Theory of cognitive development and children

Psychology, Psychotherapy

Discuss the concept of ' constructivism' (from Piaget's theory of cognitive development). Use a mix of theory and research to back up your ideas about whether or not the child constructs his/her own development. The understanding of how children comprehend the world around them has been a highly researched part of cognitive development inPsychology. Jean Piaget was one of the first researchers to develop a theory suggesting that children understand the world around them by actively seeking information from theirenvironment, and continuously expanding their knowledge by organizing, adapting and assimilating this information Berlin, (1992).

Piaget's theory known as constructivism theory, has undergone a high level of scrutiny, centring on the understanding of children's cognitive abilities, and neglecting the intelligence of assistance. Through analysing current research this paper aims to explore Piaget's constructivism theory. Children's development has been a topic of interest since the 1920's, following the creation of an intelligence test developed by Piaget and his colleagues where Piaget discovered that younger children made systematic mistakes from those of older age, consequently proposing that children change qualitatively with age, Bremner et al. (2012). Studying his own children Piaget formed the constructivism theory arguing that children built their knowledge through organization (children organize their information in schemas, assimilation (using pre-existing information) and adaptation and accommodation (adapting to the condition of the environment), by searching for information from their environment to expand their understanding of the world, Beilin, H. (1992). Piaget proposed children take an active role in their cognitive development, and independently construct the world around them.

He proposed that children face different problems as they move through the stages, and it is the solving of these problems that teach them and assist them in learning and developing their thinking. The knowledge they receive from solving these actions are not imitated or innate, instead are ' actively constructed' by the child. In this sense, Piaget suggests that thought is obtained from action, when actions are internalised, ones thinking increases. The child is influenced by their previous ideas and new experiences, and based on this they construct new ideas.

Piaget suggested that cognitive structuring, actions representing specific ' acts' of intelligence, is developed and linked to stages ofchild development. Piaget proposed children undergo four developmental stages where cognitive structuring occurs. These stages are sensorimotor stage (from birth to two years of age), preoperational stage (from three to seven years of age), concrete operations stage (from eight to eleven years of age), and formal operational stage (from twelve years of age until adulthood) Piaget, J. & Inhelder, B. (1969).

In the first stage, sensorimotor which Piaget divided into six sub-stages, intelligence is demonstrated through basic motor skills such as sucking to experimenting with external objects by using schemas in order to reach their goal.). Piaget suggested that until the age of seven months (during their third sub-stage of sensory motor stage), infants do not understand that the world consists of permanent objects. He argues that if at this stage you hide an object in front of the infant they show disappointment or simply stop looking for the object as if the object disappeared.

Not until infant reaches eight months (the fourth sub-stage of sensory motor stage), does the child start to look for hidden objects, which shows that at this stage infants start to understand object permanence, Piaget, J. & Inhelder, B. (1969). One of Piaget's studies that received a great deal of attention is the A-not-B error study, which he explains that if an object is hidden in front of an infant (location A); at around eight months of age they would reach toward the hidden object.

However if the object is moved to a different location (location B) infants until twelve months of age would still reach for the first location. Thefailureto reach the correct location Piaget explains as egocentrism clamming that at this stage children fail to see the situation in a different point of view thinking that because the object was placed in the first location that that object would permanently be there, Piaget, J. & Inhelder, B. (1969). Testing Piaget's A-not-B theory Kaufman and Needham (1999) tested 40 six and a half month infants.

Using habituation technique they concluded that infants looked longer when the objects were moved. Contrary to Piaget's findings, they suggested that infant special orientation development happens at much earlier age, arguing that Piaget underestimated infant ability. The second and third stage Piaget proposed are the preoperational and concrete stage at this stage children understand object permanence (that objects continue to exist even though they cannot ee them) , spatial layouts and also the use of language for problem solving starts during the preoperational stage through constructing existing information and eventually expanding this information. However until the age of seven children still see the world from their egocentric view

(i. e. refusing to see the world from a different point of view). At the concrete stage children are able to solve visual problems such as lining in order dolls from the tallest to the shortest, however they are not able to solve mental problems, Piaget, J. & Inhelder, B. 1969). The fourth and last stage that Piaget proposed is the formal stage. At this stage Piaget argues that children can think abstractly, consider possibilities and formulate hypothesis. Piaget's formal operational stage has been criticised by researchers such as Kuhn et al. ,(1982) who discovered that although constructing knowledge seems to be sufficient for the sensory-motor and preoperational stage, it does not seem to be the same case with the concrete and formal operational stage since not all adults show formal operational thought.

There have been numerous studies conducted which provide support for constructivism theory. Guthrie et al (2004) compared different instructional methods for student's reading skills, these methods included a strategies instruction approach, and an approach combining strategies instruction and constructivistmotivationtechniques, such as incorporating student choices, collaboration, and hands-on activities.

The constructivist approach, called CORI (Concept-Oriented Reading Instruction) produced a high student reading comprehension, motivation, and cognitive strategies (Guthrie et al, 2004). Similarly Jong Suk Kim (Kim, 2005) found that when students were taught using constructivist-teaching methods, they achieved higher levels in academia compared to using traditional teaching methods. Students also voiced preferring constructivist methods over traditional ones.

However, one of the biggest criticisms of Piaget's theory has been the ignorance of social and cultural influences on child development. Contrary to Piaget, who believed that allowing children to experiment and express their own ideas enabled their constructive processes to develop knowledge, Vygotsky's (1962) sociocultural theory proposed that learning and development are derived collaboratively from socialisation andeducation. He argued that simple knowledge such as perception and attention are mental abilities are innate, and although children actively developed their thought rocesses through the environment, they could also, with assistance from others, reach a higher level/stage of cognitive development than the stage they are at when they perform alone. Vygotsky named this ' the zone of proximal development', "…the distance between the actual development of a child as determined by the independent problem solving, and the level of potential development as determined through problem solving under adult guidance or in collaboration with more peers Vygotsky (1978)" Vygotsky's (1978, p. 56).

Therefore, although his theory is similar to Piaget in that he believes cognitive development is restricted to a limited range at a certain age, he believes that with the aid of social interaction, for instance the help of a mentor, an individual/child can understand concepts and schemas that they would be unable to comprehend alone. In this sense it questions the extent to which children construct their own environment and developments as children's knowledge may develop at a much faster rate through interaction and guidance of more experienced peers , such as older siblings, parent or teachers, Gauvain and Cole (1997).

Evidence supporting Vygotksy can be seen in a study by Gauvain et al. , (1997). He found that if you test a group of nine year old pupils with a number of problem solving skills (at Piaget's concrete operational stage) and test a group of twelve year old pupils (at Piaget's formal operational stage), and not assist them, they would show the same level of intelligence, concluding that knowledge is not simply constructed through experience but also through techniques taught by others.

Similarly, Mayer (2004) proposed that " a recent replication is research showing that students learn to become better at solvingmathematicsproblems when they study worked-out examples rather than when they solely engage in hands-on problem, Mayer (2004, p. 18) Conclusion Piaget's four-stage knowledge development theory is highly researched criteria within developmental Psychology. The use of constructing previously learnt information into new information through experience seems to be more effective at an early age. His theory seems to underestimate the children's ability and knowledge; however it overestimates adolescence ability.

It also is unarguable that constructivism theory fails to acknowledge the social effects that have been shown to play a crucial part in knowledge development. However it is not to say that Piaget's constructivism theory should be discarded altogether, since Piaget was the pioneer in introducing clinical methods to explore children's thoughts. This remains the fundamental theory used in child development research. Moreover, as mentioned above, Piaget's constructivism theory is highly used in schools,

guiding teachers in how to enable children to explore their own environment through expression and experimentation.

In conclusion, knowledge development could be acquired through both construction of ones own experiences, and the help of more experienced peers. References 1. Beilin, H. (1992). Piaget's enduring contribution to developmental psychology. Developmental Psychology, 28, 191-204. 2. Bremner A. et al. , (1986). Developmental Psychology. Developmental Psychology. 3. Bodner, Gg. M. (1986). Constructivism a theory of knowledge. Journal of Chemical Education, 63, 873-878. 4. Gauvain M. and Cole. M. (1997). Readings on the development of children. W. H.

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