

“Critically Evaluate Piaget’s Stages of Development”

This essay will be a critical evaluation of Jean Piaget’s stages of developments. It will discuss the theorists Bower, Wishart, Baillargeon, DeVos and Borke and the experiments they carried out to support or criticise Piaget’s theory on how a child develops from birth to adulthood.

Jean Piaget (1929) carried out research into the development of children and how they think. Prior to this research it was believed that children thought in the same way as adults but they had less knowledge because they had not yet had enough experiences or had been taught. Piaget called this research ‘genetic epistemology’. He discovered, through research on his own children, that they start life with basic reflexes called innate schema, a pattern of behaviour which acts as building blocks to further knowledge, such as sucking, grasping and crawling. Children then used these schema to develop their understanding of their environment. Therefore it was not enough to teach children by practice or repetitive learning, a child had to be at a certain stage of development to learn new ideas. Cognitive development is also determined by maturation, the process of physical growth which is influenced by genetics and environmental factors. All children proceed through these stages in the same sequence without skipping any or reverting back to earlier stages, therefore they are invariant. These stages are also the same for everyone irrespective of their social background or culture and are therefore universal.

Children then develop using invariant cognitive structures such as assimilation, accommodation and equilibration. Assimilation is where a new object or idea is understood using the existing schema. For example a child sees a plane and associates it with a bird. For the child to then understand that a bird is an animal and the plane is a machine, a state of disequilibrium occurs. The child has to rethink the idea so this information is then modified through accommodation. Assimilation and accommodation work together to form the basis of cognitive development. As they work, thoughts and processes are developed. However, this would not happen if contact with the environment was not made as existing schemas would be used and the mind would not accommodate new ideas and experiences. So, to develop new schema, the child needs to be able to interact and perform different actions or operations within its environment. This could be a physical or mental operation, such as counting in your head (mental) or using your fingers to count (physical).

There are four cognitive structures according to Piaget (1963). The first is the sensorimotor stage (0-2 years). Infants learn through touching and feeling objects, and also by using their motor skills. In the child’s first month they practice the reflexes that they are born with, such as sucking, until they function effortlessly. The child is not aware of anything outside of themselves and anything they come into contact with is regarded as part of them. This is known as egocentricity. Between four and eight months old, the child then extends their reflexes to develop coordinating schema, such as looking and grasping. Behaviour such as waving their hands in front of their eyes is repeated because they find it satisfying.

Infants at this stage will look at a toy in front of them and will try to grasp it. However, once the toy is hidden, the baby thinks it has 'disappeared', even if it is partially covered, and therefore loses interest in it and will not actively search for it. Piaget believed that object permanence (where a child realises that an object continues to exist even though they cannot see it) is not mastered until the child reaches eight months old. However, a rolling car task was shown to three to four month old infants where they watched a short or a tall carrot slide along a track. The track's centre was hidden by a screen with a large window in its upper half. The short carrot was shorter than the window's lower edge and so did not appear in the window when passing behind the screen; the tall carrot was taller than the window's lower edge and hence should have appeared in the window but did not as the glass was opaque. The infants looked longer at the tall than at the short carrot. They expected the tall carrot to appear in the screen window and were surprised that it did not (Baillargeon and DeVos 1991). This suggests that children develop object permanence at an earlier age than Piaget thought.

The second stage of Piaget's stages of development is the Pre-Operational stage (2-7 years). Children remain egocentric at this stage; they can still only see things from their own point of view. Piaget and Inhelder (1956) carried out an experiment using a mountain range, with different size mountains, each having something different on the top. A doll was placed in one location while the child was seated at another location. The child was allowed to explore the model and then shown different pictures of different views and asked which picture represented the view as the doll sees it. Four year olds showed only the view they could see themselves. Some of the six year olds showed awareness but they often chose the wrong picture. Only the seven and eight year olds consistently chose the correct picture. According to Piaget, children under seven cannot put themselves "in other people's shoes". However, Hughes (1975) created a game where the child hid a doll from a policeman doll using two walls to form a cross. The children were asked to put the doll where the police doll could not see it. Hughes explained to the children where they had gone wrong, whereas Piaget didn't give them chance to ask questions. Very few children made many mistakes as this was more relevant to children as they had some experience of 'hiding' games rather than using mountain ranges that most children may not have seen before (Donaldson, 1978).

Children at this stage also find it difficult to conserve; the ability to understand that quantity such as liquid, number, length and substance do not change even though physical changes may take place. Piaget tested this by showing the child two identical beakers with the same amount of liquid inside. The child agrees that they are indeed identical. The content of one of the beakers was then poured into a taller and narrower beaker. The child is only able to recognise the different sizes of the beakers and therefore thinks that the quantity of liquid has also changed although they physically saw the liquid being poured into the second beaker. However, Rose and Blank (1974) suggested that the manner in which the children were being asked the question about the experiment, may have influenced the answers the child gave. They found that asking two questions, confused children and they felt that they were expected to give a different answer. The children were asked whether the liquid in the two different beakers was the same, at the end of the experiment. They received more correct answers.

The third stage in Piaget's theory is the concrete operational stage (7-12). Children at this stage can now reason logically and organise thoughts clearly but they are still unable to think abstractly and have difficulty with transitivity tasks. For example, 'Clare is taller than Susan, and Susan is taller than Mary. Who is taller, Clare or Mary?' They can solve this problem by using concrete or real objects such as dolls. Conservation tasks are mastered and children can demonstrate reversibility, for example, they recognise that a ball of clay which is changed from a ball shape to a sausage shape is the same and can be changed back to a ball. They also understand seven types of conservation; the conservation of liquid, number, mass, length area, weight and volume. At this stage, egocentrism diminishes.

The last stage in Piaget's theory is the formal operational stage (13 – adulthood) although Piaget did point out that some adults never reach this stage. Adolescents are able to think more abstractly and logically as well as thinking theoretically. They are able to devise plans to solve problems and systematically solve them. Inhelder and Piaget (1958) carried out a test where adolescents were given five beakers containing clear liquid. Four of them were 'test chemicals' and one was an 'indicator'. When the proper combination of test chemicals was mixed with the indicator, it turned yellow. Pre-operational children carried out this test randomly, concrete operational children were more systematic but still failed to try every combination. It was only formal operational children who considered all the options and systematically tested each option. They also recorded the results and tried to draw conclusions from the test.

Piaget expected children to be able to explain principles that they understood but were unable to articulate because of language or communicative difficulty. He also did not take into account the cultural differences in children that could affect the age at which they enter each stage and his experiments were small and lacked control (Bryant 1995). Piaget also admitted himself that the stages were rigid and that children develop at a gradual and continuous pace.

To conclude, Piaget's theories on stages of development have been widely recognised by other theorists as having an impact on education and how it changed the traditional view of the child; however, there has been debate on whether the ages specified were correct (Brainerd, 1978 and Flavell, 1985).

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