CHFD342 | LESSON THREE

Physical, Cognitive, and Psychosocial Development in Early Childhood

**Topics to be covered include**:

* Physical and cognitive development in early childhood
* Psychosocial development in early childhood
* Major physical and motor accomplishments of the early childhood years
* Piaget’s views on cognitive development versus information processing theorists
* Early childhood education and language acquisition
* The role of family in development during these early childhood years
* Children’s acquisition of a sense of self and gender

Introduction

Early childhood is a magical time. Children age two through six experience amazing growth and excitement. They progress through many stages of development, from physical to cognitive to language development. Most importantly, they begin to understand how they as individuals fit within the social structures and culture that exists in their environment. With this amazing, magical growth come challenges for the child and also for the parents and family members. There are many environmental factors that influence this development but none more important than the family unit. This lesson will explore early childhood development, building upon the concepts discussed in the previous lesson on infant development. This lesson will refer to children at this stage as early childhood or preschool.

Development during Early Childhood

Growth during early childhood is not as fast paced as during infancy. Children usually grow around 12 inches and gain five pounds per year during this time. By the end of age six, the average child is around 45 percent of their future body weight and length. Cells, tissues and organs grow at different rates and are different for each individual child. That is why development is unique to each child although generalizations can be made about motor skill development of most children at various ages (like age three, four, etc.). Also, the change in brain development at this age has a significant impact on motor development as well. This will be explored in depth a little later.

Motor Skills

The first focus will be on motor skill development. Motor skills can be broken down into**gross motor**, which is the use of large muscle groups and includes activities such as running, climbing, hopping, jumping, carrying and catching and **fine motor**, which includes the use of small muscles of the hands and fingers and includes such activities as throwing, scribbling, writing letters, tying shoes, etc. Obviously, these different skills progress in complexity and difficulty depending on the age of the child. Because of the substantial physical growth during this period, it is important for caregivers to balance the activity with routines and consistent sleep patterns.

One key area that has been studied in depth by researchers is drawing. For some reason, drawing fascinates most children at this age; they love to draw. Drawing progresses from scribbling to the use of more complex drawing rules. By the end of this age period, most children are producing skillful creations. Researchers have not only studied fine motor skill needed for drawing but they have also studied the idea that drawings from children provide insight in the child’s personality and emotional state as well.

The progress of drawing for children can be broken down into four stages, which include:

PLACEMENT

Placement occurs at ages two and three and focuses on where the child places scribbling on the paper.

SHAPE

Shape occurs at age three as the child begins to draw actual shapes, such as squares and circles.

DESIGN

Design occurs between ages 3 and four as the child begins to combine forms into different designs.

PICTORIAL

Pictorial occurs between ages four and five as the child begins to draw pictures such as a house, humans, etc.

Influences on Physical Development

There are several factors that influence physical development in preschool age children. There is a balance of environmental factors combined with hereditary factors that were discussed in Lesson 1.

1. Genetic elements significantly impact physical development. Many physical traits in children come from the genetic combination of their parents.
2. Nutrition is another factor that significantly impacts physical development. Pre-school children need a well-balanced diet to provide their growing and changing bodies with support.
3. Major disease can be another factor that can stunt growth and development. Most children can work through minor illness but major disease can substantially stunt physical development.
4. Psychological disturbances have a profound impact as well. A child under major stress whether that stress comes from prenatal developmental risk factors discussed in Lesson 1 or after the child is born. Early childhood stress can come from trauma related to leaving home for school or day care (impacting attachment) as well as from trauma that is occurring in the home such as fighting, drugs use, etc.
5. Socioeconomic status has been found to also be a significant influence on physical development. Generally, children from homes of lower socioeconomic status can sometimes have slower physical development, although this is not true in all cases. The reasons cited for this are usually poor nutrition, family stability and sleep patterns, along with a lack of recreation and exercise.

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Brain Development

* EARLY DEVELOPMENT

The development of the brain is obviously an important aspect of physical development. The basic structure of the brain is created in the first two trimesters of the fetus. The third trimester and first few years of infancy see changes in the connectivity and function of the brain. The early childhood years is when the wiring of the brain (called synaptogenesis) and improving the efficiency of the brain (called myelination) begins to occur. The reason for these changes in early childhood is because of the growth in **dendrites**and the number of **synapses**that exist during this time. It is said that during this stage of development that the neural foundation is being laid to create a system that will allow for more connections to be made later, which will significantly impact an individual’s ability to learn.

* PRE-SCHOOL DEVELOPMENT

It is very important for pre-school children to form connections in the brain. Children at this age are taking in information through all sorts of modems (seeing, hearing, etc.) This new information translates into nerve impulses that travel along neurons making connections with dendrites and other neurons. Neural pathways that are used survive and those that are not used prune away and die. As neural pathways are used, glia cells support the neurons and coat pathways with myelin. Myelin strengthens the pathways and increases the speed of that pathway. Speed impacts how quickly someone can access information from the brain. The process of strengthening a neural pathway is called myelination. This process of myelination has profound implications for teachers of all ages and specifically of pre-school age children.

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Environmental Impact on Brain Development

Genetics may determine the structure of the brain, but it is the environment that determines the extent of the brain’s development. It is the same idea, nature versus nurture that we discussed in Lesson 1. Nature creates the structure and nurture completes the wiring. As a matter of fact, neuroscience has shown that up through age 10 the brain has the greatest capacity to learn new concepts.

As a result of this information, it is imperative that parents create an environment where lots of conversation occurs with their preschool age children, which is often referred to as a language-rich environment. This assists with brain development, which has obviously been linked to cognitive and language development. In addition, it is critical for parents to create a warm, supportive and safe environment as well because it will assist with making those emotional connections.

Preoperational Stage of Piaget’s Theory on Cognitive Development

The **preoperational stage** is the second stage in Piaget’s theory on cognitive development and occurs from ages two through seven. It is the type of thought that precedes operational thought. Children in this stage struggle to take two things into consideration at one time (such as putting together a simple Lego set and then taking it apart – they can do one or the other) and to return to the beginning of a thought sequence (when telling a story, they would be challenged to go back and remember the early parts of the story they just told). During this stage, children begin to represent objects and events in the environment; they can talk about memories, indicating brain connections are being made; they progress through a spectrum of language development, and they understand symbols.

Three examples of cognitive processing at this stage include realism, which occurs when a child accepts that there is both an internal and external world meaning not everything revolves around them; animism, which occurs when they describe inanimate objects as being alive meaning they would for example describe an icicle as being cold; and artificialism, which occurs when they attribute human life to animate objects such as describing clouds as being made by humans.

Piaget provides five different and important features to this stage of development.

1. **Representation**

One of the most important features he describes is representation, which is a child’s ability to record or express information through abstract thinking. For example, at this age, they say they want food rather than saying they want pizza or crackers because food expresses a big category or idea. Over time, more specificity will surface.

1. **Deferred Imitation**

A second feature is deferred imitation, which means a child can imitate a behavior even after the model is gone. For example, a big brother gets done eating and he throws his plate away. Later when the preschool age student gets done, he throws his plate and fork away even though they are washable.

1. **Symbolic Play**

A third feature includes symbolic play, which is expressed through pretending during play. Pretending is a child’s way of acting out what they see and hear and it helps them make sense of the information.

1. **Drawing**

Fourth is drawing, where children create mental representations on paper of what is in their mind. Children create mental images but mental images at this stage are limited to reproducing what they have seen before (imitation) rather than anticipating something new. For example, it is much easier for a child at this age to build a house with blocks by modeling a house their parent made rather than creating a new house on their own or it is easier for them to draw a picture of their own family rather than draw a picture of a made up family.

1. **Language**

The final feature is language development, which is the vehicle for thought.

Limitations of Preoperational Thought

Although children in early childhood are experiencing cognitive development, preoperational thoughts still has many limitations. These limitations are important for parents and teachers to understand when working with children at his age. The limitations include:

EGOCENTRISM

Egocentrism is when a child tends to focus too much on the self during this period. They understand that there is an internal and external world but they still tend to feel most things relate to them. They tend to view everything around them from their own perspective. For example, they feel that the moon is following them around.

CENTRATION

Centration occurs when children focus too much on one feature of an object and ignore other features. An example of this would be when asking children to group a bunch of flowers by color and then asking them to group them by type of flower (rose, daisies, etc.) The children would struggle with this change of classification because they are so focused on color.

CONSERVATION

Conservation is when children at this age lack the ability to understand that certain objects retain properties regardless of their form. An example of this is the famous experiment where you take two exact glasses that are equally filled with water. Then take one glass and pour the water into a taller thinner glass and the child thinks the taller skinnier glass has more water in it simply because it is taller.

REVERSIBILITY

Children at this stage lack the ability to reverse their thought process, or go back to their earlier thinking in a sequence. For example, in the water case above, the child cannot go back to when he had the mental image of the two glasses having an equal amount of water.

Information Processing Theory

Information processing theory does not rely on stages of development like Piaget’s theory. The theory indicates that children’s cognitive development is based on the maturation of certain cognitive processes. These processes include attention – how much can a person attend to at one time and memory strategies such as rehearsal – the ability to repeat modeling, organization - the ability to finds ways in their mind to create structure for information, and retrieval – the ability to access information through recognition and recall.

Language Development

We discussed language development somewhat in Lesson 2, but we will explore it in more detail here. Researchers marvel at how children learn their language. With almost no formal training or process, children have the amazing ability to acquire language on their own. By the time children enter first grade, they have around 8,000 words in their vocabulary, but as we discussed earlier, socioeconomic status of children significantly impacts that vocabulary development. At the same time children are learning words, they are also using rules and guidelines that help them understand how to use those words to express ideas and thoughts. They do this through many ways but one important method is called**fast mapping**, which is the mental process used where children use context clues to determine meaning of words.

Receptive and Expressive Language

The use of language can be expressed in two ways that are very much influenced by different levels of development. **Receptive**language indicates an understanding of words and language. In other words, children hear and can understand words and meaning. **Expressive**language occurs when someone not only understands but also can use the language to express his or her own ideas. Obviously, people have a higher amount of receptive language than expressive.

Language development follows a fairly standard progression. Between ages two and three, children can begin to produce sentences and ask questions. Around age four, children have acquired the complicated structures of their language. And around age six, children can speak and understand sentences they have never been used before.

There are several key terms that are important to know and understand when it comes to language development. It is very important for adults that work with preschool age children to understand these terms and their application to language development. Although children learn the language on their own; parents, day care providers and teachers can play a key role in accelerating that language development. Some of the key terms include:

PHONOLOGY

Phonology is a language’s sound system.

PRAGMATICS

Pragmatics is the way to use language in practical conversation.

SEMANTICS

Semantics refers to the meaning of words.

SYNTAX

Syntax refers to the rules of arrangement of words so that they form a meaningful sentence.

SYNAPSIS

Synapsis is the space between the axon and dendrite that passes the brain impulse transmitting information.

Early Childhood Education

Early childhood education is usually defined as pre-school programs and kindergarten. Early programs were either focused on physical, social or emotional development or they were focused on cognitive development. Most programs today result in a balance of both approaches together. Most early childhood programs now emphasize learning through structured play where children learn through interacting with the environment and being an active participant in constructing meaning. The U.S. Department of Education recommends three goals for preschool programs. They are support children in developing healthy relationships, teaching resilience or how to overcome and deal with challenges; and readiness for school.

Enrollment in most early childhood programs both at the state and federal level are based on at- risk factors. Many of those factors have been discussed in the first three lessons so far. It makes sense that since research indicates that developmental risk factors come from homes with low socioeconomic status. One such risk factor is limited English speaking families.

Bilingual Education

Substantial immigration in the United States has led to many children who are defined as limited English-speaking students or students that are English Language Learners (ELL). There is an obvious link between the lack of ability to speak English and success at school. There is a federal requirement to provide a specific program, called Bilingual Education, for these students. The goals of the program include continuing to develop primary language, acquire English, and provide instruction in both languages. There are three types of bilingual programs. They include:

TRANSITIONAL PROGRAMS

Transitional programs are the most commonly used program in U.S. education. They include the rapid development of English so students can be in all English-speaking courses.

MAINTENANCE PROGRAMS

Students learn English but remain in classes where they continue to develop both languages.

IMMERSION PROGRAMS

Students spend 90 percent of the day in the primary language in preschool through kindergarten, then they are introduced to English in 2nd and 3rd grade; and 4th and 5th grade is taught in about 50 percent English and 50 percent primary language. Many researchers feel the immersion programs yield the best results at closing the achievement gap for language learners.

Universal Preschool

Illinois is one state that provides close to universal preschool programs for children ages three to five. The Illinois State Board of Education (2016) recently released their implementation manual for their competitive grant process for the Pre-K grants. They state three goals for their program, which are to provide programs that are founded in researched-based knowledge about child development; promote children’s emotional, physical, mental and social well-being; and to support nurturing families. In addition, they indicated that funding will be based on the following priority: “The first priority in awarding grants must be given to applicants that propose to serve primarily children who have been identified as being at risk of academic failure. At-risk children are those who, because of their home and community environment, are subject to such language, cultural, economic, and like disadvantages. They have been determined, as a result of screening procedures, to be at risk of academic failure. A disproportionate share of all children considered to be at risk come from low-income families, including low-income working families, homeless families, families where English is not the primary language spoken in the home, or families where one or both parents are teenagers or have not completed high school. However, neither a child’s membership in a certain group nor a child’s family situation should determine whether that child is at risk” (Implementation Manual, p. 3).

You can see the impact that risk factors and language development have on a wide scale basis. Funding in Illinois Pre-K programs is in the hundreds of millions. The ultimate goals of these programs are to close the achievement gap between the “have and have nots.”

 Psychosocial Development in Early Childhood

All of us are familiar with the childhood story of Cinderella. Disney brought to life a story that has marveled and entertained children and adults since 1950. A lot of research on early childhood development has occurred since 1950. Amazingly, the story of Cinderella is a perfect model of the powerful impact that having a supportive and healthy environment during the early childhood years has on the long-term impact on being a well-adjusted adult. As most of you know, Cinderella had wonderful early childhood years. During that time, she had amazingly supportive parents that shared life and education lessons with her on a daily basis. She was supported in in every area of her development, physical, social, emotional and cognitive. She was a very well adjusted, thriving child with an established personality when her mother passed away at the age of 10.

After that, we all know the story of the wicked stepmother and step-sisters and the horrible years that she experienced until she became an adult. But through all those horrible challenges as an adolescent, she never lost who she was. Cinderella never changed how she treated other people and shared her talents with others. Cinderella’s supportive growth in early childhood provided her with the foundation for being a well-adjusted happy adult, regardless of the challenges she faced after those early childhood years. This section of the lesson will focus on the profound impact that that the environment has on early childhood development.

Family Development

The most current view on the “family” looks at the family as system of complex interactions between the family environment, the child’s personality, and the temperament (biological dispositions) of the child and parents. These cannot be viewed as independent systems but rather as a complex set of patterns of interactions between all three areas identified that work together to create one family system. The view of family has changed over time. The “old” view of the family was the two-parent family. But now, there are many, many different types of families from blended families of divorced adults, single parent families and families where parents are not raising children at all. These different types of families have always existed but were viewed as unique variations of the original “family.” But due to the increased divorce rate and other challenges facing adults and children in our society, family is defined as being one these different types rather than being variations of a certain structure.

Researchers have also changed other ways in which they view the family dynamic. There is less focus on the direct parent/child relationship and more on the interaction of the whole family; more focus on the way family members influence each other; and the belief that the parent-child relationship is bidirectional rather than one sided (in other words, the child influences the parent behavior in addition to the reverse). There is no one model that fits all families today because of the differences in children, differences in parents and the changes that have occurred in our country with changing cultures, which we have discussed in prior lessons significantly impact family dynamics.

Parenting Behavior and Siblings

Baumrind (1967) studying parenting and broke parenting styles down into three types. Although this research occurred a long time ago, it is still used as a foundation for new theories today. The three different types of parents included:

**Authoritarian**– where parents demand instant obedience (my way or the highway).

**Authoritative**– where parents respond to child’s needs and wishes believing in parent control but also having a willingness to explain reasons to children.

**Permissive**– where parents take a very tolerant, accepting view of children behavior and rarely place demands or discipline children.

**Effective Parenting Styles**

Baumrind’s research showed that the authoritative style of parenting during early childhood resulted in the most successful, well-adjusted children. These types of parents maintain a balance for children between helping them grow as an individual and helping them socialize into family and society. They set a standard of control, maintain clear communication, encourage mature behavior, and are nurturing. The one caution with Baumrind’s theory is that the research was primarily done on white, two-parent families. Caution needs to be employed when broadening the theory to the culturally diverse families that exist today.

**Siblings**

Siblings (brothers and sisters) also have a strong impact on child development and assist in the role of socialization of children during the early childhood years. Siblings influence each other in many ways including sometimes being caregivers, modeling behavior to be imitated, and providing a non-threatening sounding board. The sibling relationship is one of the most important relationships throughout a person’s life because it is usually the longest relationship. Parents normally pass away much earlier in a person’s life than siblings do.

Divorce and the Impact on Development

Around 50 percent of all marriages in the U.S. end in divorce. That means, many children during their early childhood years are impacted by divorce. Divorce can have a profound impact on children of all ages but because of the powerful long-term impact that development at this age has on personality, pre-school age children are particularly vulnerable. Divorce can be looked at in three stages in terms of impact on development: pre-divorce, actual separation, and changing sometimes meshing of families through remarriage.

* PRE-DIVORCE

The period that usually precedes divorce is usually full of conflict and displays of anger. This behavior obviously occurs between parents but it also trickles down to how the children are treated as well. Stress can cause profound changes in behavior. This stress in the home can significantly slow emotional development, which as we discussed earlier will impact other areas (physical and cognitive) of development as well.

* ACTUAL SEPARATION

The actual separation that comes with the divorce impacts children in many ways. Because children at this age struggle with abstract thinking and cannot “reverse” think, meaning they can’t link behavior together, children often times end up blaming themselves for the divorce. From a brain development standpoint, they just cannot understand the concept that all that fighting between mom and dad led to the divorce. The obvious impact at this stage is the separation anxiety that exists when parents split. This separation anxiety stems from the attachment concept that we discussed in Lesson 2 that has been established between each child and parent during infancy. Parenting styles often change as well during this time. Two examples of this occur when mothers often show less affection during the initial divorce and fathers become more permissive.

* REMARRIAGE

The last stage of divorce is sometimes remarriage. Children must develop new relationships with a step-parent and sometimes step children and integrate into a whole new family system.

Ultimately, parents and others that influence children during divorce at early childhood need to be very tuned into the developmental impact that divorce as on children at this age.

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Self-image

As children grow and develop, they begin to develop a self-image. Think of a child looking in a mirror. That child has two aspects of self-image. The first is the “I” and it is the part that is looking in the mirror. This is the part of the self-image that is thinking, making judgments and controlling the surrounding world. The second part is the “Me” and it is the part being watched in the mirror. It is the object of I’s thinking and judging. As “I” evaluates “Me”, the self is judged as being good or bad, competent or incompetent, etc. This judgment gives a child his or her sense of self, which makes that child unique.

* Infants go through the beginning steps in developing this self-image. During the early childhood years, children have an increasing ability to understand things at a deeper level and see different insights into themselves.
* Within the span of ages two through seven, children grow developmentally with regard to self-image. Early on, the child will focus on either physical images (I am tall) or tangible objects (I like food).
* As they get older, their language develops and their cognitive and social maturity expands their sense of self. At this stage they may say, “I am growing really fast and as a result I am tall” or “I eat a lot and I really like different kinds of food.”
* At the end of early childhood, children expand their sense of self because they can compare themselves to others. They might make statements like, “I have really grown since last year but there are a lot of kids in my classes still taller” or “My favorite food to eat on the weekend is pizza but my brothers and sisters like to eat tacos.”

Gender Roles

Another application of self-image has to do with gender roles. Am I a girl or a boy and what should a girl or boy act like? As you know, the idea of gender roles has changed drastically in America and continues to change. In 2016, the U.S. Department of Education released guidance to schools that transgender students (children whose assigned sex at birth does not match their gender identity) must not be discriminated against in any way. The guidance includes the provision that transgender students must be allowed to use the bathroom of the sex that they identify with. This guidance was later removed by 2017, but the fact that the debate is happening is a reminder how gender roles change over time. It is helpful to define a few terms in regards to gender.

GENDER IDENTITY

Gender identity is the conviction that one is male or female.

GENDER STEREOTYPE

Gender stereotype is the set of narrow beliefs about characteristics that are associated with being a male or female.

GENDER ROLE

Gender role is the culturally accepted sexual behavior or what is accepted by society for being male or female.

Theories on Gender Development

There are four popular theories about gender development. They include biological explanations, which occur when physical and psychological differences are attributed to males and females. Outside of obvious physical differences, most of the research in this area has to do with the influences of chromosome and hormonal differences between males and females.

* COGNITIVE DEVELOPMENT THEORY

Cognitive development theory explains that children create a sense of identity and then seek behaviors that are reinforced. As they develop a construct of their world, they build concepts of males and females.

* GENDER SCHEMA THEORY

An extension of cognitive develop theory is called gender schema theory. In this application in older children in the early childhood stage, children form a mental network of associations that guide how they interpret information they encounter.

* PSYCHOANALYTIC IDENTIFIED THEORY

Psychoanalytic identified theory is based on the work of Freud. His theory states that children become sex typed between the ages of four and six. The strong attachment they have with the father or mother will impact their gender identity.

* SOCIAL LEARNING THEORY

Finally, social learning theory argues that parents and other family members and media influence gender role behavior with the way they reinforce behavior and with decisions they may.

A child’s environment profoundly impacts gender roles. And as we know, the environment profoundly impacts child development. Gender roles are most defined by family, peer, media and cultural stereotypes. How a child interprets those environmental influences will determine the aspect of their self-image that applies to their gender.

Conclusion

The stage of early childhood can be amazing to watch children experience. The level of growth from physical to cognitive to emotional to language to social is unreal. This is also the stage that has been identified as having the longest-term impact on developing personality and becoming a well-adjusted adult. But, like infancy, things can go very wrong for a child during this time. Stress in the home, divorce, unclear role definition can all influence that development.