

CONSERVATION MISCONCEPTIONS

In the Early Years of Children

By Yerim Kim

"My 4-year-old always cries when she sees her baby brother's bottle of milk. She thinks he has more milk than her because the bottle is taller and her sippy is shorter and wider. She does not understand that they are the same amount. Is this normal?"

Of course!!

However, before we discuss more about this topic, let's take a look at Piaget's Theory of Cognitive Development!



Piaget's Theory of Cognitive Development

Sensorimotor Stage



- Birth to 2 years old
- Gain knowledge through their senses and motor movements (Oakley, 2004)

Preoperational Stage

- 2 to 7 years old
- Children are egocentric
- Children can start thinking symbolically (Oakley, 2004)



Concrete Operational Stage



- 7- 11 years old
- Start to think logically about concrete events
- Begin to understand the concept of conservation (Oakley, 2004)

Formal Operational

- 12 to adulthood
- Can form hypothetical ideas and scientific reasoning (Oakley, 2004)

What is going on in the children's mind?

- According to Piaget, children in the preoperational stage can think of only one aspect at a time (Byrnes, 2008).
- Moreover, they cannot imagine how things can get undone (Byrnes, 2008).
- Therefore, it is natural for children to be unable to conserve at an early age (Siegler & Alibali, 2019).

What is conservation?

Conservation is the ability to know that the amount and quantity stays the same when nothing is added or taken away despite the appearance of an object (Byrnes, 2008)

- Children learn how to conserve by the end of the concrete operations period (Siegler & Alibali, 2019).
- This is because in order to conserve, children must understand compensation and reversibility- understanding the concept of going back (Oakley, 2004).

So... Do We Just Wait?

Many parents ask: "Does that mean there is no way to help children develop conservation?"

Of course not!

- Although Piaget was noted for his developmental concepts, there still was a lot of critics over his work (Byrnes, 2008).
- Many critics argued that conservation can be seen earlier in children (Oakley, 2004).
- They argued that Piaget's conservation tasks were very misleading and confused the children with the way the questions were worded (Byrnes, 2008).
- A study showed that children were able to conserve better when the question was asked once without tricking the children (Oakley, 2004).
- Therefore, they argued that Piaget underestimated children's ability

Parental Tips

With this in mind!
What can we do?

- A study showed conservations depend on language development (Oakley, 2004)
- **Teaching children the broader vocabularies** such as bigger, smaller and little may help children improve the ability to solve conservational tasks
- A study showed that children learned more about conservation when the instructions or descriptions were accompanied by hand gestures (Ping & Goldin-Meadow, 2008).
- **Use hand gestures** while explaining the concept because seeing gesture helps children understand the relationship between the speech they hear to the objects they see.
- Some experiments showed that younger children were able to conserve when the researchers used sweets for the task (Oakley, 2004)
- Start practicing the task together **using the objects or candies** the children **likes** or are **familiar** of.

From my Experience:

- Make child friendly task activities!
- We, as educators, implement child friendly activities because children in Piaget's experiments were not able to fulfill the task when the materials and scenarios were unfamiliar (Oakley, 2004).
- Therefore, in order to teach children the concept of conservation, we have start by using materials and scenarios that the children feel familiar and comfortable with
- Make note of children's current understanding and their paces
- As educators, we need to focus on the children's current level of knowledge.
- Since every child is different and unique, their ability to understand the concept may be different. It is important to take note of the different paces and help those who fall behind.

From my Experience Cont'd:

- From my experience, learning about conservation is important because it helps children develop their critical and logical thinking skills.
- It allows the children to explore more on the activities as they will have a sense of understanding to the concept, which gets them excited and listen more attentively to the educators.
- To the children, this conservation learning can be a fun and interesting play depending on how we introduce the concept!



References:

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