Cognitive development theory

Psychology, Psychotherapy

Jean Piaget was born in Neuchatel, Switzerland on August 9, 1986 to Arthur Piaget and Rebecca Jackson. At a young age, he displayed great fascination for Biology, his intellectual love. Jean Piaget, at the age of 10 published his first article, which described the albino sparrow he observed. Between the ages of 15 and 18, he published several more articles and most of them are mollusks. Jean Piaget was especially drawn to epistemology, the branch ofphilosophyconcerned with the origins of knowledge. He studied natural sciences in the University of Neuchatel and gained his PH. D there.

Piaget then worked for a period of at Bleur’s psychiatric clinic in Zurich where he became interested in psychoanalysis. He studied clinicalpsychologyin the Sorbome University in Paris in the year 1919. In 1930s, he was employed at the Binet Institute where his job was to develop French versions of questions on English intelligence tests. He became intrigued with the reasons children gave for their wrong answers on the questions that required logical thinking. He believed that these incorrect answers revealed important differences between the thinking of adults and children. In 1923, he married, Valentine Chatenay.

They had three children, Jacqueline, Lucienne and Laurent whose intellectual development from infancy to language was studied by Piaget. In 1929, he accepted the post of Director of the International Bureau ofEducationand remained the head of his international organization. In 1955, he created and directed until his death the International Center for Genetic Epistemology. Piaget was productive his entire lifetime, he published 30 books and more than 200 articles. Cognitive Development Theory: Cognitive theory is concerned with the development of a person's thought processes.

It also looks at how these thought processes influence how we understand and interact with the world. The foremost cognitive thinker was Jean Piaget, who proposed an idea that seems obvious now, but helped revolutionize how we think aboutchild development: Children think differently than adults. It proposes as a result of biological maturation and environmental experience. It views intelligence as the ability to adapt to all aspects of reality, that within the person’s lifetime, it evolves through a series of qualitatively distinct stages.

Organization- involves in the integration of all process into one overall system. It refers to the organism’s innate capability to coordinate particular observations into complex systems of coherent knowledge. Adaptation- it is the organism’s response to theenvironmentin a way it could meet balance. (Equilibrium) Dynamics ofPersonality: Schema- is the category of knowledge that helps us understand or interpret the world. It is the basic cognitive unit. In this complex concept involves either mental organization, or a child’s conceptualization of a specific situation, and behavior that can be seen.

Assimilation- is the “ taking in,” or incorporation of a new object, experience, or concept into an existing set of schemes, that is, to the child’s present cognitive structure. It is the process of taking in new information into our previously existing schemas is known as assimilation. The process is somewhat subjective, because we tend to modify experience or information somewhat to fit in with our preexisting beliefs. In the example above, seeing a dog and labeling it " dog" is an example of assimilating the animal into the

child's dog schema. Accommodation- it is the adaptation of the current knowledge to another new experience.

It involves altering existing schemas, or ideas, as a result of new information or new experiences. New schemas may also be developed during this process. It is also the process by which children change their cognitive structures to deal with new objects and situations. Equilibrium- assimilation and accommodation are constantly working together to produce changes in a child’s conceptualization of the world and reaction to it. It gives state of balance to assimilation and accommodation. Growth Development: The Sensorimotor stage it ranges from birth to 2 years. In this stage intelligence is primitive in form.

It is the coordination of sensory information and motor activity. in this stage, infants construct an understanding of the world by coordinating experiences (such as seeing and hearing) with physical, motoric actions. Infants gain knowledge of the world from the physical actions they perform on it. The six substages of Piaget’s Sensorimotor stage are Reflex activity from 0-1 month old which builds knowledge through reflexes. Primary Circular Reaction from 1-4 months. It is the infants repeat pleasurable behaviors that first occurred by chance (such as sucking). Secondary Circular Reactions it is from 4 to 8 months.

In this stage infants become more interested in the environment and repeat actions that bring interesting results and prolong interesting experiences. Coordination of Secondary Schemes from 8-12 months. In this stage, the behavior is more deliberate and purposeful as infants coordinate previously

learned schemes and use previously learned behaviors to attain theirgoals(such as crawling across the room to get a desired toy). Tertiary Circular Reactions from 12-18 months. In this stage infants show curiosity as they purposefully vary their actions to see results. They use trial and error in this stage.

Mental Combinations from 18-24 months. Since toddlers have developed a primitive symbol system. To represent events, they no longer are confirmed to trial and error to solve problems. They represent objects through action already. Preoperational stage ranges from 2-7 years. In this stage the child already begun to speak. Piaget noted that in this stage children do not yet understand concrete logic and cannot mentally manipulate information. There are 3 kinds of techniques Piaget use to study this stage; first is the Egocentrism it is the children’s assurance that the world thinks like they do.

The best technique that Piaget uses to this is the 3 dimensional play of mountain scene. Which best describe as “ Three Mountain task” when children are asked to choose a picture that showed the scene they had observed. Most children are able to do this with little difficulty. Next, children are asked to select a picture showing what someone else would have observed when looking at the mountain from a different viewpoint. Invariably, children almost always choose the scene showing their own view of the mountain scene. According to Piaget, children experience this difficulty because they are unable to take on another person's perspective.

Next is Animism it is the tendency to attribute life to object that are not biologically alive. It is the belief that inanimate objects are moved through

will and spirits. Last is Artificialism it is the belief that things are created by human beings. Concrete Operational Stage from 7-11 years. During this time, children gain a better understanding of mental operations. Children begin thinking logically about concrete events, but have difficulty understanding abstract or hypothetical concepts. Logic Piaget determined that children in the concrete operational stage were fairly good at the use of inductive logic.

Inductive logic involves going from a specific experience to a general principle. On the other hand, children at this age have difficulty using deductive logic, which involves using a general principle to determine the outcome of a specific event. Reversibility one of the most important developments in this stage is an understanding of reversibility, or awareness that actions can be reversed. An example of this is being able to reverse the order of relationships between mental categories. For example, a child might be able to recognize that his or her dog is a Labrador, that a Labrador is a dog, and that a dog is an animal.

In this stage, children became more objective and less egocentric. Formal Operational Stage from 12 years and above. During this time, people develop the ability to think about abstract concepts. Skills such as logical thought, deductive reasoning, and systematic planning also emerge during this stage. Piaget believed that deductive logic becomes important during the formal operational stage. Deductive logic requires the ability to use a general principle to determine a specific outcome. This type of thinking

involves hypothetical situations and is often required inscienceandmathematics.

Abstract thought while children tend to think very concretely and specifically in earlier stages, the ability to think about abstract concepts emerges during the formal operational stage. Instead of relying solely on previous experiences, children begin to consider possible outcomes and consequences of actions. This type of thinking is important in long-term planning. In earlier stages, children used trial-and-error to solve problems. During the formal operational stage, the ability to systematically solve a problem in a logical and methodical way emerges.

Children at the formal operational stage of cognitive development are often able to quickly plan an organized approach to solving a problem. Applicability of the Theory: Piaget did not explicitly relate his theory to education, although later researchers have explained how features of Piaget's theory can be applied to teaching and learning. Piaget has been extremely influential in developing educational policy and teaching. For example, a review of primary education by the UK government in 1966 was based strongly on Piaget’s theory. The result of this review led to the publication of the Plowden report (1967).

Discovery learning – the idea that children learn best through doing and actively exploring - was seen as central to the transformation of primary school curriculum. 'The report's recurring themes are individual learning, flexibility in the curriculum, the centrality of play in children's learning, the use of the environment, learning by discovery and the importance of the

evaluation of children's progress - teachers should 'not assume that only what is measurable is valuable. ' Because Piaget's theory is based upon biological maturation and stages the notion of 'readiness' important.

Readiness concerns when certain information or concepts should be taught. According to Piaget's theory children should not be taught certain concepts until they have reached the appropriate stage cognitive development. Within the classroom learning should be student centred a accomplished through active discovery learning. The role of theteacheris to facilitate learning, rather than direct tuition. Therefore teachers should encourage the following within the classroom: o Focus on the process of learning, rather than the end product of it. o Using active methods that require rediscovering or reconstructing " truths". Using collaborative, as well as individual activities (so children can learn from each other).

Devising situations that present useful problems, and create disequilibrium in the child. o Evaluate the level of the child's development, so suitable tasks can be set.

Strengths:

- Piaget’s Theory remains a dominant force in developmental psychology.
- It has spawned tremendous amount of empirical research and additional discoveries that increased our understanding about cognitive development.
- He changed how people viewed the child’s world and their methods of studying children. His ideas have been of practical use in

understanding and communicating with children, particularly in the field of education, and are still used in the present age.

Weaknesses:

- Piaget’s theory underestimated children’s ability and competencies.
- Because Piaget concentrated on the universal stages of cognitive development and biological maturation, his theory wasn’t cross-culturally valid, since the social setting andculturehas an effect on cognitive development. Some of his sample in his experiments was biased that it cannot be generalized to children from different cultures.