

Concrete operational stage essay sample

[Literature](#), [Russian Literature](#)



**ASSIGN
BUSTER**

The Concrete Operational Stage Jean Piaget was a psychologist who was originally from Switzerland. He found five consistent systems within certain broad age ranges. The five stages are: 1. Sensorimotor stage-ages 0-2 2. Preoperational stage-ages 2-7 3. Concrete operations stage-ages 7-11 4. Formal operations stage-ages 11-16 5. Late formal operations stage-ages 16 to adulthood In this paper I have concentrated on school age children, ages seven to eleven who are in the concrete operational stage.

At around the age of seven years, a child demonstrates characteristics of a major shift in thinking. At this point the child is moving into Piaget's third major period of cognitive growth called concrete operations.

In this stage, children are now able to think in a much more logical, flexible and organized way. The older child is better at distinguishing fantasy from reality and can reason correctly about many changes in objects and events in the everyday world.

At this age children are now capable of decentration. This means that they can concentrate on several aspects of a task rather than centering on only one. For example, children will do better on Piaget's task where he poured water from a tall thin container into a short wider one. This is because they are now capable of understanding that a change in one aspect of the water is compensated for, by a change in another aspect.

The experiment with the water also demonstrates that a child of this age is capable of understanding the concept of conservation. Conservation means that the child understands that objects continue to exist and that superficial changes in the appearance of objects do not change their basic identity.

Another way to test if a child understands the concept of conservation is by placing two rows of seven checkers each in front of the child. The researcher would then ask the child if one row has more, less, or the same amount of checkers as the other. The child usually says that the two rows have the same number of checkers. Next, while the child watches, the researcher either bunches together the checkers in one of the rows or else spreads them apart. Now, when the child is asked about the two rows a four or five-year-old would insist that there are more checkers in one row than in the other. However, a seven-year-old would understand that there are still the same amount of checkers in each row.

According to Piaget's experiment, at first, children only grasp part of the conservation concept. Seven-year-olds realize that the mass or quantity of an object, such as a piece of clay, does not change when the clay is stretched or compressed. However, most fail to realize that its weight and volume also remain unchanged.

Piaget found that there are a few basic levels to acquiring the various kinds of conservation and they always occur in the same order. He used the term horizontal decalage to describe this gradual mastery of logical concepts. Horizontal decalage means development within a stage.

As I mentioned earlier, children of this age are capable of decentration. Because of this these children are able to appreciate and begin to anticipate their listeners' needs when they converse with and explain things to other people. Because they can de-centre they can begin to construe events from

other people's points of view. The child's language which up until now has been mainly egocentric has now become primarily sociocentric.

These children also demonstrate the skill of reversibility, which is the capacity to mentally go through a series of steps and then reverse direction, returning to the starting point. The child can now construct a chain of different color beads, copying the original pattern in reversal order.

This ability to return to the starting point of an operation constitutes an important milestone in the intellectual ability of a child. These children can use addition and then reverse the findings by subtraction. As a result of having reversible operations, the child can use various approaches to solve a problem without becoming committed to any one possible solution.

Another skill that Piaget placed in the concrete operational period is transitivity. The skill of transitivity is the making of logical inferences based on separate related observations. For example, if told that Scott is older than Jennifer is, and Jennifer is older than Mark they infer that Scott must be older than Mark.

Just like conservation, transitivity does not suddenly appear full-blown. First children must understand seriation, which is the ordering of objects by size or weight. In a seriation test, a child would arrange a row of sticks in either ascending or descending order of length. Older preschoolers would be able to create the series but they will probably make many mistakes and take a long time to correct them. In contrast, six to seven year olds create the series much more efficiently.

Once children can arrange objects in order of size they are ready to develop the more sophisticated skill of transitivity, where they arrange and compare objects in their heads.

To prove this, Piaget showed children pairings of different colored sticks. From observing that stick A is longer than stick B and stick B is longer than Stick C children must make the mental inference that stick A is longer than stick C. Not until age nine or ten do children perform well on this task.

Although children begin to categorize at a very early age they do not understand the concept of class inclusion until the concrete operational stage. Class inclusion is an operation that involves the child's knowledge that a subordinate class (i. e. animals) is always larger than any of its basic classes (i. e. dogs). For example, most youngsters with eight lemon drops and five licorice drops agree that lemon drops are candy and that licorice drops are candy too. But unless a child has mastered class inclusion, he or she will also insist that there are more lemon drops than candy. Some investigators have discovered that many children are at least ten years old before they can solve class inclusion problems.

Because children of this age are capable of class inclusion, collections of all kinds of objects such as stamps, baseball cards or rocks become common in middle childhood.

Piaget uses the term elementary groupings or group like structures to the different ways in which a child's thought processes can manipulate classes and relations. Two examples of a group- like structure are associativity and

identity or nullifiability. Associativity “” children whose operations have become associative can reach a goal in various ways. They can make detours in thought, but in such a fashion that the results obtained by these different routes remain the same. For example, $(3+6)+4=13$ and $6+(3+4)=13$.

Identity or nullifiability-an operation that is combined with its opposite becomes nullified. Examples of nullifiability in mathematics are: give 3 and take 3 away results in null, or 5 times X divided by 5 equals X. If I drive one mile west and one mile east, I am where I started-my actions are nullified.

Piaget also found that school age children have a more accurate understanding of space than they did in early childhood. For example, comprehension of distance improves at this age. If there were two small trees made out of clay, placed apart on a table and then a block was put in between them, a preschooler would say that the distance has become smaller. However, a school-aged child would easily understand that the distance has not changed.

School age children are also better able to give directions. At the age of seven or eight children begin to perform mental rotations in which they align themselves to match that of a person in a different orientation. As a result, they can identify left and right for positions they do not occupy. This enables them to give clearer directions than younger children because they can imagine themselves walking to wherever the person has to go and they'll give step by step directions.

Although children in the concrete operational stage have far greater mental abilities than younger children, they do lack skills in one area.

Children of this age will only think in an organized way when they are dealing with concrete information that they can directly perceive. They can not think as logically when it comes to abstract ideas. This is the reason for the name of the stage concrete operations.

Observations I observed a ten-year-old boy and also asked him a few questions. I watched him do his math homework, which consisted of collecting data and then drawing a bar graph. This was a skill that he had learned about a week before and yet he was able to do. He also had social studies homework, which consisted of reading from his textbook and then answering questions.

I did Piaget's experiment with him. I poured water from a tall thin glass into a short wider glass and then asked him which glass had more water. I also first showed him two equal rows of checkers and then bunched one row together and then asked him which row had more checkers. Both times he looked at me as if I was crazy and asked me if I thought he was dumb or something. He told me that of course both glasses had equal amounts of water and both rows had equal amounts of checkers.

I also did the experiment with the pairings of sticks and he was able to easily tell me that stick A was longer than stick C.

I asked him about what he liked to do in his spare time and quite predictably he answered that he enjoyed playing baseball and rollerblading. But he also

said that he enjoyed reading books and also making up his own crossword puzzles and mazes. He also had a collection of basketball cards.

When I asked him directions from his home to mine he was able to give me pretty clear directions.

Analization According to my observations, school aged children do have all the mental abilities that Piaget said that they were capable of.

No thinker about cognitive development has been more influential than Piaget. Yet research suggest that he underestimated the cognitive abilities of preschool aged children. This may have occurred because Piaget overestimated young children's understanding the use of language. He may have assumed that wrong answers revealed fault in thinking, whereas errors may have arisen from the way he phrased the problems. Also, children may have not been able to verbalize what they actually knew. So, many researchers say that all the abilities that Piaget said come about in the concrete operation stage may actually appear earlier on in younger children. However, it is also possible that children in the United States are much more intellectually stimulated than they were in France and therefore that is the reason that these cognitive abilities seem to appear in younger children.

Piaget also failed to consider differences among children, among families and among cultures when outlining topic sequence and age ranges for developing abilities.

Although there is some criticism of Piaget's stages his description of children's thoughts helps teachers decide when and how to present various concepts to children.

References

Berk, Laura E. Infants, Children and Adolescents. Massachusetts. Allyn and Bacon.

Hall, Elizabeth Lamb, Michael Perlmutter, Marton. Child Psychology Today New York. Random House.

Muuss, Rolf E. Theories of Adolescence. Boston. McGraw Hill.

Wood, David. How Children Think and Learn. Massachusetts. Blackwell Publishers.