

**Arts in Cognitive Development:
Effects on Education**

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Abstract:

In this paper, you will begin to understand how the arts have an impact on young children and their cognitive development. We will examine the relationship between the human mind and how the arts can change our way of thinking. Piaget is a world-known research psychologist that theorized the growth development of children. His theory on child development is one of the key points in this article. Understanding how children think, move, and learn will guide you through the effects of arts education on their development. This paper highlights the effects of arts education on students with special needs, students in low-income areas, and students who have a lower IQ than others. The goal is to get schools to change how they teach their students. The education system nowadays is only focused on reputation and getting the children to excel in grades. But they are less focused on how the children are learning and if they are retaining the material. If these schools incorporate the arts in their everyday teaching, the children will not only enjoy what they are learning but will also retain the material for the future. Remembering the past and learning how to improve the future will help these students to change the world in a better way. By the end of this paper, you will agree that the arts can improve their development and help them retain the material they learn in school.

Introduction:

Take a second and think about when you were a kid, what did you want to be when you got older? Was it a princess or maybe a superhero? Our imaginations ran very high at that time, we could dress up in dresses and rule a castle with a pet sidekick, or we could fly through the sky and shoot lasers with our hands because nothing was stopping us. You must look back on those years and think to yourself “wow those were simpler times” or “I wish I could be a kid again”. It may be hard but see if you can pinpoint what you were doing at specific ages, how your mind may function. For example, can you remember age six? That’s usually around the time we were thinking about princesses and superheroes, or jumping from couch to couch playing “the Floor is Lava”. See if you can think back to when you were two or three, you probably don’t remember much, just small glimpses of your childhood. For example, you may remember running through the house in your diaper or learning to potty train on the toilet. Around this time we were focusing more on ourselves rather than the environment around us, which may be why you don’t remember too much of it. It is important to look back to these times when reading this paper because when you think like a kid, you can help make decisions that will benefit them effectively.

In this day in age, education isn't about learning anymore, it's about passing tests and achieving a high grade. This is causing children to be less engaged and more stressed on the aspect of passing a test. They aren't absorbing the material, they are just retaining it enough to complete the grade and then all that material they just learned disappears. This can be an issue for the future of humankind. If the children are not retaining the material they can not make decisions for our country in the future. Think about history, the entire reason for teaching history to the students is so they don't repeat the past and learn from the mistakes made. We want these

students to retain this material so they may make smart decisions for our future. If schools change their programs to implement the arts in their studies, they may find that students are learning faster and are more engaged with the material. The arts can help a child's development in many ways, for children with disabilities it helps with communication, for children in poor communities it brings joy and excitement to learning, and for children who find it difficult to retain material in school they will take in more.

Cognitive Development

What is Cognitive Development?- Ages 0-7 Growth Development

“Cognitive development aims to explain mechanisms of change, thus development, rather than to merely describe the capabilities of children across ages or between children, adults, and aging populations,” (Miller, 2016, p.# 1). Much of our development comes from the early stages of life. From learning how to crawl to figuring out mathematical equations, our entire mind, body, and soul focus all of its attention on developing who we are and who we will become in these early stages of life. Ages 1 to 6 we show the most improvement and the most development in our childhood. One psychologist that broke down these stages of development is Jean Piaget. His theory was that intelligence changes as we grow and that it's not just about acquiring knowledge but that the child must develop a mental understanding of this world. Up until this theory children were just known as mini-adults. Then Piaget- a swiss psychologist and genetic epistemologist- changed the way we view child development. “Piaget suggested that all children journey through the sensorimotor, preoperational, concrete operations, and formal operations stages of development,” (Babakr, 2010, p.# 518). Piaget also theorized that we as humans construct the world and how we view it based upon our interactions and experiences. In these

theories, Piaget examined and studied the intellectual development of his children. He came up with stages in which children pass through in development to find intelligence and their full thought process. Cognitive development isn't just about education but also about interacting and learning from the environment around us. These stages are broken down into children's sensorimotor stage, the preoperational stage, the concrete operational stage, and the formal operational stage.

The stages to which he is referring are separated into four stages of development. The first being the Sensorimotor stage, beginning at birth and ending around two years old. During this time infants are focusing on self-development, they are learning what the world is through their sensory experiences such as seeing and hearing, or reaching and touching. Piaget calls this the 'sensorimotor' stage because it focuses solely on our senses and motor abilities to get a basic understanding of the world around us. Reflexes will start from birth to one month, during this time a newborn will only focus on sucking and looking. Then from about one month to four months, the child will focus on primary circular reactions. Learning the meaning behind his or her actions, for example, the child may suck its thumb then realize they are sucking it and will repeat the action. Secondary circular reactions begin at four months and will end around eight months, in this stage, they will interact more with the world because they will want to trigger a response in the environment around them. After this stage comes coordination of reactions from eight to twelve months of age. At this stage, children start to become more aware of the environment around them. "Children begin exploring the environment around them and will often imitate the observed behavior of others, for example, a child might realize that a rattle will make a sound when shaken." After this stage, a child's cognitive development starts to increase. Twelve to eighteen months a child will try to create different sounds or actions to get attention,

this being the 'Tertiary Circular Reaction' phase. Eighteen to twenty-four months they will learn symbols and objects, straying away from physical actions to mental operations.

The big understanding of this stage is 'object permanence, the idea that objects exist and events occur in the world independently of one's actions. "In Piaget's theory, infants in the first 8 months have a lack of object permanence; which means that they cannot understand hidden objects," (Babakr & et al., 2011, p.# 518). For example, if you were to place the child's toy under a blanket, a child who has not yet developed this object permanence will think the toy has disappeared. Once developed, that child will know that just because you put the blanket above the toy, does not mean that the toy is gone forever. Some people call this the 'Peek a boo' factor, one of the main things we do as humans when coming in contact with a baby is to play peek a boo. Not knowing why it makes the child laugh or make faces, we do it instinctively out of pure joy. Well, to the baby you are disappearing and coming back when you move your hands back and forth. This is an important stage in our development and the most impactful if not achieved correctly.

Going further into this stage I like to refer to it as when we learn the 'what' and the 'who' of our development. At birth, we learn the sound of our mother's voice or the noises our father makes. We start to profile and figure out the 'who' factor. Children can distinguish who is a familiar face and who is a stranger, and this will give them the thoughts "I feel safe with this person, I don't feel safe with this person", but they don't understand why they make that distinction. Think about who you feel safe naturally with, it could be your parents, people who raised you. You may feel more comfortable sleeping in the same room as them than you would say your co-worker or your classmate. Can you distinguish why? Your co-worker or classmate could be a great individual, no track record or nothing saying they are dangerous, but you

wouldn't want them in the same room as you watching you sleep. Why? Is it because they are unfamiliar? This is a natural thought we have in our early stages of development, a sense of trust, and an understanding of profiling. We also learn the "what" aspect of this development. Like Piaget mentioned this is when we learn feet, hands, eyes, and ears. Children learn how to walk at this stage, not knowing how they did it or why. But they learn what their legs are and how to use them, the same goes for their hands when reaching and grabbing things. They may not understand why they are doing it or even how they are doing it, but they are figuring out what things are. During this stage the "who" and the "what" become distinctively clear and it is crucial to moving onto the next stage of our development.

The next stage is called the Preoperational Stage and is the biggest stage of our childhood development. According to Piaget, this stage begins at age two and ends around seven years old. It seems like a big age range compared to the first stage right? Correct, this stage shows a big developmental growth. During this stage, children are thinking at a symbolic level but have not fully achieved cognitive operations yet. The reason it is called the preoperational stage is that Piaget believes that the child can not yet use logic or transform, combine, or separate ideas. He believes that a child's development is composed of building experiences with the world through adaptation and working towards that logical thought. "According to Piaget, the first limitation of the preoperational stage is *animism*. Animism is the ability to distinguish between animate and inanimate objects. Children in this stage believe that everything around them is alive," (Babakr et al., 2008, p.# 519). At the end of this stage, children will be able to mentally represent events and objects and engage in what's called symbolic play. This can be referred to as 'the semiotic function', based on the use of signs and symbols. For example, a stick becomes a sword, and the

couch is a floatation device. Looking further at this theory, children learn the 'why', the 'how', the 'when', and the 'where' functions of their development.

Breaking it down I'd like to think ages two to four we focus more on the 'why' and 'how' of our development. At this age we are learning why we do specific things, for example why we go to the bathroom on the toilet, we may not fully understand it but we start to learn that we have to do that. Do you ever ask a child to do something and their automatic answer is 'why? It's because they are learning the reason as to why we do certain things. For example, they know the aspect of 'toy' and that they can play with the toy, but they don't understand why they have to necessarily put the toy away. Children hate to clean because they learn that when the toy goes away they can't play with it anymore. Their mindset is "I can play with this thing, and I am going to play with it later, why do I have to put it away if I am just going to take it back out". They don't understand the aspect of keeping something neat and put away to save it for later. This is a skill they will develop by the end of this stage but at this specific age, they are just starting to figure it out. They also focus on the 'how' factor in this age group. Now the 'how' in their day-to-day lives is a little easier than the 'why', I believe it is because with the 'how' they are completing an action, with the 'why' it's more of an intellectual understanding. In the 'how' kids will understand physical and emotional aspects, such as "I love mommy, how can I show I love mommy? Let me bring her my favorite toy or give her a kiss to tell her how I love her". A more complex action would be, "I have to clean my toys, even though I don't fully understand why I have to clean my toys I can do it by putting them in this box" or with potty training, "I have to use the bathroom, I am learning to understand why I have to go in the bathroom, but now I need to understand how to go to the bathroom at the right time to use the bathroom". This is understanding the physical in the everyday lives. We learned the 'what' and the 'who' but now

we need to understand the 'how' behind both. This can be pretty simple to understand though through watching our parents. For example, "they go to the bathroom on the toilet in the bathroom, so I have to go to the bathroom on the toilet in the bathroom" or something a little more complex, "when they are hungry they go in the kitchen and get food, so when I am hungry I go into the kitchen and get food".

Ages five to seven we focus more on the "when" and "where" factors of our development. This is mainly when the semiotic function takes place. This stage is really where our social development starts to skyrocket. At these ages, you will notice kids will start to take mini-adventures, whether it's exploring the aisle in a store, or noticing different outdoor things while in the car. Kids start to separate imagination from the real world, sure there's still a sense of imagination and creativity but they ask more questions about the real world and have a better understanding of what things are. For example, a child might say in the car, "look mom that woman is walking with her baby" or "mommy that man is running across the street."

This sense of awareness is leaving their safe environment which they consider home and is now going to the exterior environment they are unaware of. This is learning the "where" in their development. You might also notice at earlier ages they will associate places with pictures. They are developing that sense of awareness, but to take that picture and associate it with a real place is the part in the "where" development in which they start learning their environment. The sense of 'when' also comes around this age as well. They learn times of the day and weeks, months, years. It's hard to tell with this when they start learning this, it is believed at around three months of age they start to understand day vs night, and as time goes on they understand words like 'later' or 'soon' but they might not understand specific dates or specific time frames until around this age. For example, you might hear your child say something like, "mommy I get

cookies after dinner” or “tomorrow night the tooth fairy will come”. They also might understand if you tell them, “Halloween is in October” or “Christmas is two months away”. They can also start to have an understanding of weather, like “Easter is in spring” and “Thanksgiving is in Fall”.

It's a very interesting age group to interact with because this sense of independence comes out of nowhere and you aren't too sure where it comes from exactly. It's like something in their brains clicks and all of a sudden they can figure out a wide range of their environment around them. Going from ‘what’ and ‘who’ to ‘where’ and ‘when’ is a really interesting switch between birth and age seven. You watch the child learn the basics of living in this environment and it is quite satisfying to see this development occur. Their cognitive development is sparking so many aspects of their brains from physical development to social development. Now think about how the arts may affect this development. Could it increase development, make it faster? Is it too distracting at this age? Well if you think about it we are already introducing the arts at a very young age. Many people believe playing Mozart or Beethoven will make a child smarter, or showing colors and famous paintings to a child will increase their visual stimulation.

Pretend Play on Child Development

What is pretend play? Pretend play is a state in which the child uses their imagination and creativity to complete a task in their mind. “Beyond being simply nonliteral, in pretend to play a ‘pretense’ is layered over reality; specifically, a pretender knowingly and intentionally projects some mentally represented alternative onto the present situation in the spirit of play,” (Lillard, et al., 2012, p.# 2). Even at a young age, you want to encourage pretend play, using that creativity and imagination to access the part of the child’s brain that makes them think on their feet.

Pretend play will help children make future references to everyday objects, it will help them figure out the environment around them and learn how to manipulate it to their advantage. “In the play, children first understand that actions (and objects on which one might act) can be separated from reality and can be based on the meaning of a given situation rather than on the physical properties of objects,” (Lillard, et al., 2012, p.# 3). For example, a shoe may turn into a phone, or a stick becomes a sword. Pretend play is the first step when it comes to imagination and creativity, without pretend play we don’t access the part of the brain that gets us thinking outside the box. As mentioned above, when we get older we lose that ‘child-like behavior, the sense of imagination and creativity. With pretend to play we tend to change that behavior into adult aspects of life, like creating a new spreadsheet for a job or developing new software for a computer. We are ‘playing’ in our everyday lives, we just aren’t fully aware of it. “Several studies have addressed the claim that pretending makes children more creative by looking for correlations between naturalistic play and creativity since they should exist if more frequent pretenders have become more creative via their pretend activity,” (Lillard, et al., 2012, p.# 5).

Engaging in creativity and imagination improves the child’s development, encourages social interactions with not only the environment but with other children, and increases their curiosity so that they will want to retain information in the future.

Elementary School Development

At this point in our development, we are deep into understanding our environment and learning to interact socially. This stage is called the concrete operational stage in our development. This occurs between ages seven and twelve years old, usually right before we hit puberty. The concrete operational stage is the third stage in Piaget’s theory and is described by

organized and rational thinking. Piaget believes this is where logical or operational thought comes into play. “Piaget suggested that children during this period are less egocentric; they display the ability to understand concert things; and they can solve complex problems,” (Babakr, 2012, p.# 519). For example where rules can come into play, but can only apply to logic and physical objects. During this time we focus fully on our environment, school becomes a huge influence and we start to form our own opinions on things. Since school becomes a huge influence at this age, this is the time where Arts Education would have the biggest effect on students. At this time these children are beginning to figure out who they are, what they want in life, and who they can trust or rely on.

You will have more memories in this age group than you would in the ages before because you have fully developed your sense of self-awareness. Now it is all about learning the environment and what it has to give. We learn about the history and what the world has to offer. With this information, we form our own opinions and will most likely question a lot of things. This age group has the biggest question phase, kids will ask questions they can't fully comprehend, and they will make statements that are in a sense unfiltered. “Based on Piaget's notion, children in the concrete operational stage also can understand the relationship between sets and subsets,” (Babakr, 2011, p.# 520). For example, a lot of children around this age will ask about sex and the development of babies. They may even bring up things that they shouldn't necessarily say in public or to certain people. Have you ever spoken about someone behind their back near a child and they said it out loud to the adult? They aren't trying to betray you or hurt the other person's feelings, they are simply repeating information they heard. This age group doesn't have a filter, they take in information and they use that information, they haven't developed that sense of “I shouldn't say this because it will hurt the other person's feelings”.

This is a very important age group because they are learning those rules, they are interacting with their environment, and they are advancing in early education.

In this age group, children are more likely to develop more knowledge. They will focus on the environment around them so they will most likely interpret and produce their thoughts and ideas towards something. This is also the age group that is most susceptible to opportunities. At this age, children are picturing a world filled with opportunities and are trying to figure out what they want to follow. If introduced to the arts they may learn more and observe the world from a different perspective. Most children this age are begging for an outlet, or just something to inspire them. If teachers, parents, or educators give them this outlet they may want to learn more and they may open our eyes to something new that we never thought of before. According to David Sussa- a neuroscientist- art opens a different part of our brain. Only art can access this side of the brain.

Middle School Development

The next stage in our development is the last in Piaget's theory, being the beginning of the final step in our lives. This stage occurs between age twelve and when we grow old and die. It is called the formal operational stage, and this is where we distinguish our concrete and formal operational skills. We are well into education at this point and only focusing on our school work. As we get older we develop more opinions and learn to take control over our actions. We can do mathematical equations and understand deep into science. But during the beginning of this stage children may rebel, they are figuring out the ins and outs of the world and they may be "unhappy" or want to fight against it. This is also when we hit puberty, forcing us to go back to

that self-awareness. Our emotions are all over the place, our minds are filled with information we may not fully understand, and everything makes us angry.

From ages twelve to eighteen may be the toughest ages for a parent, they have to answer tough questions while still keeping their child at ease. For example, a child might go up to his/her parents and try to talk about love or a relationship. Most likely the child either has an interest in someone or is going through a breakup. For a parent, this can be a difficult conversation because that child doesn't truly understand what love means or what a relationship consists of. "They think they know everything" a common statement a parent might have for their child because this "rebellious stage" is just because the child still has so much to learn. In this stage we learn what it means to live in this world, we stray away from the childhood imagination and we focus on learning to function in society. But it is mentioned that not many children reach the formal operational stage, due to the education systems being corrupt, not many children get that education they need to continue through this stage, "Since in some societies, the educational process does not focus on critical thinking, which is very essential to reach a formal operational stage. Studies showed that only half of the individuals in some societies reach the formal operational stage due to the lack of educational background," (Babakr et al., 2008, p.# 520).

Education and Development

Study #1:

Before we mention arts and our development you must understand how education has a role to play in our development. Education itself has a huge role to play in our development. It

gives us the capability to open our minds and absorb material so that we as human beings can make our own decisions and later on pass our knowledge to our offspring.

Twenty children were picked for this experiment, six female and four male all around the age of six. These children were picked from two different class sections, middle and lower-middle class. Children were tested by themselves for memory first then put together for the experiment. “Testing was conducted on three occasions separated by exactly 1 year, at the beginning of grade one or kindergarten for both groups (Pretest); at the beginning of Grade 2 or Grade 1 for the two groups, respectively (Posttest 1); and at the beginning of Grade 3 or Grade 2 for the two, groups respectively (Posttest 2). These three tests allowed examination of the effects of schooling on memory and language development (Posttest 1) as well as any potential Age X Experience interactions (Posttest 1 and Posttest 2),” (Morrison et al., 2008, p.# 520).

They found when parents engaged in teaching their children aside from school, the students retained more material and were more engaged. That being said, children who learned in school and engaged in successful learning retained the material taught to them. This study finished by mentioning how we are teaching the children and what we can do to make their education more entertaining. “Although revealing the power of early schooling to shape the growth of cognitive skills, the present experiments leave open the question of what aspects of schooling and related experiences are responsible for cognitive growth and exactly how environmental influences produce change,” (Morrison et al., 2008, p.# 520).

Art Influence on Cognitive Development

How the Arts influences our Growth

Learning what it means to live and function in society we also start to develop a love for a specific route we would like to take. For example, at a young age, we want to be a princess or a superhero, as we get older we start to form real careers that we want such as fireman, doctor, or actor(es). But what influences us to make these decisions? As we get older we are drawn to certain things, we don't necessarily know why, just that we want one thing over another. We know that our parents influence us to make most decisions, as well as our educators. Most parents will have a certain expectation for their child, persuading them to do sports or push them to be a doctor. In the first few stages of our life, we follow these expectations, the idea that "my parents say I do this, so I do it", but as we get older most kids seem to stray away from that mindset because they hit that rebellious phase. Some kids will still engage in the activities they started as children but most choose to go a different route. For example, one child being persuaded to go into sports may change their mind and go into the arts. Knowing what influences children and how they choose that route could help us persuade them to specific places in their childhood.

The arts are a huge influencer when it comes to a child's growth. Picture yourself as a child again, remember how you used to climb on the furniture like a monkey or play with your dolls and dream of a fairytale land. This is called "child play" the imagination stage in our development. From birth to two years old it is recommended that you take certain aspects of your everyday life and implement them in the art form so the child can retain them and learn. "Reflect a child's environment and everyday life and develop these experiences into different art forms. Provide a balance of sensory stimulation (using sounds, movement, etc.) that is sensitive to cues

and signals of the child,” (Grafwallner, et al., 2013, p.# 4). From three through five years of age they recommend you not only engage the child in the activity but try to teach them through the activity. “Emphasize the experience and engagement with the arts and learning through the arts rather than finished products or performance,” (Grafwallner, et al., 2013, p.# 5). Finally, they suggest at ages kindergarten through third grade, to try to get the students to create their art and learn to think outside the box, “Engage children in creating, reflecting, and presenting their art in child-friendly environments and settings,” (Grafwallner, et al., 2013, p.# 5).

As we get older we lose touch with that childlike play and focus more on the real world. One thing that seems to bring us back to that childhood imagination is the art world. In the arts we are forced to “think like a child”, finding this childlike play so we can go back to that imaginative state. As performers tapping into this childlike play is very important. As you get older you are told to have specific energy around people, be polite, don’t curse in public, do not fart or burp, all things that we may naturally do in our rooms. As a performer, you must forget about all of that to “play a part”. So most directors will tell their performers, go back to when they were a child, when there were no “rules” and tap into that energy. Once you do this you can then go into that imaginative state, picturing yourself as a princess again or as a superhero soaring through the sky, because realistically if you believe you are a princess or superhero on stage you can make anyone believe you are one as well. That is why the arts are the best place to find that imaginative play.

Many people who go into the arts or have enjoyed the arts at some point in their life, seem to always hold on to that childlike mindset. They may grow up and go to work or school and go about their lives, but they can still touch into that side a lot faster than other people. Many people who pursue the arts also seem to have a closer connection to children, whether children

are drawn to them or they enjoy the presents of a child we don't they were known. But it would naturally make sense that kids are drawn to people who are in the art field because they can imagine together, and they can share that childlike play.

The arts have a huge influence on our growth because it helps us to keep that sense of imagination, it helps us focus on the "play" instead of the "work" aspect of things. As we get older the world becomes duller, you go through your life because you have to, you have to work to make money, you have to eat to live, and you have forgotten about the play side of your childhood. The arts help us hold onto it just a little bit and enjoy it. It gives color to our lives and makes our environment a little more interesting. It helps us to inspire future generations and keep the imaginations high.

Arts Influence in Infants

From the day you find out you are pregnant to the day you give birth you are told to introduce the arts to your baby. Even though the child has not made it into the world studies are explaining the importance of art and how they can learn from even the womb. An infant understands only a few things in this world when they are born, a sense of smell of the mother, taste of the milk or formula, the sound of music, and what their parents look like. Before they are born they understand music and most say that music can affect the child's creative mind. For example, some say listening to Mozart or Beethoven will make them smart.

Study #2:

In one study they found that infants can differentiate between painting when they are born. In this study, they gathered 24 infants to test this theory, 14 female and 10 male. They tested them by putting the infant in front of a computer screen in their caregiver's arms and

showed them a set of photos. They set up a camera on top of the screen to record what they were seeing and their reactions to the images. The experimenter put two photos up, one a painting by Monet and a painting from Picasso. “They remained on the screen until the infant looked away for 2 consecutive seconds or until 60 s had elapsed. Habituation trials continued until the mean look duration during three consecutive trials for each infant was less than or equal to half of the mean look duration during the first three trials for the same infant or until the infant had gone through a maximum of 15 habituation trials,” (Cacchione, et al., 2011, p.# 372). They found that the infants were attracted to the similar type of painting, they gravitated to a similar painting that both Monet and Picasso created. “Thus, infants of both conditions (i.e., regardless of the type of habituation stimuli) preferred to look at the new Picasso painting. A nonparametric binomial test showed that 100% of the infants in both conditions looked longer at the Picasso ($p \leq .01$, in both cases),” (Cacchione, et al., 2011, p.# 376).

It’s crazy to think that these infants can not only see the paintings and the art portrayed but you can tell they are thinking about it and using their brain to connect to the paintings. This study may not have to do with their development but it certainly proves that certain visual stimulation can get an infant to use their brain and attempt to learn from it.

School and The Arts

Picture yourself sitting in a classroom, listening to the teacher ramble on about a subject whether it be math or science, or history. Do you remember a time in your childhood when you sat in a class and truly never learned anything? You just went through the class, after each exam for getting the material you learned or why you learned it. Schools nowadays are less about learning and more about passing. The education system focuses on numbers and the students

passing a specific range. They don't focus on the kids learning anything anymore, as long as they pass the test that's all that matters. But what if we can get them to pass the tests and still keep them engaged, keep them involved with the material. This way we enforce teaching and learning so they can improve but also love what they are learning in the process.

Study #3:

In the article, *Art Integration and Cognitive Development*, Unsworth states, "Art is not demeaned by connecting it with math, science, social studies but that the connection gives substance to the artwork and shape to the subject content" (Dawn, 2013, p.# 1). He's suggesting that it's not just about adding art to the subjects to get them to learn, it's about adding character to the subjects to get them to learn. For example, a child must memorize the form of a bacteria for science class to pass the test, if you introduce art to the teaching the child may memorize it faster. Having them color the bacteria or physically creating it out of art supplies. It's getting them to engage with the material while also having fun. They will pass the test and will most likely remember it in the future because they got to create it. The article then goes on to mention that the more art added to the education system, the higher they will score on tests. "Students who took more art classes performed higher on math, verbal, and composite SAT scores than students who did not take art classes," (Dawn, 2013, p.# 2).

"Instructional strategies included increasing and integrating the arts into the curriculum, providing students with more hands-on learning projects that allow for multiple learning opportunities, and presenting curriculum and instruction through thematic units," (Dawn, 2013, p.# 3). A study was taken in North Carolina at the Kenan Institute for the Arts. This study included 25 schools in North Carolina's A+ School Program and was a four-year study from 1995 to 1999. In this study, they tested to see if adding more arts programs would increase the

grades in the student program. They incorporated the arts in their educational classes. Adding arts teachers, arts specialists, and integrating art instruction into a classroom. This project included surveys, interviews, and fieldwork. After a close examination of the students' accomplishments, they found that after the four years the students have achieved more growth in their test-taking skills than those in other schools statewide.

Now there's some argument in this study due to a lack of information. For example, how big was this group compared to the group they tested against? How old were the students, and what was the age range in which they performed this study? Did the students have access to the same arts programs, for example, did one school focus more on dance than visual arts and another focus on theatre than say music? Although these don't seem like drastic changes, they will have a huge impact on the study because depending on their growth development they could be at different stages of learning. The age group especially has a huge impact because depending on how big the age group is, it could affect the way the children are tested. If they are say 6 years old versus 13, they may be influenced differently. A 6-year-old has a shorter attention span and may need more persuasion in the arts than a 13-year-old. Also how the arts are being portrayed to the students has a huge impact in itself. Are they all studying with the influence of music or are they being influenced through different forms? This can change their performance on their test-taking skills because they used different techniques for the test-taking.

Even though this study isn't fully conclusive, they did still find that the students who were involved in the arts did better in school, proving my point that when the arts are introduced to education, the students seem to engage more and take in more material. Another study was conducted in 1990 from the Cultural Action Plan to infuse the arts with education to focus on improving self-esteem, creative and critical thinking, and academic advancement. This study is

similar to the last in that its goal was to see the advancement the students made after the arts were introduced to academic teachings. This study consisted of 600 students from four schools in two districts. They were divided into three groups: Art Infusion, Modified Control, and Full Control. This study lasted one year and held two tests one before the experiment and one after the experiment. Right away looking at this study compared to the last, it seems they have more data to go off of and they organized the study so they could get the best results. Some results found that boys scored higher than girls in math in the SPECTRA+ group. But in one school the SPECTRA+ students accomplished higher scores in reading than the control group. In another school, the overall SPECTRA+ students increased advancement in reading comprehension and reading vocabulary. This proves that students who engage in the arts increase their learning capability and initially do better in school than those who don't engage in the arts, thus proving my point further.

The arts have a significant role in a child and how they do in school, which is why most schools should consider changing the way they educate their students and focus more on the students engaging with the material. I believe that when we change this system and change our focus back to having them learn the material, we will educate kids more. The children taking in more material will advance them for the future and will help them grow faster intellectually. It isn't just improving their test scores, it's creating better generations and will eventually make a positive impact on the world.

Study #4:

A study was performed in the United Kingdom to test the effect of dance on thinking and creativity. "Our focus on divergent thinking arises because evidence indicates that divergent thinking is a key component of the creative thinking process that predicts creative achievement,"

(Sowden, et al., 2015, p.# 129). Since dance is a part of the physical education programs in the UK, they thought it would be a good idea to test this theory in primary schools where children are already exposed to dance. They looked at the children's grades and compared them to those who didn't take the dance option for physical education. They found that girls in the dance classes showed more improvement in their test scores than those who were not in dance.

Twenty-seven children took part in this experiment, 17 male and 10 female all aged between 8 and 10 years old. Three assessments were performed, the first being the Intelligence assessment, this was to see how much higher they scored in their other classes while taking dance. Next was the Mood assessment, this was to test if they were less stressed or were happier while in dance. Finally, the third test was a measurement of divergent thinking and creativity. This tested if they were able to think outside the box and have a creative outlook on the world after taking dance.

“Our findings suggest that a short improvisation intervention is sufficient to enhance performance on subsequent divergent thinking and creativity tasks in children, even when those tasks tap a different cognitive domain. This supports a domain-general aspect of creative cognition with respect to children's' divergent thinking ability and creativity,” (Sowden, et al., 2015, p.# 136).

Study #5:

This study was designed for children in fourth grade to test their intelligence based on several tests given in different classes. “We examined whether applying the theory of successful intelligence to instruction and assessment in Grade 4 language arts, mathematics, and science would result in superior learning outcomes relative to alternative instructional methods, in particular, memory-based instruction and critical-thinking based instruction and teaching as usual,” (Sternberg, et al., 2014, p.# 882). They examined 7,702 children across the United States

in 14 different school districts. The states included Alabama, California, Connecticut, Massachusetts, Minnesota, Kansas, North Carolina, South Carolina, and West Virginia. The examiners mention that when introduced to stimulating factors, the students learn more effectively than when not introduced to these techniques. Sternberg mentions that it's all about the person's intelligence and their ability to harness that knowledge whether it be using outside techniques such as art or studying from a textbook.

The goal was to get children from all different backgrounds to take part in this study to test from every background. Children in lower-income areas could have different test scores from those in a higher income, or children from a southern state may have a different score than those in a northern state. They introduced a language arts curriculum, a mathematics curriculum, and a science curriculum. In these experiments, the students took several tests on material taught over time in different ways. For example, one way would be introducing the arts to a math equation in hopes the students will associate the math equation with the creativity of the arts behind it. Another would be to teach the math equation using only slide presentations and limited visual stimulus. This test is to see if the students retained the equation taught using art over the equation taught using little visual stimulus. The same went for the language arts and science sections. "In sum, the results of this large-scale, multistate study suggest that there are difficulties associated with scaling up educational interventions that have been demonstrated to be effective in smaller contexts. Implementation of the curricular materials was designed and implemented with a minimal level of support from the research team, and the student achievement results revealed that the impact of the curriculum on student performance when compared with strong pedagogical approaches involving teaching for memory and/or critical thinking, as well as with 'teaching as usual' approaches, was heterogeneous," (Sternberg, et al., 2014, p.# 896). They did

suggest however that a study this size is inconclusive, too many outside factors have a part to play when conducting this experiment.

Study #6:

Have you ever heard of the saying “let your child listen to Mozart or Beethoven so they can become smarter”? In this study, they are testing whether that theory is true or not. “A meta-analysis of experimental evidence in children similarly concluded that musical training does not reliably impact general cognitive ability, but benefits on individual abilities were supported. The strongest effect sizes were for measures of memory and intelligence, with a small effect size on a few other cognitive measures (mathematics, reading, and visuospatial ability),” (D’Souza, et al., 2018, p.# 180).

In this test, they separated children into two groups, one working on movement through music, and another learning the music itself. This got the students to think outside the box and focus on something other than schoolwork. The goal of this exercise was to see if learning these art forms would improve students’ academic achievement. “Positive findings on transfer from the arts to cognition offer promising applications and have been used to encourage evidence-based arguments in favor of arts education for children,” (D’Souza, et al., 2018, p.# 188).

Another theorist who chose a similar test, Glenn Schellenberg wanted to see how long music would take effect after being listened to, and if that had anything to do with the child’s test-taking skills. “The original report (Rauscher et al., 1993) indicated that spatial performance was enhanced for approximately 10 minutes after listening to music composed by Mozart. We now know that such enhancement is a consequence of the listener’s arousal level and mood,” (Schellenberg, 2006, p.#457). He gathered children ages 6 to 11 years old with varied musical

training. After a couple of weeks of teaching the students a set of songs, they pushed the students to listen or work with music before a test. After their tests, they checked to see which students scored higher. Was it the student that listened to music, the student that practiced music, or the student that had no exposure to music before taking the test?

They found that those who listened to music did significantly better than those who did not have any exposure to music at all. However, they did find that students who practice music before taking a test have a significantly higher IQ than all groups combined. “In other words, children who take music lessons may have experiences that differ qualitatively from those of other children. Music lessons involve focused attention for long periods; regular practice; learning to decode complex patterns of visual symbols; memorizing extended passages and entire pieces; learning about rules of pattern formation that define Western musical structures; incremental improvement of fine motor skills; and learning to express emotions through music, both obviously and subtly,” (Schellenberg, 2006, p.#466).

Study #7:

Mr. Lee Bartel decided to conduct a study on the response we give as human beings to the sound of music. How it affects our neurological behavior and how it makes us behave. They mentioned the effects of music to be separated into three categories, the emotional state, hearing, and the complex structure of music. They chose 10 songs from jazz, country, and classical selections. Then they chose 33 students in college, the goal was to have them listen to the music and see what they gravitate to, and how that affected them during an interview process. They wanted to see if the music stimulated their mind to access the part of the mind they use for their

knowledge. In the interview process, they recorded the student's behavior and how they answered questions. "A significant difference was found between response to classical music and jazz and country. The response to classical music was more cognitive than the response to the other two styles," (Bartel, 1992, p.#18).

After they listened to the music they answered another set of questions in an interview to see if they had changed how they responded, what their response was, and if it was more intellectual than the response prior. They found that the music was linked to their responses in the interview. This proves that when listening to music you access a particular part of your brain that gives you knowledge. "The dimensions identified within the response to music on the CART-M are related to the individual's cognitive and affective response to music. Differentiating between the formal-syntactic-intellectual (cognitive) dimension and the expressive-emotional (affective) dimension of response to music in the linguistic mode utilizing quantitative methods is possible," (Bartel, 1992, p.#25). It does make you think though, knowing how music can affect certain parts of our brain allows us to explore and teach our knowledge in different ways. These sets of studies prove that in some way the arts have this pull on our minds and can get us to do extraordinary things.

Arts on Special Needs Programs

How does art affect children with special needs?

That is why introducing the arts to special needs programs will help improve communication. "Providing the opportunity for creative expression; the practice of fine and gross motor skills; and the application of language concepts relating to form shape, color, texture, and spatial relationships," (Banks, et al., 1993, p.#235). This article is portraying that children with

disabilities learn more and communicate more efficiently when introduced to the arts. For example, if you give a child an apple and say apple, they may repeat and say apple. A child of low functioning might not understand how to say apple so the next time they want an apple they can't exactly ask for it. If you give them a picture with the apple or have them draw the apple, they can now show you what they want the next time they want it. They also seem to take in the word apple more when they draw it or match it to a picture/ object. "Due to the rapid pace of global change in all areas—social, economic, political, and technological—an individual who can perceive the elements of a problem or interpret the meanings of a situation, resolve difficulties, and discover new approaches is invaluable," (Katz, et al., 1983, p.#122). The way we look at the world versus the way someone with Autism might look at the world is completely different. Children with special needs can not process what we can process, unfortunately. So we must make it easier and accessible to them.

Generally, autism isn't detected until around 2 years of age. This is very important to understand that by the age of 2 we have already developed a small understanding of the world around us. There need to be more tests to cover what a child with autism is going through before 2 years of age. Is there any kind of indication that this child may develop autism? Is there any way to help a child before the age of 2 grow into the world even though they have autism?

I believe the arts have a huge impact on the special needs community, they suffer in silence, hoping someone will help them understand. But with the arts, they can learn to communicate faster and take in more learning material, making it easier for them to learn. The arts help them develop faster and grow with the material. "Art therapy developed from the idea that the process of image-making and creative expression heals and transforms unpleasant life experiences through symbolic communication," (Durrani, 2014, p.#102). Using a form of

therapy such as art will get the student engaged, get them to take in more knowledge, and will help them communicate successfully. It also brings a sense of comfort to these children. Think about how you would behave if you couldn't communicate efficiently. Using therapy such as art will help them with that communication barrier, but will also bring a sense of comfort to the child. "A core premise of using a dynamically informed art therapy with an autistic child is to recreate the nurturing space of early childhood that may have been missing from the early experience of the child with autism," (Durrani, 2014, p.#103).

Advancement and growth:

Over the years the rate of children with special needs has grown greatly, although there is speculation on what specifically caused this one thing for sure. We haven't found too many successful ways to communicate with these children, causing them to have behaviors and get upset easily. Many children with special needs often have speech delays or can't speak in general and need a vocational device, a device that has pictures and words so that they can point and show their educators what they need. With this speech delay or missing communication, these students find it harder to communicate what they want or need and they get frustrated. Picture yourself in a clear box, there is a key to open the box outside and it is soundproof. To get out of the box you need someone to unlock the door. But you can't speak to them because they can't hear you. So how do you get out of the box, you just hope someone comes along and sees the key and opens the box for you. That is how a child with communication delay feels. They can't communicate what they want out of the box so they are stuck waiting. Many educators don't know how to work with these children, they give up before finding different tactics. Not every child is the same when it comes to special needs, one child may be six years old, fully verbal,

and still have behaviors. Whereas another child could be six years old, nonverbal, and have no behaviors. You have to treat each child completely differently, you may be able to communicate using words with one but with another, you might have to use pictures or sounds.

One way to help these children communicate effectively is to train them physically. Physical interaction with their environment will get them to release their frustration while also getting them to interact giving an opening for communication. “Numerous studies employed chronic physical activity interventions that consisted of training regimens lasting weeks, months, or years. A consensus emerged that the effects of exercise on cognition were particularly impactful for individuals on the two ends of the life span continuum,” (Tomporowski, et al., 2019, p.#930). One big thing to do with a child with autism or a child with a disability is to engage them in an activity that will stimulate their mind. They have so much energy built up and so much frustration that they have to get out, giving them an objective like music or dance will get them up and moving, burning off that energy and making them happier children.

Some people suggest ways of stimulating the brain and helping with memory, people would do physical activity, have a healthy diet, and listen to music. For children with disabilities, this is exactly what they need. A healthy diet will keep their body feeling good, some physical exercise will keep them fit and engaged, and listening to music will improve their memory and cognitive abilities. “Practicing and listening to music is indeed a complex process that involves a variety of brain areas (in particular: frontal, temporal, parietal, and subcortical areas), each related to distinct cognitive abilities (attention, memory, semantic processing, and motor functions,” (Misuraca, et al., 2017, p.#107).

Multiple studies were conducted to test this theory, one, in particular, is a case on a little boy named Tom. Tom suffered from severe autism and unfortunately couldn't communicate

efficiently. When he started his art therapy sessions he would have severe behaviors, throwing objects, hitting himself, and jumping up and down. It was clear that he had anxiety and couldn't figure out how to explain his frustration. For a while, the therapist started making art in front of him but not making it a requirement that he join in. After the first couple of sessions, Tom started to take part in the artmaking, and after a couple of sessions. This got him to calm down and form a connection with his therapist. "Within 6 months, Tom was sitting at the worktable for 30 min at a stretch, with the whole session lasting for 1 hr. More importantly, Tom's communicative abilities had improved drastically. Not only was he able to choose medium, color, and mode of application by grabbing the tools that he wanted, he was also able to indicate when he wanted to end the session and go home by humming his goodbye song and waving his hand. He had also learned to say "no" to indicate rejection," (Durrani, 2014, p.#106). As you can see art has a huge impact on those with special needs, it is something we need to incorporate more into our education.

Arts and Education in Poor Communities

Arts and Development in Poor Communities

Many students in lower-class households do not get the same opportunities as those of a higher class. They still get educated and they still have access to art, but they don't get a full range to choose from. For example, a school in a higher class community may have various art classes, art supplies, have access to different art events, and may have access to better teachers who are more motivated to educate. A school in a lower-class community may only have access to one art teacher, the supplies they find on their own, and teachers who are less motivated to educate. It is unfair to these students that they don't get the full opportunities they deserve

growing up. It is not only bringing down their hope of a better future but it is also limiting them to their full potential. As children we want to learn, we want to take in as much material as we can, and we want to use it to our advantage.

Studying the paper “The Role of Arts Education in closing the Achievement Gap in High Poverty Schools”, I learn about children in poor communities and how they function without a good education system or arts learning. “There are seven primary factors that drive change in the human brain which include; novel complex learning, physical activity, hope, managed stress, and supportive, hopeful social climate. Hope is the number one critical factor in turning students of poverty into high achievers. Hopeful kids are more optimistic, try harder, and persist longer,” (Basse, 2018, p.# 4). I believe that adding art to these education systems and improving their learning will increase their development. They will take in more material and will have this sense of hope they need in their everyday lives.

In a recent study, the researchers followed children in 6th, 7th, and 8th grade to see how incorporating the arts would benefit their grades. They first checked what their grades were first before introducing the arts to their study. “Although we acknowledge that it is important to examine more specific links between different types of arts participation (i.e., drama or visual art) and child academic outcomes, it is still beneficial to examine potential effects of overall multi/any arts participation (as we do here) because the policy discussion often takes place at the more general level of “the arts”; thus, we examine a composite of any arts participation (music, drama, dance, and/or visual art) in middle school,” (Winsler, et al., 2019, p.#418). They found that introducing arts programs increased a student’s interest as well as their grades. They also found that it had a significant role on their mental health, increasing positivity and expression.

Many of these children may go to school, learn nothing, engage in nothing, and then go home to an unstable household that portrays stress. These children become depressed and lose the hope to learn, they feel their life means nothing or that they are going to go nowhere. Introducing the arts to these education programs will give them that hope again. They may wake up and be excited to go to school because they get to create and put their thoughts into something without having someone tell them no. They might take in more material at school and possibly see a future for themselves. I believe it will improve growth greatly and will create a more motivated generation. It is proven that when introduced to the arts in a school they do better and are happier. "Thus far our data suggest that children of a low socioeconomic group who attend a slum school do improve, at least temporarily, as a result of specific though brief interventions," (Barcai, et al., 1971, p.#139).

Introducing the arts to children in poor communities also will be a factor in their mental health as it brings a positive drive that will help improve their outlook on life in the future. This suggests that it will reduce the number of children in low-income areas committing crimes. "There is a lesson in this neighborhood effect for those who seek to enhance the readiness of children for school about the role of the wider social environment in which children are being raised. This suggests the need to redouble efforts to offer rich language experiences for young children in low-quality neighborhoods through safe and healthful early childhood programs. It also suggests the need to be creative about ways to enrich children's early language experiences in the home and community," (Barbarin, et al., 2006, p.#274). This theorist also suggests that we not only need a significant change in the way we teach education but we also need teachers and educators who are prepared in dealing with children of all kinds of backgrounds. So students that speak a different language, students that come from a low-class

area, children that can't quite communicate as efficiently, or children who are at a different learning level. They all need someone who can accommodate them which many of these poverty areas don't have. "The need to individualize approaches to and connections with family is probably as important as the need to individualize children's experiences, but at present knowledge of how to accomplish this goal is limited," (Barbarin, et al., 2006, p.#274-275). Arts education needs to be introduced but those who teach it need to be qualified and prepared to inspire not just educate.

This idea of the perfect teacher doesn't come often anymore, a teacher isn't supposed to educate, a teacher is supposed to inspire while guiding the children to a successful future. Nowadays it's not about learning anymore it's about getting the numbers right for the school so it looks good against other schools, so they will get funded and will get the recognition they want. If the education system wants to change and go back to guiding children properly, they need to hire people who are motivated enough to inspire children to learn. That's what children who are in lower-class areas need, to improve our teaching and help the kids have a successful future.

Conclusion:

Take that second again and look back to your childhood. After reading this material and taking in all the arts could do for our development, do you believe you would improve more in a school with the influence of the arts? Do you think that if you were introduced to the arts sooner that you would have a different development process than you did? If you were influenced by the arts and it was enforced into your education system, do you think without it you would have learned less? Harnessing into how we developed and what helps us grow intellectually may give us a better understanding of how to move forward and educate the generations ahead. As humans, our goal is to grow and learn, but we also must focus on teaching so that we as a whole can improve in the economy.

This research proved that an artist's influence on a child's development can improve and advance their learning. It showed that when art was introduced to cognitive development, the child was able to take in more material and learn faster. It proved that when introduced to a school or an education system, children were reported to score higher on test scores and advance in education quicker than those who did not have an artistic influence.

In this research, I also found that students with special needs took in more material and were able to communicate more efficiently when introduced to some type of art. A low functioning child may have certain difficulties but if worked with can improve greatly. You just need to focus on the correct way of teaching to get the child to understand completely. These children need focus, love, and patience. With these things, they will not only succeed but will exceed all expectations we may have.

Children in poor communities tended to do better and have this sense of hope when the arts were introduced to their education. They need attention and we need to give it to them. They need better educators, a functioning school, and access to all kinds of opportunities so that they

can thrive and be inspired for their future. These kids have room for so much improvement, they just need a push in the right direction, and I believe that the arts are the perfect way to give them these opportunities.

As you can see the arts have a huge impact on children and what can be accomplished through them. I believe the whole education system should be changed to incorporate things like the arts so that the children will learn differently and be inspired.

“Educating the mind without educating the heart is no education at all” - Aristotle

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