Art in Early Childhood

First Encounters: Early Art Experiences & Literacy Development for Infants

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ABSTRACT

This paper provides a knowledge base about early brain/vision development, aesthetic preferences and receptive language. These components serve as a basis for art viewing/ making strategies to implement in the art learning environment for babies, ages 6 to 18 months. Infants can benefit from viewing and making art because these opportunities provide sensory experiences that lay the groundwork for perceptual, cognitive, and receptive language development to occur. Caregivers who view art and create it along with an infant help to facilitate this early development process.

During the first year of life, neuron connections in the brain are being fired up when a stimulating learning environment is provided. In tandem with the brain, the visual system quickly develops as well. Therefore, babies possess the capacity to fixate on works of art that they like. Early cognition enables the child to understand the meaning of spoken words.

In order to build receptive vocabulary, viewing strategies, developed by First Encounters, An Art Gallery for Babies, utilizes expressive words to describe the art to babies. The gallery also provides them with a related studio experience that affords parents with the opportunity to reinforce this early receptive vocabulary.

Illustration 1: Mother and baby viewing a painting

INTRODUCTION

Seven-month old Charlie enthusiastically squeals and wiggles out of his mother's arms, his eyes fixated as he reaches out to touch a painting displayed at his level on the gallery walls. What? Touch a painting in an art gallery? That's right! And, so he did with great eagerness and joy as he examined the textured surface and scratched it with his fingernails. As he made sounds of delight, Charlie's big blue eyes studied the painting as his mother described to him what he was seeing – "Look at those interesting marks. See the vertical and horizontal lines. Feel the rough patches? They are like sandpaper." It was hard for Charlie's mother to pull him away from the 'looking experience." He was totally beguiled.

Twelve-month old Emily explores a glass object with a magnifying glass. Her mother watches while describing the characteristics of the glass to Emily. "Look! Isn't it beautiful? See all of the colorful bubbles and swirly lines?" With a gleam in her eyes, Emily smiles and then toddles over to analyze another glass object displayed at her eye level on a pedestal. She picks up each piece and explores the texture, color and linear patterns. All the while, her mother observes and facilitates the 'looking' experience with her daughter.

Illustration 2: Emily looking at glass vessels

This is what art viewing experiences look like at First Encounters – An Art Gallery for Babies. Located in an urban neighborhood arts center of Toledo, Ohio, the gallery is self-funded and open to the public.

In a typical art gallery or museum setting, little children have to strain to see the art works, which are usually displayed well above their eye level. Typically, children are not permitted to touch the works and explore them to appease their natural curiosity. Because of these limitations, parents and their young children may feel unwelcome in many art museums and galleries (Weier, 2004). But, First Encounters is designed specifically with babies and their sensory learning needs in mind.

The gallery provides an educational experience based on current theory and research that includes: brain and vision development; aesthetic preferences; and early literacy (receptive language). All play a part in planning and executing appropriate educational experiences for babies, ages 6 to 18 months.

THE RELATIONSHIP BETWEEN BRAIN/VISION DEVELOPMENT AND EARLY ART EXPERIENCES

The first few years of life are extremely important, as this is the time when neuron connections in the brain are quickly developing. Neuroscientists are beginning to discover that there are links between children's experience in the early years and their predispositions toward certain strengths and the developing brain. Research shows that babies are born with around 100 billion neurons, but the connections or synapses are not yet fully developed (Goouch, Powell,

and Abbott, 2003). Therefore, when babies are provided with sensory stimulation, the brain lights up like a circuit board as the neural pathways connect together to create a thick mesh of activity (Schirrmacher, 2009)

Eighty five percent of the brain's development takes place during the first five years (Shore,1997) and the environment is responsible for 75% of that development during this time (Jensen, 2006). The sensory channels are an infant's way of learning about their world and they help to create those neural pathways. If environmental stimulation is absent, the developmental process and brain growth slows down (Bergen & Coscia, 2001).

In tandem with the brain, the visual system develops very quickly during the first months of life. In fact, "Scientists have determined that the neurons for vision begin sending messages back and forth rapidly at 2 to 4 months of age, peaking in intensity at 8 months. It is no coincidence that babies take notice of the world during this period." (Graham and Forstadt, 2011, p.1). By the first few months, babies have a visual acuity similar to adults (Kellman & Arterberry, 2006) and they also have developed the ability to scan an image or an object that attracts their attention (Aslin, 1981).

Taking a closer look at the mechanisms in the eye that are developing during the early months - rods, that help one to see black and white, are developed during the first month of life. This is followed by cone development, which enables a baby to see color around 2 to 4 months (Graven & Brown, 2008). These visual developments play a key role in a baby's aesthetic preferences for art, which will be discussed in more detail in the next section of this paper.

One kind of sensory stimulation, in the form of viewing art and creating it, utilizes the sense of sight and also touch. A baby's vision needs to be exercised for good development (Shore, 1997), but they can't satisfy their curiosity by just looking. They must touch things to better understand and learn about them. Seeing and touching are necessary to wire the neural circuits in the brain for learning to occur (Brotherson, 2005). "Ninety five percent of information children receive comes to them through seeing, touching, and hearing. Their sensory channels are their primary source of learning" (Schiller, 1998, p.52). Babies learn that, "Some things are smooth, and some are hard, some tear, some don't. Shape, size, and other differences between objects are only discoverable by handling them and mouthing them and they should have this experience" (Zero to Three, 2014, p.1). Therefore, looking, along with touching, is essential in providing a more holistic approach to viewing art and creating it with babies. The senses enable one to know the world by serving as a mediator (Golman, 1998). "Because real learning occurs during the interactive processes between body and environment, which Dewey calls an 'experience', a rich sensory awareness is a critical component for children's ways of knowing as real meaning-making" (Lim, 2004, p.478).

AESTHETIC PREFERENCES OF BABIES

With the brain and vision system working in conjunction with each other, it's not a surprise that babies are attracted to works of art as a source of sensory stimulation. The limbic system plays a significant part in the aesthetic responses of infants. It serves as the seat of emotional responses and biological needs. The amygdala, part of the limbic system, is formed at birth and therefore infants can express emotions at an early age (Eliot, 1999). Bergen and Coscia (2001) note that: "The limbic cortex, where emotions are recognized or felt, matures during the 6 to 18 month-old period"(p.28). The limbic system plays an important role in the "development of

aesthetic preferences and makes us able to attach ourselves emotionally to objects and people" (Tinmannsvik & Bjelland, 2009, p.378). In reference to looking at art, this results in delight for babies when they view bright colors and repeated designs.

There is a strong affiliation between children and art, as indicated by Piscitelli and Smith (2009) who note that, "They are indeed aesthetic beings" (p.6). Lim (2004) considers these early years to be the richest time for aesthetic development, but notes that young children's aesthetic experiences are different from adults. "Biological influence is greater in young children than adults, which implies that they need different kinds of aesthetic stimuli" (Tinmansvik & Bjelland, 2009, p.379).

So what kind of aesthetic stimuli do babies prefer? Early research studies provide some answers. In the first few months, babies show preferences for complexity in the form of patterns with curved lines (Fantz & Fagan, 1975; Fantz & Miranda, 1975). But in his earlier studies, Fantz observed that babies looked the longest at high contrast black and white faces (1963). This is most likely due to the development of the rods in the eye, as noted earlier. Fantz's research has had an impact on the production of picture books and mobiles that are created especially for babies and are still available on the market today.

Additional research indicates that babies prefer vertical symmetrical patterns (Bornstein, Ferdinandsen & Gross, 1981). High contrast, bold patterns have been found to hold the interest of newborns (Banks and Dannemiller, 1987; Haith, 1980; Milewski, 1976; Valenza, Simion, Cassia and Umilta, 1996). Zemach & Teller (2007) found that 12 week-old infants demonstrate preferences for colored visual stimuli as opposed to white. Another study conducted in a museum setting found that babies enjoyed looking at shiny metallic surfaces as well as large expanses of color (Piscitelli & Smith, 2009).

More current research further expands the horizons of infants aesthetic preferences. In 2011, Cacchione, Mohring and Bertin found that infants had strong preferences for paintings by Picasso. Even when color was removed and the contours blurred, babies still preferred works by this artist. Also in 2010 and 2011, other studies were conducted where babies were given a choice about which image they preferred to view. In a series of images, babies were shown two at a time. The image that the baby fixated on the longest was determined to be the favored one. The findings, as a result of the aesthetic preferences of more than 120 babies, suggest that they prefer both abstract and representational paintings, images that are bold in color and are of high contrast, as well as portraits with large eyes (Danko-McGhee, 2010, 2011). Krentz and Earl (2013) also found in their research that babies prefer more complex abstract paintings.

How do we know that a baby likes a work of art? It is through somatic language – a wiggle, a squeal, reaching out to touch it, crawling toward it, or a fixation on the piece. Knowing the kind of art that babies like can help adults to provide a more worthwhile viewing experience. "Aesthetic stimulation represents a positive influence on children's emotional and cognitive development…Varied aesthetic expressions and the richness of the sensory experiences should be the overall goal." (Tinmannsvik & Bjelland, 2009. p.370). However, aesthetic encounters can become more quality learning experiences when adults facilitate the viewing process. Adults play a vital role in facilitating young children's learning (Munley, 2012). Communication, in the form of language, plays a key part in this. Being informed about early literacy and language development can help to provide a more quality art viewing experience.

LITERACY AND EARLY LANGUAGE ACQUISITION

Early literacy is comprised of at least three categories: oral language comprehension, phonological awareness, and print knowledge (Roskos, Christie, & Richaels, 2003). While all three are important, the focus of this paper is oral language comprehension and how it can relate to early art experiences.

Babies' brains process words and images in an adult way. In the first three years of life, infants and toddlers begin acquiring the first of thousands of words they will use throughout their lives (Im, Osborn, Sanchez, and Thorp, in press). In fact, infants already know the meanings of several common words from the age of six months onward (Bergelson & Swingley, 2011). But, by 10 to 13 months, infants possess the ability to link several common abstract words to their referents (Bergelson & Swingley, 2013). This suggests that the ability to learn abstract words during daily routines is in place six months earlier than previous research has indicated. (Bergelson & Swingley, 2013)

According to a recent study, when babies were shown pictures of familiar objects and then heard words that were either correct or incorrect names for these objects, an incorrect match generated a brain response that was different than the correct match (Travis, Matthew, Leonard, Brown, Hagler, Curran & Anders, 2011). Therefore, when applying this to responding to art works with a baby, it is important not to just observe and validate their responses, but to also verbally identify what is being seen. Connecting words with their meaning is vital in priming the brain to learn through context. Daily exposure with language affords infants with an opportunity to learn everyday words (Bergelson & Swingley, 2011).

In an effort to develop early literacy skills, adults who engage in a lot of talking is extremely important for infants as it actually speeds up the process of learning new words and helps babies connect objects with words (Shore, 1997). Early literacy skills are essential to literacy development and should be the focus during the early years. "Recent research supports an interactive and experiential process of learning spoken and written language skills that begins in early literacy" (Zero to Three, 2014). When adults respond sensitively to a baby's attempts to communicate, the child feels empowered and will likely continue to make communication efforts.

If the learning environment does not reinforce early literacy skills, then the child can fall behind. Adults play a vital role in the language development of young children. Their ability to respond to the communication efforts of children can impact both the social-emotional and linguistic development (Garstein, Crawford and Robertson, 2008).

There is a relationship between the level of literacy and a supportive learning environment as found in studies done in the United States. A child from an unsupportive learning environment enters kindergarten with a listening (receptive) vocabulary of 3,000 words. Compare this to a child from a very supportive and interactive learning environment who has a listening (receptive) vocabulary of 20,000 words (Shillady, 2014). It is obvious here that what happens to a child during those early years, birth to age five, sets the tone for future success. Providing babies with engaging environments (including language environments) is important for their overall development (Honig, 2003). Art experiences can serve as a launch pad for early language acquisition.

AN ART GALLERY FOR BABIES - FACILITATING EARLY ART EXPERIENCES

The previously discussed research served as a foundation for creating a gallery for babies where they can look at art and also create it. If we know the kind of art that babies prefer, we can use it to facilitate early receptive language development. Sensory stimulation along with exposure to art experiences can support and even accelerate development (DeSantis & Housen, 2000).

Illustration 3: Explorations in Color by Karen Danko

At First Encounters, we work in partnership with local artists. Based on aesthetic preference research, works that are attractive to babies are selected and displayed in the gallery. For example, babies really enjoyed looking at this painting (below) in our gallery. It is a good example of the kind of art babies prefer – abstracted, highly textured and very colorful.

What would an art encounter that facilitates language development look like for a baby? When parents and their babies visit the gallery, we start out by looking at the art works on display. Parents are encouraged to follow the lead of their child. If s/he gets fixated on a piece, points, or crawls toward it, then that is a sign that the child is interested. Paying attention to body cues is important and we try to foster that during our time together. Parents play a key part in facilitating this experience. It is important that the parent validates this response by being supportive and interacting with the child during these times. Dissanyake (2001) notes that these early interactions are vital to the emotional, cognitive and psychosocial functions of the child in the future. As indicated earlier, adult interaction with young children is a vital part of their aesthetic and overall growth process. Developmentally appropriate and supportive interaction provided by an adult is critical to a child's learning in a museum or gallery environment (Haas, 1997). Therefore, it is important for the adult to explore along with the child and to point out visual characteristics while using descriptive language to better support the learning process. Adults are often amazed at the art works that their children prefer or even that they are able to choose one.

Since parents often don't feel comfortable with talking about an artwork with their child, we offer assistance. What do you say about a painting to a 6-month old baby? We talk about colors, shapes and lines as we point to them and describe them. For example, squiggly lines, a color that is turquoise, all are pointed out and described to the child. Often, if a baby is wearing a color found in the painting, parents are encouraged to point that out to their child. For example, a parent might say, "Look at the orange circle here (parents points to circle in painting). It is the same color as the orange socks you are wearing (parent points to socks)". We try to discourage dumbed-down baby talk and encourage parents to use more complex sentences with sophisticated vocabulary.

Illustration 4: Mother and baby talking about a painting.

When the child loses interest, as they do with their limited attention spans, then parents move to another work to explore, all the while following the lead of their baby. "In this reciprocal relationship, the infant's enhanced sense of self stimulates efforts to communicate; and the success of early communicative efforts (embodied in caregiver responsiveness) further enhances the infant's sense of self efficacy" (Johnson, 2007, p.315). The links between early affect and communication are supported in the research of Robinson and Aceedo (2001) and Meins (1998). Their findings indicate that infants who rely on their parents for emotional support during early learning experiences have more highly advanced cognitive and language skills at two years. Therefore, facilitating this receptive language acquisition process is very important at First Encounters.

The entire 'looking' and communication process takes about 15 minutes. Then we move on to a related studio experience.

For example, in conjunction with our exhibition on colorful paintings, babies are given an opportunity to become painters themselves. They are provided with a home-made paint that has a variety of fruity fragrances - red paint smells like cherries; yellow paint smells like lemons. The paint is thick and creamy, very alluring for little fingers to explore. Large sheets of strong and heavy paper are placed on the floor and each baby is given three colors with which to paint – red, yellow and blue. Younger children explore the paint by mushing it together in their fingers and tasting it, like 7 month-old Charlie below.

Illustration 5: Seven month old exploring paint for the first time

Older children just explore the paint with their fingers, captivated by the marks they can make on the painting surface.

Illustration 6: Thirteen month old painting with her mother

The gallery is a safe place for this type of exploration. Babies are free to explore art materials in any way that they wish. There are no concerns about the mess. Parents are encouraged to paint with their baby and to talk about the properties of paint, while including some of the vocabulary they used when looking at the paintings, or introducing new words. For example, one parent was describing the squishiness of the paint. "It's cold and creamy, isn't it?" she said to her baby. The child responded with great delight as she grabbed for more paint that was in a little mound on her painting surface. With both hands, she scooped up the paint and squeezed it together, a smile on her face as she giggled.

During the painting process, parents are informed about the merits of engaging a child in this type of activity. Painting can stimulate the visual processing system, but it has links to the development of gross motor skills as well (Early Arts, 2014). There are additional skills that are being developed, such as hand-eye coordination; fine motor; pincer grip; and crossing the midline. In addition to language, which has already been discussed, these skills have an indirect impact on early literacy development as well. Hand-eye coordination develops as the baby places paint onto the painting surface. This skill becomes more refined with practice, especially when the baby is ready to use a brush and then much later, a pencil for writing. Fine motor skills are employed when the baby uses her fingers to spread the paint. As the baby squishes paint between her fingers, she is using the pincer grip. Parents are informed that these are important skills for later on, when the child is ready to use a tool for writing text.

Crossing the midline is when the baby reaches from left to right or right to left as they spread the paint onto the surface. "When a baby begins to reach with one hand across to the other side of the body, it is the beginning of being able to use both sides of the body together" (Integrated Therapy Service, 2012). This action is important, as it helps the child to track a moving object from one side to another. In addition, it will also help the child to eventually read a sentence across the page.

Since each side of the brain is responsible for the opposite side of our body (i.e., right side of the brain affects the left side of the body), it is important for both sides to work together. Crossing the midline helps to develop bilateral coordination (Integrated Therapy Service, 2012).

As parents learn in our gallery, painting is an important activity for their baby and this experience should be provided at an early age.

This is an example of only one of the many studio experiences that babies have at First Encounters. Each art making experience is different, depending upon the works that are on exhibition. We endeavor to always link the 'looking' and 'creating' for a seamless educational experience.

CONCLUSION

Affording babies with an opportunity to look at art and to create it is important for their overall development. First Encounters – An Art Gallery for Babies, endeavors to provide a safe environment for sensory and aesthetic explorations. Visual and tactile stimulation have an impact on cognitive processes during the first years of life and are critical with regard to learning. Providing a stimulating environment that includes art works that infants prefer, along with a related studio experience, can contribute to their overall growth and development of early literacy.

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