

Reflection Paper on Brain Research

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## Reflection on Brain Research

The first thing that comes to mind when I begin this reflection is a quote from Professor Castro during class this morning, “The brain is an ever evolving and dynamic.” This brings me to our closer look from our Early Childhood Education book, “Brain Research: What have we learned about learning?” (Essa. pg280) This article guides the reader through the mysteries and insights into the nature of the mind. Specifically, talking about the human brain and its functions. We see here that “children’s brains are structurally altered during Learning.” We also learn this through course work and in other child development courses. A lot of our experiences in our environment can have an effect on our development in all domains, which stem from our brain function. We learn that during the first few years after birth, more than 1 million neural connections form every single second. (Harvard Univ.) This shows us, as early childhood educators, that we need to be aware of the positive ways to scaffold or guide children in structurally building there foundation for brain development and growth.

Another important point that the Center on the developing child, from Harvard university, shows and explains to us is that after this proliferation period (which is the mass amount of neuron connections) there is a period that occurs called Pruning. We also study this in CDEC 1354, with Professor Castro, where we learn that if certain experiences or connections aren’t made or then used; they begin to die off or reduce. This then allows the brain circuits to be able more efficient. Whilst reading the closer look, and the article from Harvard university, I begin to feel more and more the stress and importance of us or even parents/caregivers as the early childhood educator to be aware and knowledgeable of the proper strategies and tactics or theories to use or put in place to help with brain growth. We see that if a child experiences emotional stress, and doesn’t receive the proper care/calming or positive interactions early on, it can affect

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their ability to cope with high stress matters or issues later on down the road. Specifically their higher-order skills. (Harvard University.)

Our ECE book, shows us what researchers and scientist have discovered as effective or positive attributes that a caregiver can hold. We as educators aren't supposed to look at the child as an "empty vessel" to be filled, but rather to understand where the child already stands and then scaffold appropriately and accordingly from there. (Essa. Pg.280) We see this applied all throughout the child care field and this makes my brain tie to many different theories. I relate way back to some of the first philosophers in child care and we can see how Locke believed in Tabula Rasa, which would completely contrast what scientist have since discovered. Rousseau although, closely aligned with what this information is stating. He believed that a newborn is born endowed with a sense of morality and justice. Back then, there really wasn't any interrelationship between the domains of development as they mostly focused or cared about cognition. Luckily, with the advances in research and knowledge, we now know that many of the domains are intertwined and reliant on another in some way throughout life. We see this expressed throughout our course in many ways, for example play being a great form of developmental growth. The child is then learning social and emotional skills, if playing with others, and is getting language, cognition, and physical growth as well depending upon the activity or play.

We see and discuss often, how our interactions and actions with peers and others around us always have some sort of impact or result and effect. I fully support and agree with this, as you can simply see it first hand by observing or sitting in a classroom. A teachers responses or tone, can affect how the children respond or react. The interactions between children, and tools and resources provided, can make a huge difference on the emotional responses or physical

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actions or the children. The way that the Harvard article worded it, really resonated and made sense to me. They expressed the importance of early connections that will then provide a strong or weak foundation for the connections to form later. This suddenly clicked and made all the sense in the world to me, I pictured it like a house foundation. If you're already having leaks and cracks in your foundation, such as your brain not having the full capacity/experiences and connections possible, then later on down the road when it begins to rain... your foundation will begin to settle or shift and you'll have cracks. This is just as if you're brain wasn't able to make that strong foundation at a young age, then it isn't sure how to make those connections later on in life when needed, and you'll have more difficulty.

Another thing I learned more on, and found quite interesting as we'd just discussed it in Castro's class, is how Toxic stress can weaken the "architecture of the developing brain." (Harvard Univ.) This article explained to me, that when you're experiencing a/the stress response you're actually producing a wide range of physiological reactions that will prepare you for threat. When these responses remain activated for a long period of time, without supportive interactions or relationship, it then results in toxic stress. This can have impairment on neural connections, and especially in the area dedicated to high-order skills. (Harvard Univ.) This just shows and stresses the importance of a care giver or adult's role, in a child life, especially in the first few years. I think it is super important for adults to be knowledgeable on the negatives and positives that we specifically can have on a child's development from as early as birth. It's just as important for us to learn the proper and appropriate responses or actions, and more importantly definitely the do not's.

I believe a lot of parents or adults, simply don't understand or know the harms that they are directly having on their child, not only now but in the future as well. It should be more

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important and more advertised or stressed, that we learn the different sections of the brain and the functions. I learn from Castro's class, When the brain is in high levels of stress, an unnecessary hormone response happens and it occurs in the lower limbic portion of the brain. This is also called the "lizard brain" and is responsible for breathing/temperature, hunger/thirst, balance, avoidance/survival, territoriality, reproductive drive and mostly reactionary. The mid-brain or "mammalian brain" is responsible for memory, sociability, attack, anger, maternal love, anxiety, fear/hate, and jealousy. It's the social/emotional portion of your brain. Your self-regulation and rationality comes from the frontal/pre-frontal lobe which is responsible for logic/analysis, rational thought, control of emotions, language and morality. (Castro.) All of this information is good to know, and can be put into use when it comes to observing, scaffolding, or caring for a child.

The brain will forever be evolving and dynamic. Point being, we should always be knowledgeable and insightful on the new research and studies that are occurring on our brain. Another key point, and quote stolen from Castro on this subject, "Teachers need to be nice to children." It's our responsibility as a child care professional or care giver and even parent, to support and guide and value each child. Therefore, to be able to do so in a positive/healthy manner, we need to be knowledgeable on child development and be able to understand.

References

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