

The two main theories of cognitive development were put forward Jean Piaget and Vygotsky. Piaget stated that all babies are born with similar biological equipment such as the brain, senses and reflexes. This is the more natural rather than nurture approach. Babies develop schemas, which represents everything that a child knows and builds up reflexes. Piaget identified a four stage model of cognitive development. Stage one is the sensory motor stage. This is from zero to two years. This is where the child's knowledge is limited to what they can experience through their senses and to see what they can do. The second stage is the pre-operational stage. This is from two to seven years. This is where the child can now use symbols, but their concepts are general. It lacks logic. (daddies car) The third stage is the concrete operational stage. This is from seven to 11 years. This is where the child can now use logical and mental rules, but only in the context of concrete rather than abstract information. (mary,susan and anne) The fourth stage is the formal operational stage. This is 11 years then onwards. It is where abstract and systematic thoughts become possible. Note that a new stage can develop only when the child's brain has matured to the point of readiness. Also when new information cannot be assimilated to the child thinking.

Vygotsky believes that cultural input was essential in cognitive development. His approach was more nurture rather than natural. He suggested that intellect consists of elementary and higher mental functions. He stated that elementary functions were developed through experience, but to transform them into higher functions would require cultural influences. Vygotsky also said that social support was important. The instructor and a learner will work together, but in time, the learner would progress without help from the instructor. Vygotsky also stated that the role of language was important. He said that after the age of two, the child begins to use external symbols such as language to assist problem-solving.

Piaget's theory, however, has been criticised for underestimating infants. Bower shows that if an object disappeared behind a screen, and a screen was lifted, babies at the age of five months will show surprise if the object was not there.

Furthermore, Hughes criticised Piaget's preoperational stage of testing. He said that the three mountain task did not resemble a child's everyday experiences, so he conducted the hiding from the policeman task, which was more realistic.

Piaget was also criticised for demand characteristics. Testing the concrete operational stage, he used the same question after transformation, this for the child implies a different response where the answer is still the same. This makes the child behave in a predictable way.

Another witness is for his methodology, during the concrete operational stage he deliberately transformed the display, making the child's response affected. So Donaldson made the transformation accidental so the child focuses on the actual transformation. The source of making this accidental was a teddy bear, which in fact distracted the children.

Another criticism was that if a child is not biologically ready to move onto the next stage, then practice should not make a difference, however Bryant trained children under seven to cope with using mental rules. In spite of these weaknesses, Piaget's approach and theory should not be overlooked. He produced the first comprehensive theory of children development. It has also generated research and is used in educational practice.