skills advance, toddlers use words to communicate their emotions as well. Infants and toddlers will also show their understanding of other people's feelings, often by sharing an emotional reaction; for example, a toddler will often show excitement when other kids are animated, or smile back when someone smiles at them. Understanding other people's emotions leads to showing empathy, which might look like crying when another child is crying, or offering a blanket or toy to try to comfort someone.

Supporting Emotional Intelligence & Empathy Development. Teachers can help infants and toddlers build their emotional intelligence by talking about and labeling feelings. By labeling feelings, such as happy, sad, scared, mad, et cetera, children are better able to express themselves and their needs. As a result, they are able to seek support from an adult when they are experiencing negative feelings. For young children, using storybooks to talk about feelings is an "excellent way to invite children to identify the characters' emotions and relate the characters' experiences to their own" (Funk, 2018). Books are a great tool to teach new social-emotional skills, or to "reteach" social-emotional skills that children are having trouble with. Likewise, asking questions about what the characters are feeling or how situations can be handled differently lets children relate to the characters and "talk about their own experiences, learn new vocabulary words, and practice social and emotional skills" (Funk).

Validating children's emotions, particularly difficult ones, helps them better learn to cope. Labeling and validating the emotions will also help a toddler to work through them. For example, a toddler might be upset when it's time to put the kinesthetic sand away. The teacher might say, "You are very sad that we have to put the sand away. I understand. You love playing with sand and it's okay to feel sad. When you are done feeling sad, you can join us on the carpet for storytime." Obviously this dialogue will vary depending on the situation but the main component is labeling and validating the child's feelings, and offering the next option that he or she can get excited about.

Labeling and talking about feelings will also help a child develop empathy. While having children apologize seems like the right thing to do if they hurt someone, it does not necessarily help them develop empathy. This is because a toddler might not yet fully understand what "I'm sorry," even means. It is more effective to talk about the other person's feelings, which explains why he or she feels sorry. For example, the teacher

might say, “Look at Jessica. She is crying. She is rubbing her arm where you pushed her. Let’s see if she’s okay.” This type of dialogue also helps children see the connection between their action and the other person’s reaction (Lerner & Parlakian, 2022).

Identity & Belonging. Identity and belonging refers to children ”developing a positive sense of who they are, and feeling that they are valued and respected as part of a family and community” (First 5, 2022). Babies have their first experiences with identity when they discover their own physical selves; babies are fascinated by moving, watching, and touching their own hands and feet. These bodily interactions help them to “identify their own body, especially when they compare the sensations with touching someone else” (Reschke, 2019). As they develop new skills like rolling, crawling, and walking, they gain an even greater understanding of their own physical beings. As babies get older, seeing their own picture gets more exciting as well, as they begin to realize that they are looking at themselves. “Scientists tell us that before their first birthday, most babies react differently to a video of themselves than to a video of another familiar person” (Reschke). Soon after 18-months, some important milestones include recognizing themselves in a mirror, and referring to themselves in third person. “Understanding that they are their own, separate person also means that toddlers begin using their favorite pronouns: ‘me,’ ‘my,’ and ‘mine’” (Parlakian, 2019). Children also gain a sense of identity through sounds they can make, as this is another example of the “control they are gaining over their bodies” (Reschke). Physical attributes and developing skills make up a large portion of a baby and toddler’s sense of self. Reschke explains that “when asked to talk about themselves,” toddlers and even older preschoolers “focus almost exclusively on what they look like, what they like to play with, and what they physically can do.”

While the physical self typically comes first, young children are also learning about “their own and others’ internal selves—abstract attributes of themselves and other people that are mental, emotional, or aspects of their personality” (Reschke, 2019). One of the first abstract labels that a child attaches to is his or her name. Reschke explains, “A baby learns that this special word somehow uniquely represents her because of the unique way her closest adults use it around her.” In infancy, this recognition will present as babies respond to their name being called by getting quiet, smiling, or cooing. As children further develop into toddlerhood, they will start to come when their name is called and take note when others notice what they can do.

Another important element of a young child’s sense of identity and belonging is a “sense of ownership of people, places, and things, especially those they have strong emotional connections to” (Reschke, 2019). Before babies can actually verbalize it, they can

identify which adults “belong” to them. Babies and toddlers understand that they are connected to their parents, grandparents, siblings, pets, teachers, and other important individuals in their lives.

Supporting Identity & Belonging Development. Similarly to the other infant and toddler domains, developing identity and belonging begins with healthy relationships with caregivers. Developing trusting relationships with adults contributes to a children’s understanding of who they are, as well as their confidence and self-esteem. Young children develop “a sense of themselves as it is reflected in how they are relating to people who matter to them” (Reschke, 2019). Children will also attach themselves to descriptive words that are repeatedly used by adults in their lives. “Every time an adult makes comments to a child that include descriptive words about what he is like—whether positive, negative, or neutral—it provides additional data that are added to his mental structure of who he is” (Reschke). For this reason, it is crucial that adults are intentional in choosing how they refer to young children. Attaching descriptions to traits “become part of their self-image,” or who they are, and is considered something that they cannot control, whereas attaching descriptions or labels to “behavior . . . to what they do rather than who they are— children build a sense of control over that part of themselves” (Reschke). Children quickly learn that they can adapt their behavior and get different results. “Psychologists call this perspective having a sense of agency and consider it a very important aspect of a positive, healthy development of self” (Reschke). Thus, what adults say to and about children matters. Kids hear and internalize observations and this contributes to how they view themselves. Reschke explains that this type of internalization starts early and “begins in how a parent or care provider applauds their accomplishments and contributes to a sense of pride, or criticizes the child’s behavior and contributes to a sense of guilt.” Although this is an extreme example, consider the difference between telling a child, “You’re a bad kid,” or “You made a bad choice.” Kids realize they can change a bad choice and that “bad” is not who they are as a person. Labeling behaviors, emotions, and choices, rather than more “permanent” parts, lets them know that they can grow and improve. On the flip side, using specific praise can also support identity and belonging in children. Rather than simply saying, “Wow, you’re so nice,” instead saying, “It was so nice of you to share your snack with your friend; it made her feel so happy,” is much more specific and meaningful. By using specific praise, “you’re showing your child how to think and talk positively about themselves. You’re helping your child learn how to recognise when they do well and feel proud of themselves” (Raising Children Network, 2020).

Children develop a sense of belonging through their relationships with family, teachers, classmates, and community. Even as a young child, "belonging is a basic human need and that it is vital to children's social and emotional development" (Meiners, 2018). Having consistent daily routines, such as hanging up their backpacks and having a morning snack with classmates can build community and belonging. "By participating in familiar activities and routines, children develop a sense of belonging and gain self-confidence" (Head Start, 2022a). Encouraging community in the classroom is also essential. "Parents, staff and children are all integral parts of any childcare setting and a sense of community creates an identity that a child can really belong to" (Stepping Stones Childcare, 2021).

Language and Literacy

Language development refers to receptive language, e.g. listening and understanding, and expressive language, e.g. using language to communicate to others. Babies listen to language, through speaking or music, before they are even born. The infant and toddler subdomains for language and literacy include:

- Attending and Understanding
- Communicating and Speaking
- Vocabulary
- Emergent Literacy (Head Start, 2022a).

Language is more about communicating ideas from one person to another, and "literacy is the ability to use and understand written words, or other symbols, in order to communicate" (Head Start, 2022e). Language skills develop first but as these skills progress, toddlers begin to understand that words can be written down and read.

By interacting with responsive adults, babies quickly learn to communicate through gestures and facial expressions. "They move from babbling to understanding many words spoken to them and then uttering or signing their first words. Toddlers learn to speak new words . . . and use language to express their needs, ask questions, and engage in short conversations" (Head Start, 2022a). As children enter preschool age, their language skills grow exponentially, which leads to speaking in sentences, categorizing words, telling stories, and engaging in discussions. Language development affects learning in all areas but is closely related to emerging literacy skills. "Emerging literacy refers to the knowledge and skills that lay the foundation for reading and writing," which are interrelated with language acquisition specifically because as they

“listen to and repeat songs and rhymes, explore books, and hear stories, they are gaining literacy skills” (Head Start).

Language and literacy skills can develop in any language. Typically, a child’s home language develops first and prepares them to learn English. Children are considered dual language learners (DLLs) when they are learning two or more languages at the same time. Parents and educators often worry that learning two languages will cause confusion, but this is not the case. Not only are young children fully capable of learning two languages at the same time, but “experts believe that growing up bilingual is beneficial for both children who are DLLs and for all children in general” (Nemeth, 2020). For DLLs, having a solid foundation of their home language will aid them in learning English. Family and cultural expectations can also influence the way a child communicates with teachers. For example, in some cultures children are taught that it is respectful to make direct eye contact while talking to an adult, and in other cultures they are taught that it is respectful to avoid direct eye contact (Head Start, 2022a).

Supporting Language & Literacy Skills Development. The best way to encourage language development in children is by talking to them! Simple, right? Raising Children Network (2021) says, “From birth, talk with your child and treat them as a talker,” meaning having back and forth conversations with them even before they’re officially “talking” is important. Responding to a child’s verbal and non-verbal communication with words or facial expressions encourages a back and forth conversation, or exchange (Head Start, 2019). For example, the following is a back and forth exchange between a teacher and an infant: Mrs. Jones is holding 8-month old Juan and looking up at an airplane. Juan’s eyes go wide and he coos, so Mrs. Jones responds with, “The airplane is moving so fast,” Juan coos again and Mrs. Jones continues, “You’re right, the airplane is also very loud.” Though Juan cannot talk, he is trying to engage with Mrs. Jones, and she encourages this language development by treating him as a talker and continuing the conversation.

Responding and providing words for a baby’s signals helps develop language. For example, if a baby points to a bottle, the teacher might say, “You want your bottle,” before handing it to the baby. Reciprocating eye contact or a smile is also a means of responding back to a child. “These immediate and sensitive responses tell your baby that his communications are important and effective, which motivates him to keep communicating” (Raising Children Network, 2021). Likewise, building upon what a child says helps to develop language. When older babies and toddlers start to use words, it usually begins with one word at a time. So when the child says, “book,” the teacher can

say, “You want to read a book?” Hearing their words used in complete sentences helps put the vocabulary in context, and will assist in eventually using their own multi-word sentences. Similarly, narrating what is going on around children will help them to understand the meaning of different words and actions that accompany the words.

Reading, reading, and reading some more encourages both language and literacy development, starting at birth! Reading helps with language acquisition, communication skills, literacy skills, and even social skills. The reason for this is because “reading to your children in the earliest months stimulates the part of the brain that allows them to understand the meaning of language and helps build key language, literacy and social skills” (Children’s Bureau, 2017). While reading, teachers can also sometimes point to words in the book to show children the connection between the spoken and written words. Children learn vocabulary through listening to sounds and conversations going on around them but “introducing reading into their auditory learning provides another benefit: it introduces the language of books, which differs from language heard in daily life” (Raising Children Network, 2021). Reading books with colorful language and pictures, pointing to the pictures, asking questions, and discussing the story, will engage young children in learning vocabulary. “A large vocabulary, or the amount of words a child understands, supports later school readiness” (Head Start, 2022e).

Cognition

“Cognitive development includes reasoning, memory, problem-solving, and thinking skills that help young children understand and organize their world” (Head Start, 2022a). Children are naturally wired to support their own cognitive development through curiosity and exploration, but they still require support from adults. The reason for this is because when children feel safe and secure, they are more comfortable experimenting with their surroundings. “In the process, they begin to understand basic mathematical, spatial, and causal relationships . . . [and] can rely on their developing memory to help them make sense of the world” (Head Start). The sub-domains of cognition are exploration and discovery, memory, reasoning and problem-solving, emergent mathematical thinking, and imitation and symbolic representation and play.

Exploration and Discovery. From birth until about 24-months, children are in what developmental research Jean Piaget referred to as the sensorimotor period. Simply put, “children use their senses and actions to learn and grow” (Anthony, 2021). Babies and toddlers constantly touch, move, look, listen to, and even lick any objects they can find. These actions allow young children to learn about the world around them. For example, “A toy animal may be just a confusing array of sensations at first, but by looking, feeling,

and manipulating it repeatedly, the child gradually organizes her sensations and actions into a stable concept: toy animal" (Thompson, 2019). As physical growth occurs, cognitive growth typically does as well, particularly when it comes to exploring the environment. "Physical abilities create opportunities to explore in new ways and learn different things" (Head Start, 2021). For example, when babies learn to grasp and release with their hands, they can then throw or drop objects. Through such activities, "children learn object permanence (understanding that people and objects exist even when they are out of sight) and cause and effect (understanding that actions make things happen)" (Head Start).

Between 18-24 months, children enter the preoperational stage, which lasts until about seven years old. During this stage, "children learn to use symbols and representational thinking, such as language" (Anthony, 2021). At the beginning of this stage, "children . . . do not yet understand concrete logic, cannot mentally manipulate information, and are unable to take the point of view of other people, which he termed egocentrism" (Cherry, 2021). Some of the major hallmarks of the preoperational stage are language development and increased engagement in pretend play. From ages 2-3, there is an abundance of new learning and thought: "Children are able to respond to simple directions, group objects by category, imitate more complex actions and show increasingly vivid use of the imagination" (Anthony). As the preoperational stage develops, children become more equipped to engage in imaginative play, and begin to enjoy when another child joins in on the fun.

Memory. For infants and toddlers, the memory subdomain focuses on the capacity to differentiate between "familiar and unfamiliar people and objects, anticipate and participate in parts of personal care routines, learn language, and come to know the rules of social interaction" (CDE, 2021). This begins as recognizing familiar people and voices in infancy, progresses to remembering actions, locations of familiar things, and routines, and communicating about all of it (Head Start, 2022a). Likewise, the memory subdomain includes the understanding of object permanence.

Reasoning & Problem Solving. Infants and toddlers learn to solve problems through exploration of their environment. For babies, problem-solving seems simple: how to press a button, get a maraca to make noise, or fit a block into a certain spot. However, all of these "problems" require critical thinking skills, which begin forming in infancy and will be crucial for school and later success. Young children learn by doing which requires a great deal of trial and error; this means it is essential to provide a safe space for exploration and experimentation, as this is how problem solving skills develop.

Emergent Mathematical Thinking. Emergent mathematical thinking refers to the development of number sense, spatial awareness, and the understanding of similarities and differences of objects. For babies and toddlers, number sense development presents itself as looking for more than one object (e.g. searching for a second or third block), or using language like, "more," to request a change in quantity. Spatial awareness is gaining an understanding of how objects move and fit together, such as putting together puzzle pieces. Understanding similarities and differences includes sorting and matching objects to categorize them; for instance, sorting shapes by color, or grouping toys by animals versus inanimate objects.

Imitation & Symbolic Representation in Play. During the preoperational stage, children begin to understand symbolic relationships and engage in pretend play. Children will start to mimic sounds, words, gestures, and behaviors. This includes imitating people, as well as pretending to be animals or even objects (e.g. an airplane). Young children will also play with objects as what they are, as well as pretend that one object is something else (e.g. a block is a car). Finally, children will use pretend play to gain an understanding of their own lives. This might include acting out familiar routines, pretending to cook something, or imitating everyday actions.

Supporting Cognitive Development. Play is how children learn about themselves, the world, and other people. Play fosters cognitive growth and is essential for healthy brain development. When children participate in play and fully envelop themselves in it "they develop more sophisticated and complex ways of thinking" (Center for Inclusive Childcare, 2020). Play allows children to cultivate problem-solving skills, such as manipulating a puzzle piece to fit correctly, or finding the best block to build a tower. Play also teaches children cause-and-effect when they experiment with different actions to see different results. For example, children will build a tower and then push it over, and this shows them that all the blocks all tumble down. "When children have the opportunity to have extended periods of time (at least 30 minutes of uninterrupted time) to engage in play that is meaningful and relevant to their lives. both attention span and memory skills are enhanced" (Center for Inclusive Childcare).

Different kinds of play lend aid in different types of cognitive development. Play with manipulatives, including Legos, magnet blocks, and pegboards, "encourages a variety of math readiness skills that help children to move from concrete to abstract thinking" (Center for Inclusive Childcare, 2020). With the use of manipulatives, children can practice sorting, creating and identifying patterns, manipulating shapes, and ordering.

These skills lend themselves to later mathematical concepts like number sense, understanding shapes, and spatial reasoning.

Engaging in sensory play with materials like sand, water, clay, or Play Doh, "provides children with opportunities to experiment with the scientific concepts of sinking, floating, and that there can be changes in state with certain materials" (Center for Inclusive Childcare, 2020). Sensory play can be taken a step further when measuring tools are added. Children can learn concepts like "more, less, bigger, smaller, equal to and volume" (Center for Inclusive Childcare). Sensory play also allows children to test their ideas and hypotheses. For example, a child might pour water over sand to see if the texture is better or worse for building.

Dramatic play allows children to practice with storytelling, planning, and sequencing (Center for Inclusive Childcare, 2020). Children use their imaginations to decide on a general theme for their dramatic play and then exercise their "skills in concentration and attention to focus on organizing their ideas, gathering materials and finding creative solutions to challenges" (Center for Inclusive Childcare). During dramatic play, children can pretend to be someone else, which requires the skill of making connections. For example, if children are pretending to be chefs, they might press the buttons on their toy microwave to cook food or pretend to cut up vegetables, which are connections they are making from their real life to play.

Perceptual, Motor, and Physical Development

This domain is composed of four elements: 1) perception, 2) gross motor, 3) fine motor, and 4) health, safety, and nutrition (Head Start, 2022a). Perception refers to the use of senses to explore and gain information about the world. Perception is obviously a cornerstone of the sensorimotor stage discussed above. Motor skills, categorized by gross and fine skills, refer to moving the body. Gross motor skills include "moving the whole body and using larger muscles of the body," while fine motor skills "refer to using the small muscles found in individual body parts" like hands and feet (Head Start, 2022a). In infancy, gross motor skill milestones include gaining control of the neck to hold the head up, and eventually being able to sit up and stand. In toddlerhood, gross motor skill milestones include walking, throwing, skipping, and jumping. Infants and toddlers use fine motor skills to grasp objects, like cups or utensils, and to manipulate tools like scissors or markers. Health, safety, and nutrition encompasses the use of safe and healthy behavior. For example, children learn to use a toothbrush with adult support, and can eventually apply toothpaste and do it independently. Another example is communicating to an adult if they are hungry or don't feel well. "Perceptual, Motor,

and Physical Development is foundational to children's learning in all areas because it permits children to fully explore and function in their environment" (Head Start).

Supporting Perceptual, Motor, and Physical Development. Creating a safe environment where children can actively explore and move their bodies supports perceptual, motor, and physical development. Teachers can provide toys and play materials that offer sensory experiences and encourage little ones to use their senses to explore. For example, when children play with Play Doh, they feel it against their hands, can squish it with different amounts of pressure, manipulate it into different shapes, and even smell it -- it is a multi-sensory experience. Teachers can also arrange activities that promote the use of gross motor skills, such as a game of beanbag toss or catch between partners. Playing outdoors usually provides more opportunity to enhance gross motor skills, as children can play games like Red Light Green Light (running and stopping), or kick a soccer ball in a net. Art projects are a fun way to develop fine motor skills, as children can practice coloring on paper, cutting, gluing objects, or moving stickers around. Including children in performing self-care routines with increasing independence helps them master the health and safety sub-domain. This includes encouraging children to explore healthy food choices, using both their fingers and utensils.

Section 2 Key Terms

Cause and effect - Understanding an action can cause something to happen.

Co-Regulation - Warm and responsive interactions between an adult and young child that provide the support and modeling children need to self-regulate

Dual Language Learner (DLL) - Any young child who is learning two or more languages

Expressive Language - The ability to communicate with others through gestures, speaking, or writing.

Fine Motor Skills - The ability to make movements using the small muscles of the hands

Gross Motor Skills - The ability to make movements using the large muscles in the arms, legs and torso

Literacy - The ability to use and understand written words, or other symbols, in order to communicate

Playful Learning - An umbrella term that is used to include free play, guided play, and games

Preoperational Stage - Second stage in Piaget's theory of cognitive development; during this period, children are thinking at a symbolic level but are not yet using cognitive operations

Receptive Language - The act of attending, listening to, and comprehending language.

Self-Regulation - The ability to understand and manage behavior and reactions to feelings and things happening around you

Sensorimotor Stage - First stage in Piaget's theory of cognitive development; during this period, children use their senses to learn about themselves and their environment

Serve and Return - Responsive interactions between children and caregivers

Section 2 Reflection Questions

1. Reflect on a time that you had difficulty controlling your emotions. How did it impact your ability to think rationally? How might this be even more difficult for a child?
2. What specific strategies do you use in your classroom to support approaches toward learning? This can include strategies to help children with self-regulation, initiative, curiosity, or something else.
3. What are some ways that you build strong, responsive relationships with your young students? Do you think your caregiving style supports the development of your students? Why or why not?
4. In what ways have you noticed that cultural expectations impact the way children approach learning? What about the way that they communicate? How do you support these cultural differences?
5. What are some examples of how infants and toddlers in your classroom use math concepts in their daily routines? What about science concepts (experiments, hypotheses, etc.)?

Section 2 Activities

1. Research storybooks that you can use to support emotional functioning. Choose one of the books and write down the specific skill the book helps to teach and some discussion questions you can pose as you read.

2. Familiarize yourself with the early learning domains and goals in your district. Compare them with the domains and subdomains discussed in this course.
3. Design a lesson plan that utilizes an element of play. The subject matter is up to you and the type of play is up to you but it must be a substantial component of the lesson.
4. There are standardized assessments to evaluate infant and toddler readiness but teachers also need informal assessments. Choose one of the domains and design an informal assessment for it.

Section 3: Brain Development

Research shows that early experiences and relationships "literally shape and form the architecture of the infant's brain" (Head Start, 2022f). Healthy development of the brain depends on a number of factors, including genes, prenatal care, proper nutrition, exposure to toxins or infections, and the "child's experiences with other people and the world" (Center for Disease Control and Prevention [CDC], 2022). Why are early experiences so critical for later development? During the first few years of life, the brain grows more than it will during any other period of life, with at least "one million new neural connections (synapses) made every second," and developmental plasticity, or the brain's ability to change and adapt, at its highest (First Things First, 2022; Moore et al., 2017). "The young brain has a repertoire of neuroplasticity responses that are not evident in adults, and which allow the young brain to develop appropriately and adapt constantly to environmental experiences and exposures" (Moore et al.) The brain's capability to adapt during these early years presents educators with the critical responsibility to provide young children with rich educational opportunities; such experiences can alter the brain's development and impact future learning, health, and social-emotional outcomes.

Interpersonal Experiences

Children's interpersonal relationships with adults has a great impact on the way their brains develop. When children have consistent, nurturing caregivers "their brains are primed for early learning experiences that cultivate social, emotional and academic skills for lifelong success" (Reading, 2018). During infancy and babyhood, babies' survival is largely dependent on their caregivers and healthy brain development is dependent on

their needs being met. When such needs are met, their brains release oxytocin, which is one of the "feel good" chemicals. When children feel safe and secure, they are also more alert and able to learn. As these experiences are repeated with consistent caregiving, synapses that respond to nurturing behavior grow stronger, and "babies' brains construct perceptions of the social and emotional world in which they live" (Lally & Mangione, 2017). These perceptions ultimately influence how young children understand their environment, engage in learning, and relate to other people. Therefore, when strong connections are formed in response to responsive caregiving, the brain perceives the world as a safe place, and the child feels secure.

During the first few years of life, researchers say that children go through "prolonged helplessness" because they are "dependent on others for safety, survival, and socialization" (Lally & Mangione, 2017). Prolonged helplessness is not meant as a negative term, as infants learn from the nurturing of their caregivers during this time. These interactions are the building blocks of the brain, as babies "shape their brains to function in the particular physical, social, and linguistic environments of those who care for them," basically "attending to" the modeling, thinking, and acting of the caregiver (Lally & Mangione). When early needs are met, children feel the confidence to explore their environments and build relationships, which are cornerstones of cognitive development and overall school readiness.

Reliance on caregivers, and more importantly, the responsiveness of caregivers, aids in forming secure attachment. When a baby is crying and the caregiver picks her up to comfort her, that is letting the baby know that she can express emotions and she will be met with a comforting response. Secure attachment is correlated with the healthy development of "self-reliance, self-efficacy, empathy, and social competence" (Lally & Mangione). Secure attachment also leads to the development of self-regulation skills, as the infant builds these skills by receiving the necessary support and comfort from caregivers. Insecure attachment occurs when a caregiver is unresponsive, unavailable, or unreliable; as a result, the baby must find other means of self-regulation. Insecure attachments are associated with "developing social and emotional maladjustment in later life" (Lally & Mangione). The attachment style formed during infancy will affect the way that children learn and relate to others as they get older.

Toxic Stress

Toxic stress refers to the body's response when stress is "prolonged, severe, or chronic, and can cause significant problems with health and development" (Administration for

Children & Families, 2017). This is not the same as normal life stressors, which are typically brief and a healthy part of development. Toxic stress occurs when young children experience trauma, such as violence, abuse, neglect, war, or unstable living conditions like poverty. Toxic stress causes the body's stress response system to be activated too often, releasing excessive amounts of cortisol in the brain. In moderation, cortisol can contribute to healthy brain structure, but when it is constantly released it can "alter the way the brain might otherwise develop" (Head Start, 2022f). When a particular part of the developing brain is consistently used - in this case, the stress response - the synaptic connections grow stronger; for example, if a young child is frequently exposed to violence in the home, the brain forms stronger connections in the "fight or flight" area of the brain, or the amygdala, causing a child to be in a constant state of hyperarousal. As a result, this "danger zone" area is going to be more frequently used and developed than the parts of the brain used for thinking and learning. Similarly, areas of the brain that are under-stimulated, due to neglect - which is also a cause of toxic stress - will be much weaker because they're not being used, and thus not forming strong synaptic connections; the developing brain functions under a "use it or lose it" framework. The frequent toxic stress brain response increases "the risk for physical ill health, such as asthma, hypertension, heart disease and diabetes . . . and has been linked to depression, anxiety, and disruptive behaviours" (Moore et al., 2017).

In order to learn effectively, children need to feel safe and calm. When feelings of safety and security are disrupted by ongoing stress, "the child's brain places an emphasis on developing neuronal pathways that are associated with survival, before those that are essential to future learning and growth" (Moore et al., 2017). When a child's brain is in survival mode, the parts of the brain that are associated with learning and memory are essentially disconnected. Rather than being receptive to learning experiences, this type of stress response keeps a child in a constant state of anxiety, and actually prevents higher-order thinking. It's important to remember that the brain is ultimately wired for survival, so those instincts will override the learning, memory, and logic parts of the brain.

Supporting Infants & Toddlers with Toxic Stress. Responsive, loving, and nurturing relationships can create a buffer to toxic stress. Young children's brains have the ability to adapt and change based on experiences and circumstances, so providing them with consistent love and support can aid in their healthy brain development despite trauma. Predictability and consistency are key for combatting toxic stress. As teachers, providing structure in the classroom makes children feel safe, as they know what to expect from day to day. This might include going over the schedule each morning, keeping color

coded schedules on the board for reference, and implementing consistent routines. Giving children warnings before transitioning from one activity to the next is also helpful.

Teachers can also provide young children with a “calm down corner,” or a space in the classroom where they can compose themselves when feeling overwhelmed; keeping a basket of calming sensory tools (Silly puddy, fidgets, a stress ball, coloring pages, etc.) provides children with additional tools to help them self-regulate. Teachers can also explicitly teach calming strategies to little ones, such as deep breathing, coloring, squeezing or cuddling a stuffed animal, or positive self-talk. Depending on the level of understanding of the child, teachers can help kids to “switch the channel,” explaining to children that “their brain is like a remote control that they can use to ‘switch the channel’ to help them calm down” (Minahan, 2019). Such activities are meant to be cognitive distractions, which are “incompatible with negative thinking” (Minahan). Switch the Channel activities might include a listening center, hidden picture activity, or counting all of the (blue, green, red, round, square, etc.) items in the room. The activity can be anything as long as it requires the brain to focus on something other than the negative feelings the child is experiencing.

Section 3 Key Terms

Amygdala - Region of the brain primarily associated with emotional responses, including processing threatening stimuli

Cortisol - The body’s main stress hormone

Oxytocin - Hormone linked to happy, feel-good emotions

Trauma - An emotional response to a terrible event

Section 3 Reflection Questions

1. It is difficult for children to learn if they do not feel safe. What do you currently do in your classroom, or what can you do in the future, to foster a sense of safety in your classroom?
2. How does understanding brain development influence the way you work and interact with young children?

3. Think about a specific child who you knew was experiencing toxic stress. How could you explain the effects of toxic stress on brain development to parents and guardians in a way that would be helpful rather than offensive?

Section 3 Activities

1. Create a list of "Switch the Channel" activities that you can share in your classroom. Write the name of the activity and a brief description, as you would explain it to your young learners.
2. Make an infographic about the effects of toxic stress on brain development that you can share with other teachers and families.

Conclusion

Learning begins at birth and is exacerbated during the first few years of life. During these early years, children develop the foundations for learning, social and emotional development, language and literacy, cognition, and perceptual, motor and physical development, which are the domains that establish school readiness. Through responsive relationships and positive early educational experiences, young children establish the skills necessary for school readiness and later academic and life success.

Case Study

Leaping Frogs is a childcare facility for young children with a large focus on play-based learning and social-emotional development. The school has an infant, 1s, 2s, 3s, and 4s classroom. Located in an award-winning elementary school district, Leaping Frogs is receiving a push from the district to implement more formal school readiness preparation practices in their classrooms. Leaping Frogs takes great pride in its play-based learning approach but is open to suggestions for improving school readiness.

Leaping Frogs uses the Office of Head Start's school readiness domains for infants and toddlers and already requires teachers to plan lessons addressing each of the domains in a given day. The administration wants the classrooms to follow a schedule that has children working through different stations that address the five domains, and that also include both play-based and more formal education-based experiences, and they are

organizing a panel of teachers and other experts to design the plan. They are hoping to also introduce developmentally appropriate informal assessments that teachers can use to evaluate children on school readiness.

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