

A brief discussion about the cognitive theory

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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 interrelate with the world. One of the principal cognitive theorists was Jean Piaget, who proposed ideas that revolutionised how we think about child development and whether children think differently than adults. This essay will introduce Jean Piaget as a theorist, prior to discussing Jean Piaget's theory 'stages of children's intellectual development' and explore the experiment Piaget carried out to obtain his theory.

Furthermore this essay will examine whether the research method for Piaget's experiment was able to conclude using a different method to the one used. Jean Piaget was born in Switzerland in 1896, at the age of 10 years Piaget had his work on Molluscs published and after receiving his doctoral degree aged 22, formally began a career in zoology, but Piaget regarded his central interest in epistemology (the study of knowledge and how we understand the world we live in). In 1920, Piaget began working on some of his first intelligence tests by observing children and asking them simple questions.

Piaget focused his attention on the origins of knowledge as they manifest in children, he was not interested in the amount of information children possessed but in the ways their thinking and inner representations of outer reality changed at different stages in their development, becoming increasingly intrigued by some of the replies he got from the children after he had asked them questions. Piaget observed children of the same age tended to make similar mistakes and younger children followed different logical rules from older children, believing children's errors were predictable

and could be described in terms of stages of development theory, (Eysenck, 2006). This suggested, errors made at certain ages formed stages of development and that these stages formed a sequence, changing the child's thoughts as they pass through the stages. Babies are born with similar biological equipment, senses, the brain and reflexes such as sucking and grasping, at the start of life infants have a set of basic reflexes and also a set of natural schema.

Piaget introduced schema, meaning a psychological structure representing everything an infant/child knew about an object or an action built and developed as a result of interactions with the environment and new experiences leading to new schemas being developed. A schema describes both mental and physical actions involved in understanding and knowledge, helping the subject to interpret and understand the world, Piaget believed schemas included both a category of knowledge and the process of obtaining that knowledge, as experiences happen the new information is used to modify, add or change previous/existing schemas.

Piaget proposed two ways in which this may happen, by assimilation, which is the process of taking in new information into previously existing schema, this may be somewhat subjective as we tend to modify information or experiences to fit into pre-existing beliefs. Secondly Piaget believed this may happen by accommodation which is another part of adaption and involves changing or altering our existing schemas or ideas in light of new information or new experiences, this process may also develop into new schemas, (Roth, 1991).

Piaget believed all children strike a balance between accommodation and assimilation, which is achieved through equilibrium. As children progress through stages of cognitive development it is important to maintain a balance between applying previous knowledge (assimilation) and changing behaviour to account for new knowledge (accommodation), equilibrium helps explain how children are able to move from one stage of thought into the next, (Cardwell et al, 2000).

This suggests Piaget's theory takes the view that children learn by constructing their own knowledge when placed in novel situations, constructing new schemas by allowing the child to work it out for themselves as long as the child is ready, otherwise the child would not fully understand. It was Piaget's observations lead him to think that children require disequilibrium to reach their new milestones in maturity and that each of the milestones within the cognitive development represented a different stage of the child's life.

Piaget believed that everyone passes through an invariant sequence of four qualitatively distinct stages, these stages could not be skipped or be reordered and these stages are passed by each individual in exactly the same order, although some variability in the ages of the children at each stage were noted. The four stages are: Sensorimotor, seen in children from birth until around the age of 2 years, Preoperational, from the age of 2 - 7 years, Concrete Operational, 7-11 years and Formal Operational from 11 years until adulthood.

Each of the stages have major cognitive tasks which require accomplishment, in the sensorimotor stage the mental structures are mainly concerned with the mastery of concrete objects, at this stage children experience the world through senses and actions (looking, touching, and mouthing), children at this age were noted to lack the awareness of object permanence (if the child cannot see an object, it therefore must not exist), at around 9 months children began to exhibit memory for objects they cannot see.

The mastery of symbols takes place within the preoperational stage; children represent things with words and images but lack logical reasoning. Children at this age have an ability to pretend and are egocentred (unable to reason or take on another individual's point of view). In the concrete stage, children learn mastery of classes, relations, numbers and how to reason, children think logically about concrete events, grasping concrete analogues and performing arithmetic.

Children who are given concrete materials begin to grasp that a given quantity remains the same no matter how its shape changes (a change in shape does not mean change in quantity) this concept was called Conservation. Piaget's final stage is the formal operational stage and deals in the mastery of thought, individuals are now said to be capable of abstract reasoning with the potential for mature moral reasoning, expanding from purely concrete to encompass abstract thinking which involves imagined realities and symbols.

It seems education is therefore a natural process which develops spontaneously; it is not acquired by listening to words, but learned through actions and experiences within the individual's environment. Piaget's other key concepts within his research are Classification, the ability to group objects into groups containing similarities, an example of this is; children shown a cat and told that it is a cat, will recognise a different cat as being one of the same type as the previous, with similarities of colour, size and shape.

Children do not recognise that there are different types/breeds of cats, children are unable to distinguish between different breeds of cats so therefore unable to identify that each cat is individual; Piaget believed this was down to learning about class inclusion which uses sub classes to describe certain attributes of each individual belonging to the classification group. Another key concept of Piaget's work is decentration; this is the ability to move from one classification to another with the ability of recognising the differences in the groups.

Piaget is much admired and his research used within the educational establishments around the world. Unfortunately, over time other theorists have uncovered evidence suggesting contradictions over Piaget's findings, such as subsequent studies have revealed infants younger than Piaget previously suggests, appear to understand object permanence and with findings such as these chipping away at Piaget's theory, his work still continues to attract interest and stimulate further research.

From his observations of his own children to his four stage theory, Piaget's central insight was that children actually think in a fundamentally different way than adults do. They do not have less knowledge, experience or less processing powers than adults, infants thought content is simply different to that of adults. Piaget used observations and simple questions to obtain the answers to his theories.

I believe that Piaget used the correct method to obtain his research answers, for children of certain ages communication between the child and the researcher is difficult because children cannot efficiently communicate in a language that is simply understood, so observations are the only way of interpreting a child of certain ages, However after a child has began speaking, simple questions could be asked and the answer interpreted by the theorist, some disabilities may cause problems of interpreting answers, conditions affecting hearing and speech may impair the theories results, with a lack of understanding, misinterpretation and clear responses being affected, so I believe that Piaget completed his research in the only way available.

Piaget's work began with observing his own children and then his social class friends children (all subjects from the same social class as himself), some theorists believe that this makes his work bias by not representing a broader range of children as subjects from different social classes and environments, which is something that could make Piaget's work flawed and affect his findings. I do not believe that the experimental observations could have been changed to another form of experiment, because of the lack of

understanding between the infant and peer although, different social groups of children could be observed for the results to be more correct.