



# Theories of Child Development and Their Impact on Early Childhood Education and Care

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## Abstract

Developmental theorists use their research to generate philosophies on children's development. They organize and interpret data based on a scheme to develop their theory. A theory refers to a systematic statement of principles related to observed phenomena and their relationship to each other. A theory of child development looks at the children's growth and behavior and interprets it. It suggests elements in the child's genetic makeup and the environmental conditions that influence development and behavior and how these elements are related. Many developmental theories offer insights about how the performance of individuals is stimulated, sustained, directed, and encouraged. Psychologists have established several developmental theories. Many different competing theories exist, some dealing with only limited domains of development, and are continuously revised. This article describes the developmental theories and their founders who have had the greatest influence on the fields of child development, early childhood education, and care. The following sections discuss some influences on the individuals' development, such as theories, theorists, theoretical conceptions, and specific principles. It focuses on five theories that have had the most impact: maturationist, constructivist, behavioral, psychoanalytic, and ecological. Each theory offers interpretations on the meaning of children's development and behavior. Although the theories are clustered collectively into schools of thought, they differ within each school.

**Keywords** Theories · Theorists · Child development · Early childhood education

A long time ago, our predecessors built bridges before engineering programs and knowledge of the laws of physics were present, while prehistoric primitive healers identified cures before medical databases and information of the laws of natural science were available.<sup>1</sup> The evolution of these laws impacted on civilization. For instance, “the laws of physics assisted in building the Golden Gate Bridge, while the laws of biology aided in the elimination of smallpox. In a parallel way, theories have contributed to the development of guidelines to improve human performance”. Theories and principles of motivation (Graham & Weiner, 1996; Saracho, 2019, p. 21).

Approximately three decades ago, the majority of developmentalists initiated research studies to determine universal laws about human development, that is, laws that may possibly simultaneously relate to everybody. *Nomothetic*

laws about human development concentrate on universal successions and their situations. Concurrently, some developmental researchers focus on a combination of individual differences and on *idiographic* developmental patterns that are distinctive for some individuals (Scarr, 1992). Developmental theorists use their research to generate philosophies on children's development. Many developmental theories offer insights about how the performance of individuals is stimulated, sustained, directed, and encouraged. Psychologists have established several developmental theories. The following sections discuss some influences on individuals' development, such as theories, theorists, theoretical conceptions, and specific principles.

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**Table 1** Influential theorists, theory, philosophy and applications

Theory	Theorists	Philosophies	Applications
Maturation theory	G. Stanley Hall (1846–1924) Arnold Lucius Gesell (1880–1961)	Development is the unfolding of genetically determined traits Education should follow development	Readiness; developmentally appropriate practices
Constructivist theory	Jean Piaget 1896–1980 Lev Semenovich Vygotsky 1896–1934 Jerome Bruner (1915–2016)	Individuals energetically construct their own knowledge about their experience. This knowledge facilitates their interpretation about their view of the outside world	Intellectual development Language and literacy development
Behaviorist theory	Edward Lee Thorndike (1874–1949) B. F. Skinner (1904–1990) Ivan Pavlov (1849–1936) John B. Watson (1878–1959) Sidney William Bijou (1908–2009)	Learning involves a modification in behavior as a result of attaining reinforcement	Reinforcement motivation
Psychoanalytic theory	Sigmund Freud (1856–1939) Erik Erikson (1902–1994)	Basic mechanisms of social emotional development arising from human instincts	Play therapy
Ecological theory	Urie Bronfenbrenner (1917–2005)	An environmental approach to the individuals' development through the different environments in which they grow and influences change and its cognitive, moral, and relational development	Social policy in child development and early childhood education includes society, classroom, and family environments

## Origins of Developmental Theories

Theory refers to a systematic declaration of principles associated with observed phenomena and their relationships to each other. A theory is a structure for consolidating and interpreting data. A child development theory examines and records children's development and behavior and interprets the recorded information. The interpretation indicates those essentials in the children's genetic composition and the environmental situations that have an impact on their development and behavior, as well as the relationships among these variables.

Child development and early childhood education have been strongly related for many centuries. Knowledge of child development is vital in early childhood education and care because information on the children's development identifies their developmental level to help make educational decisions about the children's instruction. Child development is not a unified field, with a single integrated set of theories, nor does one theory or set of theories predominate. Rather, there are many different competing theories in the field. Child development theories are modified when results from research studies challenge their theory. Only some developmental theories describe changes in the children's growth.

The five theories that have had the most impact in early childhood education are summarized in Table 1. They are (1) maturationist, (2) constructivist, (3) behaviorist, (4) psychoanalytic, and (5) ecological.

Each theory offers interpretations on the meaning of the children's development and behavior. Although the theories are clustered collectively into schools of thought, they differ within each school. Each theory identifies activities that are developmentally appropriate for young children. Froebel and Owen established the initial early childhood education programs, which occurred before the emergence of child development. However, Hilgard (1987) found that they had an implicit theory of child development. Young children construct implicit theories based on the information they obtained from their environment. At the end of the nineteenth century G. Stanley Hall and Bird T. Baldwin reported explicit theories of child development. Charles Darwin's theory of evolution profoundly affected these psychologists so that they established the maturationist theory of human development, although it had several limitations.

## Maturation Theory

Maturation theory indicates that an individual's hereditary has the most impact on the children's development. As they develop, their genetic aptitude progresses. Harsh environmental situations can only delay but not generate or improve their aptitude. Based on this theory, children need to be provided with developmentally appropriate learning experiences. Difficult experiences will only discourage the children and optimal learning and progress will not occur. The maturationists' philosophy provides a fundamental understanding

that has a foremost impact on early childhood education theory and practice. It affects the way that educational researchers, policymakers, and practitioners recognize young children's development and its implications for researching and educating them. They think that development is a biological progression that gradually emerges instinctively in inevitable, successive stages (Hunt, 1961). This viewpoint indicates that numerous practitioners believe that young children gain knowledge naturally and spontaneously throughout their development. Arnold Gessell's research improved the progress of the maturationist theory. The belief that genetic pre-determination controlled the child study domain and early childhood education throughout the first half of the twentieth century (Hunt, 1961). Most researchers and educators of that period thought that the children's biological heritage basically dominated the sequence of their development. Environmental influences were assumed to be minor. According to Gesell (1933), "No environment as such has the capacity ... to generate the progressions of development" (p. 211). He discusses the function of maturation in the initial patterns of child behavior and the effects of heredity, environment, learning, growth and development. He proposes that the maturation theory assists, at best for some time, researchers with both their experimental studies and theoretical interpretations (Gesell, 1933).

In the early twentieth century, G. Stanley Hall introduced developmentally appropriate practice, which was continued by Arnold Gesell and his supporters in the Maturationist school of child development (Gesell & Ilg, 1946), which inspired a fundamental concept of *readiness*.

### G. Stanley Hall's Theories

G. Stanley Hall (1844–1924) finished his doctorate at Harvard University where he studied with William James, who was considered the "Father of American psychology". Then he went to Germany to study with Wilhelm Wundt, the renowned pioneer of experimental psychology. After he returned to the United States, Hall used his knowledge of experimental psychology to conduct research on children's development and apply the developmental principles to education. Several psychologists think of him as a pioneer of "child-centered education" and he is perceived to be the father of the child study movement.

### Child Study Movement

G. Stanley Hall contributed his personal approach to both psychology and education. Hall's research in child study indicated that development depends on genetics. He also established the fundamental technique of child study, which is based on observation. Since during this period, qualified child psychologists were unavailable in the United States,

Hall recruited interested individuals to conduct the observations for him. They were mainly parents and teachers who observed children in their natural environments instead of laboratories. Darwin inspired Hall's research work; therefore, it was considered the theory of evolution. He thought that individuals in the human race progressed at a developmental sequence that was similar to the development of the species. He believed that children should be liberated from the primitive facets of evolution to be able to perform as mature contemporary human beings. This can be achieved through the normal activities of childhood. This basic development is frequently communicated in the expression, "ontology recapitulates phylogeny," which refers to the evolutionary history of an individual, a society, or a group of societies.

Hall's lasting influence was the emphasis on the scientific study of childhood. He gathered huge quantities of evidence about children in an effort to describe children at several periods of life. Hall's approaches, gathering survey data about children from teachers who were not skilled in observation procedures, would be discounted as scientific nowadays. Nevertheless, with these methods, he surpassed new fields in the enquiry of childhood and formed the foundation for further scientific research in childhood and also the use of child development principles to education. In several respects, Hall was thought to be the initiator of the "child-centered" method to education, the position that education should focus on the nature of childhood instead of making children follow traditional systems of education (Strickland & Burgess, 1965). G. Stanley Hall's introduction to developmentally appropriate practice was continued by Arnold Gesell and his supporters in the maturationist school of child development (Gesell & Ilg, 1946).

### Gesell's Theories

Arnold Lucius Gesell (1880–1961) continued Hall's work on maturationist theory and brought modern research techniques to bear on its evolution. Gesell studied psychology with G. Stanley Hall at Clark University, Worcester, Massachusetts. In 1906 Gesell received a doctorate from Clark University and in 1911 he was in charge of the Yale Psychoclinic (later known as the Clinic of Child Development) in New Haven. Since he believed that a medical preparation was critical for his child development research, he obtained a medical degree in 1915 from Yale University.

Originally Gesell was interested in childhood abnormality. He developed new approaches (such as using the movie camera as an observation tool) to observe and assess behavior in structured environments and incentives. He used a one-way mirror to film approximately 12,000 children of different ages and developmental levels. He also collected the records of children whose ages ranged from birth to the late

teens. Gesell's observations showed (1) that children need to reach explicit maturational phases in development before their learning affects their behavior; and (2) a genetic developmental structure in the four areas of motor skills, adaptive behavior, language development, and personal and social skills. In 1928 he published his book, *Infancy and Human Growth* (Gesell, 1928), based on his theory; he provided a developmental timetable of 195 items to assess infants whose ages ranged from three to 30 months. In 1938 Gesell and Helen Thompson revised the developmental timetable to assess infants who were four weeks old. They published the revised list in their book titled, *The Psychology of Early Growth, Including Norms of Infant Behavior and a Method of Genetic Analysis* (Gesell & Thompson, 1938). Several specialists disapproved of his timetables, still they were extensively applied. He pointed out that they could be used as a selective direction instead of as extremely lenient or inflexible guidelines. They also encouraged a fundamental concept of readiness.

### Readiness

The concept of "readiness" has its origins in the maturationist theory and continues to be an essential component of early childhood dialogue. Based on the maturationist theory, readiness indicates when children are at a maturation level where they are able to learn new behaviors, skills, or concepts. It identifies when children are ready for a specific kind of instruction. Frequently, readiness is associated to chronological age. For instance, children's ages determine when they are eligible to enroll in public kindergarten or elementary school. Chronological age identifies the child's age that is approximately associated to maturation and provides a criterion that is better than mental age, which is usually inferred.

Many child development experts recommend that the children's maturation be used to determine their readiness instead of their age. Others propose that several indicators be used to determine the children's readiness for experiences such as admission to school. During that time, collaborators of Gesell et al. (1978), created a school readiness assessment which can be used as the criteria for school readiness. This reflects the belief that children who cannot achieve these criteria need to delay their entry to school. Their success is achieved when school learning corresponds to the children's developmental maturity level.

The concept of readiness has been related to learning in subject areas such as reading and numeracy readiness. For example, several educators contend that reading instruction should be provided to children only when they reach a mental age of 6 years and 6 months. This recommendation was based on a study (Morphett & Washburne, 1931) that showed that children succeeded in learning to read when

they had this mental age, which suggested that development is established on the internally-timed unfolding of hereditary of the individual's characteristics. On the other hand, many psychologists, educators, and child development professionals challenge this interpretation. They think that both experience and maturation establish children's ability to profit from their learning experience. They need educational experiences that provide them with the background knowledge to succeed in school. Programs that offer these types of experiences have been accessible to preschool children who are economically challenged. For example, *Head Start* programs have existed for more than 56 years. Head Start is a program for children whose ages range from 3 to 5 years. It was created in 1965 as part of a far-reaching endeavor to prevent poverty in America. In 1998 Early Head Start was launched for younger children (e.g., infants, toddlers) and pregnant women. It focused on the influence of the first years in a child's life (National Association for the Education of Young Children, n.d.).

Child development experts, who are maturationists, have encouraged the recognition of instructional readiness for school and the concept of a child-centered curriculum. Various behaviorists have challenged the influence of maturation because they believe that it only has a restricted effect on development, especially in young children. The maturationist theory focused on children's normal development, but failed to provide information on (1) environmental consequences on the children's development, (2) children's individual differences, and (3) how to support the children's development and learning. Opponents criticized the maturationists' overemphasis on biological factors and their disregard for the effects of experience and learning. They claimed that (1) genetic heritage in isolation is unable to effectively describe the multifaceted progressions of human development, (2) individual differences are frequently disregarded or stigmatized, and (3) beneficial information is missing to be able to compare children to group norms provided by maturationist scientists (Weber, 1984). The accountability in early childhood programs intensified the expectations for young children's academic performance, which maturationists overlooked. Such limitations may indicate why the interest in maturationist theory has declined (Spodek & Saracho, 1994).

Researchers began to reject the maturationist theory. It was criticized for suggesting that some children were genetically inferior or lacked the capacity for academic success. For example, children who were tested and considered to be unprepared for formal schooling were sometimes denied access to kindergarten, rather than provided with the necessary educational support. Researchers, educators, and developmentalists started to search for an alternative means of thinking that would promote the children's intellectual

development and would be accepted by an environmental intervention or education.

## Constructivist Theories

A different type of developmental theory that has affected early childhood education is cognitive psychology, specifically the constructivist theories of Jean Piaget, Lev Semenovitch Vygotsky, and Jerome Bruner. The constructivists consider persons as vigorously constructing their personal knowledge about their experience. Approximately from birth, children have certain knowledge about the world. Such knowledge facilitates their interpretation about their view of the outside world. New knowledge similarly assists them to adjust their understanding. Acquiring knowledge and developing innovative approaches of understanding where knowledge is a procedure lasts throughout the lives of individuals. According to Piaget (1967/1971), children use physical and social knowledge as the basic sources and approaches for information. Physical knowledge refers to the observable properties and physical actions of objects. For example, children conclude whether a table's (1) surface is hard or soft or smooth or rough and (2) the top is round or rectangular. These are components of physical knowledge that are immediately available through the children's senses. Social knowledge refers to the social customs that society has defined. For example, children learn that they can lay objects on the table and eat on the table. This information is acquired through logical processes and are part of Piaget's (1967/1971) social knowledge (Kamii & DeVries, 1978/1993; Spodek & Saracho, 1994).

## Piaget's Theories

Jean Piaget (1896–1980) was a forerunner of constructivist theories of cognitive development. He observed children of different ages in order to collect evidence as to how they resolved thinking problems, conveyed their dreams, made moral judgments, and managed additional intellectual activities. Piaget noted that the children were very ego-centric and construed circumstances exclusively from their individual perspective. In contrast, adults typically know that individuals differ in their points of view and may vary in their interpretations of situations.

Piaget found that children in all cultures have a thinking structure that progresses through a sequence of stages. Children use a sequence of *schema*, which integrates their styles of reasoning about components of the world. A schema is an integrated method of reasoning about these components. For the newborn, it is a pattern of repeated

behaviors in similar situations. For example, when newborns see a bottle, a rattle, or the edge of the cradle, they may grab it. This grabbing, which is based on their understanding, indicates a schema. When children age and acquire language, schema becomes more abstract. A young child's schema is characterized by a set of behaviors. When they grow and learn language, children have abstract schemata (plural for schema) that might be symbolized in language. A schema denotes a stage of *equilibrium* in a pattern of knowledge that might be recurrently shifting (Spodek & Saracho, 1994).

Modifications that occur in children's interpretations develop from two interactive processes: *assimilation* and *accommodation*. In *assimilation*, the individual's perceptions are fit into prevailing patterns of interpretation. This occurs when individuals gain knowledge that they previously learned. Therefore, the schema, or thought, is expanded and explained. For instance, a young girl may be familiar with dogs but has never seen a horse before. She knows that a dog has hair, four legs, and a tail. When she sees a horse for the first time, she may at first identify it as dog. After she is informed that this animal differs from a dog, she will revise her present schema for a dog and construct a new schema for a horse. This process is called *accommodation* (Spodek & Saracho, 1994).

*Accommodation* occurs when individuals acquire knowledge that differs from their previous knowledge. In this instance, the new knowledge cannot be assimilated into ways of understanding information that they already know. Consequently, a current schema should be adapted based on the recent knowledge. These two procedures and the remainder of knowledge and interpretation are combined into one procedure of equilibration. Children's current levels of information characterize their current degree of equilibration.

Piaget hypothesized a sequence of stages of intellectual development which characterize the normal order of levels of understanding through which children progress during their development. Every stage signifies how children perform intellectually. These stages have been categorized as (1) the sensorimotor stage (birth to 2 years); (2) the preoperational stage (2 to 7 years); (3) concrete operational stage (7 to 11 years); and (4) the stage of formal operations (from 11 or 12 years through adulthood). The ages for each stage are only an estimate because children progress through these stages at their own developmental rate. According to Piaget (1963), individuals advance from one stage of development to the following based on four major influences: *maturation*, *experience*, *social transmission*, and *equilibrium* or *self-regulation*. Collectively, these four influences control children's cognitive development. The maturation or educational processes need to be integrated to be effective (Spodek & Saracho, 1994).

Although for numerous years Piaget had conducted research on children, his initial studies and theories were not recognized in the United States or Britain. Conceivably they were viewed as contradicting the predominant maturation theory of development. Furthermore, child development and early childhood education researchers were hardly interested in young children's intellectual development. His theories began to be accepted in the 1960s in the United States, which may have been due to an increased concern about children who were experiencing academic success in schools. Piaget attributed cognitive development to developmental stages, which appear to be somewhat widespread; while Vygotsky practiced another method which assigned importance to culture and social interactions for children's development.

### Vygotsky's Theories

Lev Semenovich Vygotsky (1896–1934) was also a constructivist theorist in cognitive psychology. He was Piaget's contemporary. Initially, he was a literature teacher. Between 1915 until 1922, he concentrated on artistic creation (Vygotsky, 1971), while later shifting to developmental psychology, education, and psychopathology. Vygotsky was born in Russia before the Soviet revolution but died at a young age. His initial work was published during the 1930s, but the Soviet regime censored a great deal of his later work. Nevertheless, most scholars are aware of his influential work. One of his foremost contributions to the field was *Thought and Language* (Vygotsky, 1934/1962), which was translated and published in English in the 1960s. The majority of his other publications emerged in the 1970s and 1980s.

### Natural vs Cultural Development

Vygotsky differentiated between two types of development: *natural* and *cultural*. *Natural* development was the effect of maturation, whereas *cultural* development was associated with language and reasoning capability. Consequently, the individuals' intellectual patterns are the results of the activities they experienced within the culture in where they were raised. Furthermore, progressive methods of thought (conceptual thinking) are transferred verbally to children; hence, language is an indispensable means in assessing the individuals' aptitude in learning how to think. For Vygotsky, thought and language were inextricably interrelated. If children are provided with enriched experiences for informal and formal education, then their use of language can become more sophisticated and reveal their level of conceptual thinking. Conversely, when children's language environments are limited to direct speech and the popular media, their potential as thinkers and users of language is thwarted. In contrast, children will develop normally and their thinking becomes

divergent and complex when they are exposed to a natural language environment that provides them with wide-ranging and multifaceted concepts. Vygotsky (1978) claimed that learning needs to be practical and authentic in the children's environment; specifically, it must be appropriately based on their daily lives and practices of their community or culture.

*Sociocultural theory* is founded on the paradigm that human events occur in cultural contexts, which are facilitated by language and more symbolic structures. It is a component of Vygotsky's theory that explains learning as a social process and the initiation of human intelligence in society or culture. Sociocultural theory concentrates on the interaction between individuals and the culture in their environment, showing that human learning is primarily a social process. In the early twentieth century, Vygotsky stated that this theory indicated that young children's cognitive development improved during their social interaction with others. In so many words, children become social learners before becoming cognitive thinkers who generate knowledge (Saracho & Evans, 2021).

Vygotsky's sociocultural theory affirms that learning is a social process and the beginning of human intelligence is rooted in society or culture. The main concept of Vygotsky's theoretical framework is that social interaction assumes an important function in children's cognitive development. Vygotsky thought that learning was a social process. First, children interact with others and then integrate the information they obtain from the social interaction into their mental structure. The children's cultural development emerges at the social level and then at the individual level, which is first between others (interpsychological) and then inside each child (intrapsychological). This process relates similarly to voluntary attention, to logical memory, and to the development of concepts. All the advanced functions originate as actual relationships between individuals (Vygotsky, 1978). Vygotsky contributed numerous additional important concepts that provide an understanding of children's learning. Possibly the renowned zone of proximal development (ZPD) is Vygotsky's best concept.

### Zone of Proximal Development (ZPD)

Another feature of Vygotsky's theory is the concept that the possibility for cognitive development is restricted to a "zone of proximal development" (ZPD). Such a "zone" is the domain for which children are cognitively ready, but to completely advance, they need support and social interaction (Briner, 1999). Vygotsky perceived that children progress through their *zone of proximal development* (ZPD), which is the place past an individual's independent performance. Children are able to function in this zone and create innovative abilities through the support of more mature thinkers. These innovative abilities are then merged into

the individual's mode of thinking. Children's thinking is improved when they are presented with problems that are slightly beyond their abilities. During this situation, children can interact with more intellectually mature children who support them in this type of thinking. These approaches extend their abilities and develop the source for their development. Consequently, the children's present level of development does not restrict their aptitude to learn. Instead, their developmental level improves in challenging circumstances. The zone of proximal development indicates how children's functioning is facilitated socially, specifically, the way common understanding has been reached through children progressing from their present abilities to an advanced, culturally mediated development stage (Shabani et al., 2010).

### Cultural Tools

Vygotsky's theory considers development to occur due to maturation and the attainment of cultural tools. These cultural tools attach children to their physical and cultural environment and assist them to achieve intellectual mastery over that environment. These cultural tools change the ways in which individuals think. The value of children's emerging abilities with cultural tools is supported with Jerome Bruner's (1960) concept that using cultural artifacts assists in surpassing the boundaries of physical evolution. Individuals can lengthen their capacity to recall (such as by using written language). Likewise, contemporary technology permits persons to travel faster and faraway and to communicate at a larger distance than would be physically possible without it. Instinctively, in responding to the status of the individual's technology, children are introduced at a very young age to the artifacts of their culture or to reproductions of them. Many parents give young children an assortment of toys, which affect their development. When children play with these toys, they become socialized into their later authentic use of these artifacts. In comparison, for children in other cultures who have very limited toys, their socialization depends on verbal interaction rather than using the material objects to develop their social skills.

Recently Vygotsky's theories have drawn interest, particularly among child development specialists and early childhood educators who acknowledge a constructivist understanding of cognitive development, but criticized Piagetian theory. Vygotsky's model has been especially applied to language and literacy education (Saracho, 2017) and has also been studied by Bruner.

### Bruner's Theories

Jerome Bruner (1915–2016) also studied the relationship between thought and language. He was an American psychologist and educator who established theories on

perception, learning, memory, and other facets of cognition in young children. He made a great impact on the American educational system and facilitated the introduction of cognitive psychology. He investigated perception in children and determined that children's individual values drastically shaped their perceptions.

In 1941 Bruner received a doctorate in psychology from Harvard University. Throughout World War II, he was an expert on psychological warfare for the U.S. Army. In 1945, Bruner went back to Harvard and became a professor of psychology until 1952. Between 1960 and 1972 he was the director of the university's Center for Cognitive Studies. From 1972 to 1980 he was a professor of experimental psychology at the University of Oxford in the United Kingdom. In 1980, he went back to the United States to resume his research in developmental psychology. In 1991, Bruner became a faculty member at New York University (NYU) to mainly teach in the School of Law (Bruner, 2004). As an adjunct professor at the New York University (NYU) School of Law, Bruner conducted research on the impact of psychology on legal practice.

Bruner's investigations introduced Jean Piaget's concept of developmental stages of cognition into the classroom. His book, *The Process of Education* (Bruner, 1960), had a strong impact on the curriculum-reform movement of the time. He contended that children can learn any topic at any stage of development, when it is taught appropriately. Bruner believed that all children had a natural curiosity and a yearning to become proficient at several learning tasks. Children lose interest when they are presented with a difficult task. Children need to be presented with tasks that are challenging, but which do not overwhelm them at their present developmental stage. Additionally, the task needs to be introduced within a framework of structured interaction between the adult and child. The task should build upon the child's skills. Bruner described this framework as "scaffolding." It simplifies learning by reducing the child's selections, or "degrees of freedom," in the learning process to a practicable realm. Bruner also advocated for the "spiral curriculum," where students learn topics every year at aggregate levels of difficulty. Bruner created a social science curriculum that was extensively used throughout the 1960s and 1970s.

Later in his life, Bruner's theory shifted to a more Vygotskian philosophy. He viewed young children as attempting to make sense of the world. He also believed that they would assume an involved role as more mature thinkers, which would help children advance their thinking. He acknowledged that learning impacts development and that intellectual development can be known within the children's cultural environment (Bruner, 1990). Other constructivists had previously inspired this concept.

## Impact of Constructivism

The constructivist theorists (e.g., Jean Piaget, Lev Vygotsky) had an impact on the understanding of children's developmental learning. While their contributions differ, each provided a comparable framework showing that during instruction, learning and development are cultivated through young children's interactions with their environment and others, such as peers or adults (Hunt, 1961). The educational importance of the social context has attracted an awareness of children's previous beliefs, knowledge, and skills. Prior knowledge has been found to have an important effect on how children create meaning during instruction. The constructivists' emphasis on the social context and greater community has helped educators to shift from individually-based instruction to cooperative instruction. Lastly, the constructivists' utmost educational impact could be the transitional change from gaining knowledge through a process rather than a product, which may be a long-lasting and meaningful modification in the educational structure (Jones & Brader-Araje, 2002).

Researchers support the constructivists' (e.g., Jean Piaget, Lev Vygotsky, Jerome Bruner) learning view that young children need to (1) be actively involved in the learning process and (2) initiate most of their educational activities. In the learner-centered method the teacher shifts from being a knowledge transmitter to a cognitive guide of the children's learning. This constructivist approach has influenced early childhood educators' focus on the physical environment and the curriculum, which has led them to implement a variety of learning centers with developmentally appropriate materials. This allows children to actively engage and shift from one center to another, where they play and manipulate the materials. Thus, social constructivist theories have affected the design and organization of early childhood classrooms. Educators cannot ignore the strength of peer interactions and the classroom community in learning. The majority of classrooms in the United States have identified spaces for children to work in small groups, as well as room arrangements for whole class discussions. The constructivists have helped both researchers and educators to understand child development and the learning process. Thus,

constructivists of different persuasion (hold a) commitment to the idea. that the development of understanding requires active engagement on the part of the learner (Jenkins, 2000, p. 601).

The origins of constructivism are obviously communicated in Piaget's attention to the active function of the children's learning: "... all knowledge is tied to action, and knowing an object or an event is to use it by assimilating it to an action scheme..." Piaget, 1967/1971, pp. 14–15). A theme shared by constructivists is that the children's development

of understanding requires them to actively participate in meaning-making experiences. Glaserfeld (1995) believes that children should actively construct knowledge, which is a mutual foundation of the constructivists (Boghossion, 2006). Practitioners need to offer young children opportunities and motivations to construct meaning (Glaserfeld, 2005). An important characteristic of constructivism is that the children, rather than the teacher, assume the responsibility for learning, whereas in a different theory, behaviorism, teachers assume the responsibility for learning instead of the children.

## Behaviorist Theory

The behaviorist theory of learning and development began in the early 1900s and prevailed in the early twentieth century. It originated with the work of Ivan Pavlov in Russia, while in the United States it has been influenced by the studies of John Watson, Edward Thorndike, and B. F. Skinner. According to Watson (1913):

Psychology as the behaviorist views it is a purely objective experimental branch of natural science. Its theoretical goal is the prediction and control of behavior (p. 158).<sup>2</sup>

Behavioral theory characterizes a focal drive in helping to describe the children's learning and development (Schunk, 2021). Its major concept is that learning involves a modification in behavior as a result of obtaining reinforcement and treatment of associations between stimuli from the situation and the individuals' apparent reactions. Psychologists believe that results are based on behavioral responses that occurred after a satisfying effect which were most likely to become patterns that will continue to occur again in response to a similar stimulus. Behaviorists measure behavioral modifications. Edward Lee Thorndike is a foremost behavioral theorist who found that a response to a stimulus is strengthened after (1) positive rewarding results and (2) continuous exercise and repetition. This concept of learning is comparable to the "drill-and-practice" programs.

B. F. Skinner, another important behaviorist, developed a variation of behaviorism that he referred to as "operant conditioning". He thought that rewarding the appropriate

<sup>2</sup> Although Watson was the first to maintain explicitly that psychology was a natural science, behaviorism in both theory and practice had originated much earlier than 1913. Watson offered a vital incentive to behaviorism, but several others had started the process. He never stated to have created "behavioral psychology." Some behaviorists consider him a model of the approach rather than an originator of behaviorism (Malone, 2014). Still, his presence has significantly influenced the status of present psychology and its development.

elements of the more intricate behavior would reinforce it and promote its repetition. Thus, reinforcers managed the appearance of the preferred partial behaviors. Learning is assumed to be a step-by-step or consecutive estimate of the targeted behaviors through the use of reward and punishment. The most recognized use of Skinner's theory is "programmed instruction" by which the correct order of some behaviors that need to be learned is stated by detailed task analysis.

Behavioral theory had a leading theoretical impact in psychology for approximately a century. Though it was basically a theory of learning, it is also considered a theory of development. In contrast to the maturationists, behaviorists thought that, other than physical maturation, the biggest impacts on human development are found in the environment. Behavioral theorists believe that the individuals' learning is integrated into their collection of experiences, is expanded through the years, and finally integrates development. Ivan Pavlov, John B. Watson, Edward L. Thorndike, and B. F. Skinner are eminent pioneers of behavioral theory.

### Pavlov's Theories

Ivan Pavlov (1849–1936) found the principle of conditioning in his research with animals in Russia. In determining the physiological dogs' reactions to food, he observed that the dogs salivated in response to food and simultaneously ringing a bell. Eventually, the dogs salivated when they heard the bell sound even if food was not present. Relating a novel stimulus with a stimulus that led to a natural response turned out to be the foundation for the behavior termed "respondent or classical conditioning." The principle is that an animal or human being relates a novel stimulus to the initial one and reacts the same way.

### Watson's Theories

John B. Watson (1878–1959) applied the principles of respondent conditioning to child development and learning in the United States. Watson was interested in establishing a scientific system to investigate the way individuals behave under different environmental conditions. He invented the term behaviorism to create a method of investigating learning through observing behavior instead of hypothesizing about the internal structure of the mind. Watson thought that the environment could be manipulated and controlled to have an impact on the individual's learning and development. He established a technology using theories of respondent conditioning.

### Thorndike's Theories

Edward L. Thorndike (1874–1949) was also interested in the scientific research of learning. He tried to describe the procedure about how stimuli are connected to reactions. He established a group of "laws" to clarify the procedure. Primarily essential to the procedure was the *law of effect*. His law of effect principle suggested that:

... responses that produce a satisfying effect in a particular situation become more likely to occur again in that situation, and responses that produce a discomforting effect become less likely to occur again in that situation (Gray & Bjorklund, 2017, p. 108–109).

This law specified that a response is reinforced if it is preceded by an enjoyable effect and is weakened if it is succeeded by a disliking effect. The *law of exercise* specified that the more recurrently a stimulus–response connection is offered, the more it will be preserved. The *law of readiness* recommended that learning is more successful when the nervous classification is prompted by an activity.

Thorndike's *law of effect* was a forerunner to the concept of reinforcement that was the source for Skinner's method to behaviorism. Thorndike's studies also influenced kindergarten teachers because he thought that children had the normal inclination to create habits. He believed that appropriate habits should be reinforced at an early age, whereas bad ones should be repressed during the children's early years in order that they do not have to unlearn them. Habit training became an important component in the kindergarten classrooms during the first quarter of the twentieth century.

### Skinner Theories

Burrhus Frederic (B. F.) Skinner (1904–1990) was an American psychologist and a leading advocate of behaviorism, which views human behavior in relation to reactions to environmental stimuli and prefers the controlled, scientific study of responses as the best straight way of explaining human nature.

Skinner was employed as a clerk at a bookstore when he came across the writings by Pavlov and Watson, which became a defining moment in his life and profession. He became particularly interested in Pavlov's conditioned reflexes and the concepts by Watson, the creator of behaviorism. In 1931 he obtained a doctorate from Harvard University and continued as a researcher until 1936. Then he became a faculty member at the University of Minnesota, Minneapolis, where he wrote *The Behavior of Organisms* (Skinner, 1938). Between 1945 and 1948 he taught psychology at Indiana University, Bloomington, and in 1948 he returned to Harvard University as a professor of psychology

until his retirement in 1974. Skinner had a great impact in the field of psychology. One of his greatest contributions is the Skinner box, which has been implemented in pharmaceutical research to determine how drugs may change animal behavior.

The Skinner Box was also known as the operant conditioning chamber in behavioral psychology. An experimenter used a small box-like apparatus to study and analyze animal behavior. The Skinner box measured responses of organisms (e.g., rats, pigeons) and their arranged interactions with the environment. It has a lever and food in a tray. A hungry animal could get the food released when it pressed the lever. For example, when an animal was placed in the box, it would move all over the place, smelling and searching, and accidentally pressed the bar. Then a food pellet would fall into the tray, which motivated the animal to dramatically increase pressing the bar and continue pressing it until the animal was no longer hungry (Reichling, 2017).

Skinner's developmental theory emerged from his expert and debatable treatment of learning theory in response to applied educational, individual adjustment, and social problems. He thought that learning could be identified by directly observing changes in the children's behavior that are caused by related changes in the individuals' environment (Bower, 1986). In the middle of the 1950s, Skinner invented and improved learning devices such as teaching machines and programmed textbooks, which in the late 1960s produced his Skinnerian principle that was the source for behavior modification. In the 1970s he suggested a proposal for social control through operant conditioning.

Skinner maintained that most behavior is the effect of operant conditioning, where rewards or reinforcers persuaded individuals to replicate their behavior after they came across a parallel condition. In comparison, if individuals are in pain or get negative responses, the behaviors will not be recurring in the future. Rewards strengthen a behavior, while nonrewarding behaviors will be stopped or *terminated* entirely. Behaviorists identified that a reward would be a reinforcer. A *positive reinforcer* increases the behavior that would be repeated every time a comparable condition happens. Positive reinforcers offer individuals a certain amount of enjoyment. The expression negative reinforcement does not mean punishment but the elimination of a disagreeable incentive from the situation. Punishment is based on an unpleasant condition and usually stifles learning. Skinner referred to the consequence on the behavior of several types of reinforcement programs as *continuous reinforcement* and *intermittent reinforcement*. *Continuous reinforcement* rewards individuals every time they display a wanted behavior, while *intermittent reinforcement* rewards individuals for part of the time when they display a wanted behavior. Various programs of intermittent reinforcement cause distinctive outcomes. Skinner thought that an individual's hereditary

and environmental history could be identified by relying on environmental situations and individuals' observable reactions.

Frequently behaviorism is perceived as a theory of learning instead of development. Though, it is indicated that the most effect on development happens when learning occurs in the environment (Bijou, 1975). The behaviorists concentrate on environmental changes to adjust the children's development. The most important difference between the behaviorists and the maturationists is in their disagreement related to the impact of *Nature* vs. *Nurture* on development. Behaviorists consider that *nurture* has the greatest effect on development. They believe that the individual's ability can be altered through several kinds of experiences. They think that educators can control the environment to adjust the children's behavior. The maturationists think that *nature* has the most impact on development. They assume that individuals' hereditary traits determine their capacity for development. This controversy can also be differentiated by considering if *talent* is more prominent than *effort* in relation to what individuals are able to learn and accomplish.

B. F. Skinner adapted previous theories of behaviorism to concentrate on *operant conditioning* (Skinner, 1953/2005). The meanings of Skinner's principles to education are in the practice of applied behavior analysis in education (Bijou, 1977). *Reinforcement* and *prerequisite knowledge* are two concepts that have been derived from this application and assist teachers to construct the children's learning experiences. Teachers of young children use the word "reinforcement" in various practices. At times teachers provide children with a huge amount of drill and practice exercises in a skill. They think that this repetition will "reinforce" the children's learning, because they feel that the more children rehearse a concept or skill, they will recall it. This type of reinforcement is embedded more in the behavioral principles of Edward L. Thorndike, rather than those of B. F. Skinner. A component of Thorndike's theory of learning is the *law of exercise* which declares that the more frequently a response is repeated, the longer it will be reminisced (Thorndike, 1906).

In behavioral theory, reinforcement is a reward that children earn for the right response. Associating the reward to the behavioral response encourages the likelihood of that response to be repeated. A reward can consist of a physical object (such as a toy, food to eat, or social behavior). For example, social reinforcement occurs when teachers clap their hands or give children a positive comment, such as "That's good!" Many early childhood education teachers repeatedly praise children in their classrooms to reinforce their learning.

## Impact of Behaviorism

During the 1920s and 1930s, behaviorism had an effect on early childhood education in habit training, which is E. L. Thorndike's concept to be used with young children. Its impact on the field has decreased ever since. The emphasis on observing children's behavior has continued to be vital. Behaviorism has affected special education including early childhood special education, particularly when working with children who have severe mental disabilities. Special educators have used the behaviorism theory to create training programs for children who have disabilities. More and more early childhood special educators are using constructivist methods in their early childhood special education programs.

## Psychoanalytic Theory

Psychoanalytic theory provides an awareness as to how the unconscious affects an individual's thoughts, feelings, and behavior. It is used to explain human behavior. For instance, the individual's anxiety may have been the result of stressful experiences in their childhood that were concealed from consciousness, but they may trigger difficulties throughout their adulthood. The individual's childhood experiences influence their adult lives and develop their personality. Psychoanalytic theory considers both normal and abnormal human abilities and identifies the permanent effect of early childhood experiences on adult personality and psychological development.

Psychoanalytic theory has had a continuing effect on the (1) development of the field of child development, (2) beginning of therapeutic programs for children, and (3) foundation of early childhood education programs. It focuses on the social-emotional domain. Sigmund Freud and Erik Erikson were two predominant figures in the field. The psychoanalytic theory originated from Freud and concentrated on childhood.

## Freud's Theories

Sigmund Freud (1856–1939) was an Austrian neurologist and the founder of psychoanalysis, which promoted the theory that unconscious motives deal with most of the individuals' behavior. First, he was interested in hypnotism and its use with the mentally ill. Then he switched to free association and dream analysis to create "the talking cure," which became the central components of psychoanalysis. He focused on hysteria, which is presently referred to as conversion syndrome. In the nineteenth century and now, Freud's theories and treatment of his patients were questionable as scientific and medical papers.

Sigmund Freud created psychoanalysis and established the essential mechanisms of social emotional development that results from human instincts. Such instincts include both a positive loving force—*Eros*—and a negative destructive force. He believed that each individual's act can be found in two contradictory basic instincts.

Freud's psychoanalytic theory was based on adult patients. In treating the adults' difficulties, he searched their early development and detected the origins of problems in childhood that continued through adulthood. Freud proposed a series of *psychosexual stages* that people experience as they mature and effectively progress through these stages to obtain a healthy personality. If difficulties or struggles ascend at any stage, the persons can become *fixated* at that stage and spend their strength in managing conflicts of previous stages in adulthood. Knowing the significance of the early years of life help individuals structure their personality and become mature adults. Freud's concept affected psychologists and educators, motivated an interest for *mental health* in early childhood education, and encouraged the existence of child psychotherapy (Freud, 1935).

Freud's concepts reinforced personality development in psychology. The first concept focuses on the significance of the initial years in the children's life in forming their fundamental personality. The next one establishes the children's personality as they cope with a series of continuous struggles, which are associated to a specific developmental stage. For a description of these stages refer to Miller (2016).

Since Freud did not include the influence of culture on personality development, Erik Erikson extended his concepts and emphasized the evolution of the ego and the influence of culture. He increased Freud's five psychosexual stages into a sequence of eight *psychosocial stages*, embracing infancy through adulthood. He acknowledged the struggles inherent in each of these psychosocial stages. After the developing persons solved the struggle at a stage, they moved on to the next one. In addition, he thought that the focal premise in an individual's life is the pursuit for *identity* which extends from becoming aware and acknowledging both one's self and one's society. Erikson's theory has affected the interpretation for adult and child development. Psychoanalytic theory's foremost impact on early childhood education was that it pedagogically legitimized the practice of expressive experiences with young children. Young children's problem solving was essential for their mental health. They could cope and solve difficulties at their personal level through play (Murphy, 1962).

## Erikson's Theories

Erik Erikson (1902–1994), a German-born American psychoanalyst, contributed to professional methods on psychosocial problems. He wrote about social psychology,

individual identity, and the interactions of psychology with history, politics, and culture, which attracted much popular interest. Since Erikson went to art school, in 1927 Anna Freud, the psychoanalyst, invited him to teach art, history, and geography at a small private school in Vienna. Anna observed Erikson's kindness to children at the school and persuaded him to study psychoanalysis at the Vienna Psychoanalytic Institute. Well-known analysts (e.g., August Aichhorn, Heinz Hartmann, Paul Federn) supervised his theoretical studies. He specialized in child analysis and underwent a training analysis with Anna Freud. He became interested in psychoanalysis, received training, and became a psychoanalyst (Friedman, 1999).

His interest in the treatment of children led him to publish his first paper in 1930. In 1933, before finishing his psychoanalytic training, he was elected to the Vienna Psychoanalytic Institute and emigrated to the United States (Editors of Encyclopaedia Britannica, 2020). He accepted a position as a research associate at the Harvard Psychological Clinic. Simultaneously, he began to work on his doctorate in psychology at Harvard University. He was conflicted with the quantitative, empirical focus of Harvard's Psychology Department.

In 1936 Erikson ceased his studies without completing his degree. During the following 20 years, he shifted his interests to human development and carried out research at Yale and Berkeley and also maintained his private psychoanalytic practice (Coles et al., 2002). After 2 years, Erikson started his initial research on cultural effects on psychological development. He studied Sioux Indian children in South Dakota and later collaborated with the anthropologist Alfred Kroeber who was studying the Yurok Indians of northern California. Erikson used the results from these studies to develop his theory that all societies develop cultures to adapt their personality development but that the standard resolutions to parallel difficulties differ with each society.

In 1939 Erikson relocated his clinical practice to San Francisco and in 1942 he joined the psychology faculty at the University of California, Berkeley. Throughout the 1940s, he wrote his book *Childhood and Society* (Erikson, 1950) that describes his views on psychosocial development that is divided into eight stages. In each stage, individuals encounter their personal psychosocial needs that continue throughout old age. The individuals' personality development follows a sequence of dilemmas. Individuals need to be prepared to overpower and be ready for the next developmental stage.

### Psychodynamic Therapy

Psychoanalytic theory inspired psychodynamic therapy. While psychoanalytic theory and modern psychodynamic therapy grew from the same source, there are several

important differences between the two forms of therapy. They are two terms that many people frequently misinterpret and use them interchangeably. The major difference between psychoanalytic and psychodynamic is their foundation. Psychoanalytic theory indicates the perspective and theoretical concepts that Sigmund Freud initiated. Psychodynamic therapy specifies the perspective and concepts Sigmund Freud and his followers implemented. Thus, psychoanalysis is the initial foundation of a psychological perspective which allows psychologists to concentrate on the individual's mind.

Psychodynamic therapy has had a profound impact on both child development and early childhood education. It grew out of a clinical practice instead of a research laboratory. It focuses on personality, although psychoanalysis treats adults' personality problems. Melanie Klein, a psychoanalyst who is recognized for her work in child analysis, took psychoanalytic thinking to an innovative direction (King, 1983; Steiner, 2017). She acknowledged the meaning of the children's beginning childhood experiences in the development of their adult emotional world. In the process, psychodynamic therapy provides an understanding of the effects that their childhood had on their growing personalities. In addition, it provided some major understandings about childhood that researchers can use in studying children. Another theoretical basis that assists psychologists to understand the individual's mind is psychoanalysis, which consists of a particular therapy, theories, and techniques.

### Impact of Psychoanalytic Theory

The expression of feelings as well as ideas is also important for mental health. The expressive arts are important tools that allow young children to express their ideas and feelings. Young children may not have the competence to use language to express all their thoughts and feelings. Various forms of expression—art, music, and movement—allow children to express those ideas and feelings that they cannot express in words (Alschuler & Hattwick, 1947). Children also use play (particularly dramatic play) to communicate their feelings and thoughts. They assume roles to dramatize difficult circumstances, which help them to deal with negative feelings and to settle emotional struggles that they cannot handle in their actual life. Thus, play offers a type of therapy for children (Axline, 1974).

Both Freud and Erikson have made important contributions to early childhood education. Both theorists considered early childhood education to be vital to young children. Both discovered struggles that young children need to resolve to develop into mentally healthy adults. Both Freud and Erikson recommended that early childhood educators assume an active role. Based on Freudian theory, teachers need to provide a mentally healthy environment where children are free to communicate their personal feelings without being

afraid to be criticized. Based on Erikson's theory, teachers need to help children to acquire competencies to reinforce the children's ego. Although the teachers' responsibilities differ for each of these theories, they are essential in the children's lives.

## Ecological Theory

Ecological theory concentrates on the importance of the environment in children's lives and development. Based on this theory, environment influences in every respect impact the children's development. Their environments differ in all situations. The effects are interlaced with the children's regular developing configuration, which may become difficult for children to understand. Ecological theory uses the knowledge of the children's environments to explain, systematize, and clarify their effects. This scheme acknowledges the events in the realm of ecological psychology.

In child development ecological theory considers how environmental components take into account the complete child as an integrated organism. Development proceeds when minor, additional extensions sporadically accumulate to build the children's personality through the involvement in their collected experiences. The holistic theories suggest that a different stimulus or experience complements a fresh element to the children's knowledge. Consequently, each important new experience can change the association of several or all of the current components that influence the personality, shaping the development of the children's independence (Miller, 2016). The major supporter of ecological theory in child development is Urie Bronfenbrenner.

## Bronfenbrenner's Theories

Urie Bronfenbrenner (1917–2005) designed the ecology of human development as a method to know the way the dynamic, developing individuals interacted with the environment. He attempted to know the bond between the direct surroundings wherein children grow and the greater circumstances where the environments are rooted. Bronfenbrenner concentrated on the children's understandings of their environments. It is imperative to recognize those disruptive variations in the children's views of their surroundings. For instance, in an environment (e.g., school, home, peer group sites) considering its physical and material features, children experience an array of activities, roles, and interpersonal associations, which affect their development. The activities refer to the individuals' actions; roles refer to the actions that society requires of the individual's position (e.g., parent, infant, sibling, teacher, friend, coach). Interpersonal relationships relate to the individuals' verbal and nonverbal reactions to each other. Bronfenbrenner (1979) believed that:

1. The phenomenological (internally interpreted or experienced) environment dominates the real environment in guiding behavior.
2. It is folly to try to understand a child's action solely from the objective qualities of an environment without learning what those qualities mean for the child in that setting.
3. It is important to discover how the objects, people and events in the situation affect the child's motivations, and
4. it is essential to recognize the influence on behavior of "unreal" elements that arise from the child's imagination, fantasy, and idiosyncratic interpretations (pp. 24–25).

In understanding the children's behavior, it is important to know their view of the activities, roles, and interpersonal relations that are apparent in that environment. Hence, a fragment of the environment may affect the complete structure as the children build a fresh meaning. Children need to be provided with educational segments that help them understand their environments.

## Impact of Ecological Theory

Bronfenbrenner's theory has impacted the social policy in child development and early childhood education. This impact includes both the classroom and family environments. The family, school, community, and culture are all connected to one another. Frequently, the one method to definitely impact the children's development is to pursue enhancements in the community and society as well as the provisions that several social agencies offer for children's development.

## Discussion/Conclusion

The term “theory” usually describes how individuals acquire cognitive knowledge. The theories discussed in this article suggest that theorists established a set of principles to explain children's learning based on their experiences. Fundamental principles, concepts, and essential components to understand these theories were discussed including maturationist, constructivist, behaviorist, psychoanalytic, and ecological theories.

- *Maturationist theory* focuses on how the biological processes influence the children's development, that is, their genetic course of maturation. Maturationists contend that a common, invariant order of human development can be described and that components within each individual's hereditary framework control the rate at which the sequence unfolds for that child. They describe the children's developmental progression.

- *Constructivist theory* shows how children's new knowledge develops based on their experiences and understanding. Children use their experiences to create knowledge in relation to their biological, physical, and mental stage of development. They assimilate, accommodate, and adjust their knowledge to acquire new understanding. Learning consists of building meaning from critically reflecting on experiences (Torre et al., 2006). Piaget's theory advocates learning through "hands-on" play educational experiences that are representative of their environment, which is a concept that is missing in Bronfenbrenner's theory (Berk, 2021). Piaget's interpretation that cognitive development continues through a universal and invariant series of stages has been challenged. Also, Piaget's theory disregards societal-cultural effects. For instance, societies that believe females are inferior and do not have equivalent rights as males, repress and stagnate cognitive development. Piaget's theory data that were gathered through observations of his own four children, is challenged because of the lack of scientific criteria. Many consider his theory to be unjustifiable because of a small sample size (Peters, 2015). Vygotsky's sociocultural theory transforms the children's interactions into internal self-talk. They use their discourse interactions with adults and peers to learn about culturally meaningful events. He believed that social interactions that foster success in cultures encourage community relationships. However, this ignores the children's biological factors and their effect on the children's development (Berk, 2021). Piaget and Vygotsky stressed the significance of social interactions to promote cognitive development. Both Vygotsky and Piaget considered children to be active and constructive, but they disagreed in their understandings of children's reliance upon adult support. Piaget thought children should be allowed to independently investigate their environment; while Vygotsky thought children should depend on the adults' assistance.
  - *Behaviorist theory* indicates that learning depends on how the children's behavior is modified when using several behavior methods such as rewards, encouragement, repetition, feedback, and reinforcement. Behavior is modified in response to an external stimulus (Skinner, 1914).
  - *Psychoanalytic theory* is a framework that provides a structure to understand the effect of the unconscious on thoughts, feelings, and behavior. According to Sigmund Freud, the founder of the theory, a major basis is driven by unconscious needs where individuals are unaware what causes self-defeating behavior. Freud thought individuals deceive themselves about motives for their behaviors and this self-deception restricts their selection of their behavioral responses. They need to know their unconscious desires and how to resist them to expand the accessible selections. The various psychoanalytic practices have a mutual set of principles: "(1) the assumption that that all human beings are partly motivated by unconscious feelings and wishes, (2) a focus on facilitating awareness of unconscious motivations in order to increase choice, (3) an emphasis on exploring how we avoid painful or threatening feelings, (4) an assumption that we are ambivalent about changing, and (5) an emphasis on using the therapeutic relationship as an arena for exploring clients' feelings and self-defeating patterns" (Safran & Gardner-Schuster, 2016, p. 339). Erikson's psychoanalytic theory, like Bronfenbrenner's ecological theory, acknowledges that human development transpires over a lifetime and is influenced by cultural-societal factors in the children's culture and society (Berk, 2021). On the other hand, Erikson's theory is based on his own observations and clinical practice, which socio-economic factors may cause it to be biased. It lacks evidence from quantitative experimental studies to gain insight for each of Erikson's stages (Peters, 2015).
  - *Ecological theory* is Bronfenbrenner's ecological systems theory that views child development as a complex system of relationships affected by multiple levels of the surrounding environment, from immediate settings of family and school to broad cultural values, laws, and customs. Bronfenbrenner's (1974) view resembles Lev Vygotsky's sociocultural theory where the children's environment is explicitly or implicitly a critical structure in their development. Bronfenbrenner's theory embraces the families' environments and acknowledges their energetic nature. It increases the professionals' perception of the intricacies of the families' responsibilities, which can help educators develop a productive and effective relationship with the families (Peters, 2015). On the other hand, although Bronfenbrenner classified his theory as a *bioecological* representation, it lacks a thorough analysis about the specific biological contributors to the children's development (Berk, 2021). Bronfenbrenner's theory, like Erikson's theory, has a dynamic nature, which considers the impact culture and societal factors have on the children's development (Peters, 2015).
- The theories share characteristics, but they also have unique ones that distinguish them from each other. All of them have both likenesses and variations among each other, although all addressed the children's individual differences, learning, and environment. They show how the children's learning progresses. For example, children remember and acquire knowledge that they use to construct new knowledge. The environment affects the children's learning method (socio-cultural theory) that may change their behavior (behaviorist

theory). Learners are actively engaged, which is basic for most theories. Such active engagement can consist of attempting to comprehend, think, manage information, cooperate with others, manage their emotions throughout learning, and receive corrective feedback, which is part of behaviorist theory. Examples of active engagement include:

- Children are active learners in behaviorist theory because they use feedback to correct their responses.
- Understanding relates to all theories. Children process and understand the information to reflect and consider sociocultural matters.

The theories that have been reviewed represent the theorists' insights on child development. Developmental theories offer early childhood education researchers and educators the information about the young children's interests and capabilities at various age periods. Such information provides descriptive statements that help researchers and educators identify the children's abilities and developmental norms that are consistent with their age. A norm is simply an average of the children's characteristics, but it is merely an approximation for each child. Children may be the same in many respects, but they also differ from each other in major ways. Consequently, children should be considered separately and be assessed based on developmental norms before beginning a research or educational plan and establishing expectations (Saracho, 2020).

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