

What We Know

The science of early brain development can inform investments in early childhood. These basic concepts, established over decades of neuroscience and behavioral research, help illustrate why child development—particularly from birth to five years—is a foundation for a prosperous and sustainable society:

- The basic architecture of the brain is constructed through an ongoing process that begins before birth and continues into adulthood
- The interactive influences of genes and experience shape the developing brain
- The brain is most flexible, or “plastic,” early in life to accommodate a wide range of environments and interactions, but as the maturing brain becomes more specialized to assume more complex functions, it is less

capable of reorganizing and adapting to new or unexpected challenges.

- Cognitive, emotional, and social capacities are inextricably intertwined throughout the journey of life

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What I know as an Early Childhood Practitioner

When I began my career in Early Childhood Education in 1974, brain research and neuroscience were not known to those of us working in this field of practice. What I knew about the development of young children was based on what I learned in courses that focused on the growth and development of children I took at the institution of higher education where I earned my Bachelor’s degree. The practices I was able to offer young children were rooted in my limited observations and best thinking about how to support the growth and development of the young children in our Early Childhood Education (ECE) Program.

The perspective of the families we served related to our responsibilities to educate their children was based on their belief not much was happening as far as “real learning” until their children entered the K-12 education system. The priority of families was to find an ECE Program that was a safe and healthy environment for their children with caregivers who were attentive to the needs of each child. The emphasis was on the “care” of the children during the day rather than leading with a focus on the education of young children that included a caring and nurturing environment. Hence, the entire industry was branded as “Daycare” rather than what I led which was an Early Childhood Education Center. To this day, I am fascinated and quite honestly frustrated by the strength of the oversimplified brand for ECE Programs as Daycare Programs. My frustration results from my commitment to be a lifelong learner which led to what I have come to learn as celebrated Brain Research and Neuroscience that has raised the stakes. We now have evidence that the most rapid period of the development of the brain of young children happens from birth - about 2 years old.

My first introduction to Brain Research and Neuroscience connected to ECE came with the publication entitled “From Neurons to Neighborhood: The Science of Early Childhood Education” (<https://doi.org/10.17226/9824>) and “Eager to Learn”: Educating our Preschoolers” (<https://doi.org/10.17226/9745>). After reading both publications, I began to

become very interested in the development of the brain of young children and the need to strengthen the focus of the ECE Programs I led, starting with supporting the natural curiosity and the desire to learn young children have at this time of development, so they can understand the world around them. The end result was I began to think and reflect more upon strategies to support the growth and development of young children. I realized that Brain Research and Neuroscience provided scientific evidence of the importance of integrating what I was learning from engaging in Professional Development activities and events into my day-to-day role as the leader of an Early Childhood Education business. I began to create professional development activities based on what I was learning; as I engaged with the staff I led, I began to include funding in my annual budget for me and the staff to attend professional development sessions, conferences and events where the topic of brain research and neuroscience was presented. Naturally, I followed up these experiences with conversations with the staff where we reflected on what we learned and how we could integrate what we learned into our work across the organization. For example, I became much more intentional about integrating what I learned into the marketing materials I offered to families interested in enrolling in our program. I also included questions on this topic during interviews with prospective candidates for vacant positions in our program.

As I have progressed with my work as a leader in Early Childhood Education, I have found, at times, the specific information about topics related to the development of the brain were overwhelming to me. As I reflect on what I learn, I do what is necessary to process the information in order to move through and resolve my initial overwhelming feeling because of my commitment to provide young children with a high-quality learning environment. I realize what I learned about the development of the brain revealed the “why” engaging with infants and toddlers is so important.

There’s Magic in The Journey

I remember, quite vividly, an infant teacher I worked with at the first Center where I was the Director. Rosie had an eighth grade education and successfully raised 12 children. My thought was if she raised 12 children and they were all successful in the work they were doing as adults, she must have the experience to know how to care for the infants. I knew my role was to support Rosie to learn strategies to educate the infants in her classroom. She would always remind me that being responsible for the care of 4 infants was so easy for her. After all, she cared for at least four infants at one time as the mother of 12 children. She also knew how to support children in our school-age program, frequently assisting other teachers to engage in playful activities with the infants. I looked forward to

spending time in the classroom with Rosie discussing what I knew about infant brain development and learning from her direct experience (both personal and professional). I consistently provided specific, positive feedback to Rosie as I saw her talking with the infants respectfully. In fact, she learned how to speak with the infants in the same way she spoke with anyone else. We talked about the work she was doing to build the vocabulary of the infants and, even though it would take time, sometimes several years, before the infants would use the words Rosie was depositing into them, eventually the children would use their words in conversations with others.

I always enjoyed spending time in infant and toddler classrooms. I found it was easy to engage in activities with these children. I marveled at how the infants would look at me and mirror what I was doing. They would also respond to any action I did to support them in what they were learning or to introduce a new skill to them. For example, supporting an older infant as they began to learn to walk by themselves or to turn the page of a book. Often, they would smile after they completed an action or activity. Of course, the toddlers were busy doing things of interest to them and would be so responsive to open-ended questions I would ask them. Their responses helped me get to know what they were thinking which I used to plan subsequent activities to support their growth and development.

The Current Status of Brain Development

I know during the first two years of life, the brain is developing at the most rapid rate in one's lifetime. It's also a period of time when it's easiest to learn more than one language. Imagine immersing infants and young toddlers in an environment where they are learning a second language. It sounds far fetched, however we have evidence it's possible.

I know that we are born with the wiring of the brain working to ensure our basic survival skills are functioning. Some examples of this include, the ability to breathe, to feel and express our emotions. What still needs to develop is the ability to regulate our emotions. The area of the brain where these basic functions are operating is at the stem and towards the lower area of the brain. The more advanced skills like the ability to regulate our emotions are not fully developed. Hence, the reason we often see infants and toddlers have temper tantrums to let us know they need our guidance and support. When learning how to regulate the intense emotions they are communicating to us, infants and toddlers exhibit this behavior.

I am beginning to realize infant and toddler teachers are "brain architects". They are supporting the development or building of neuro connections to turn on and develop higher order thinking skills in the brains of the children they serve, such as the ability to calm down when we are agitated to avoid hurting themselves and someone else. Finally, I understand more clearly and deeply that the constant conversations with infants and toddlers that I supported Rosie to have with the infants in

her classroom begin to provide the infants and toddlers with the words they needed to communicate effectively with other people. I am aware of the importance of giving infants and toddlers the words they need to function successfully with others rather than constantly repeat, "use your words", when they are exhibiting challenging behavior of any kind. I support them with the words and actions they need to take to replace this behavior with socially acceptable behavior.

My current understanding of brain development and neuroscience is based on what I learned as I successfully completed the Trainer of Trainers sessions for the 45-hour course developed by Zero to Three, the premier organization focused on young children from birth to 3 years of age. It also includes my recent experiences as the co-facilitator of the 45-hour course and as a Coach for Infant and Toddler Educators who register to complete the Course. The purpose of the Coaching sessions is to create an Action Plan with those I coach to deepen their understanding of the information covered in the 45-hour course. The Course material includes a discussion about the connections being made in the brain of infants and toddlers and how the learning environment you offer to the infants and toddlers in your ECE program strengthens new connections in the brain. As Infant-Toddler Educators, you are "Knowledge Builders" in the brains of these children. A critically important responsibility that is worthy of increased compensation!

Thank you for taking the time to read this article. I hope it was helpful to you in your work as an Early Childhood Educator. The purpose of the article is to offer my thoughts, experiences and skills that I learned, and continue to learn as a leader in the field of Early Childhood Education

Questions for Reflection

1. What are two ideas in this article that are most meaningful to you? How might you begin to apply your understanding of these ideas in your work with young children and their families?
2. What professional development opportunities are you engaged in to learn more about the development of the brain?
3. What do you believe the impact would be if infant/toddler educators were more confident and competent in supporting the development of the brain of young children they serve?

Resources

Center on the Developing Child (2007). The Science of Early Childhood Development (InBrief).

Institute of Medicine and National Research Council. 2000. From Neurons to Neighborhoods: The Science of Early

Childhood Development. Washington, D.C.: The National Academies Press.

National Research Council. 2001. Eager to Learn: Educating Our Preschoolers. Washington, DC: The National Academies Press

Zero to Three (2023). <https://www.zerotothree.org/>