Introduction to Human Development; Erikson's Theory of Psychosocial Development

Health Psychology (CMED2006)
LKS Faculty of Medicine
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Learning Objectives

At the end of the lecture, student should be able to

- Describe the characteristics of sensorimotor, preoperational, concrete operational, and formal operational stages according to Piaget's theory of cognitive development

- Contrast formal operation, relativistic thinking, and pragmatic thoughts

- Describe how health-related information can be delivered differently to people in different cognitive developmental stages

Part 1
Why Study Development

Cognitive Development

Cognition refers to mental activity and behaviour through which knowledge of the world is attained and processed

As a baby's brain grows, their cognition / mental ability also develops

Piaget's Theory of Cognitive Development

A theory developed by Jean Piaget

Main idea being that "children think differently to adults"

Baby starts from what they can sense and becomes more and more abstract

Stage	Characteristics
Sensorimotor (birth to 2 years)	Explore the world through their senses and actions
Preoperational (2-7 years)	Able to use language & other symbols to represent the world
Concrete Operational (7-12 years)	Able to think logically
Formal Operational (12+ years)	Able to reason with abstract symbols only

Part 1
Sensorimotor Stage

Examples of Sensorimotor Cognition

Newborns explore the world through their senses and actions, and their cognition is highly limited to their senses and actions

Of course, completely newborn is very different from a 1-year-old and 2-year-old

https://www.youtube.com/watch?v=NCdLNuP7OA8

Object Permanence

The understanding that objects continue
to exist when out of sight

According to Piaget, children develop
object permanence between 8 and 12 months;
however, later research suggests that
object permanence is developed at 2.5-3.5 months

Detailed Development From 0 to 2

0-1 mth   *Newborn reflexes*

1-4 mth   *Simple motor habits centred around the infant's own body*

4-8 mth   *Action aimed at repeating interesting effects in the external objects*

8-12 mth   *Intentional, or goal-directed behaviour; ability to find hidden objects (object permanence)*

12-18 mth   *Experiments to explore the properties of objects ; ability to search hidden objects in several locations*

18-24 mth   *Internal representation of objects and events; ability to find misplaced objects, deferred imitation, and make-believe play*

Schema

According to Piaget, we learn things by developing Schema – which is a specific psychological structure of organized ways of making sense of experience

Category of knowledge that help us to interpret and understand the world (e.g., a schema for dog, a schema for car, etc.)

Schema – Equilibration

As children progress through the stages of cognitive development, it is important to maintain a balance between applying existing schema (assimilation) and changing existing schema to account for new knowledge (accommodation)

Tool 62: Cognitive Development

A person's behaviour might be the consequences of how they understand the world and their ability to understand the world (including the physical world and social world)

There is a universal staging of development -- regardless of one's age

Tool 63: Sensorimotor Stage

A newborn's behaviour might be explained by their highly limited cognitive ability – i.e. the fact that their cognition is mostly linked to what they can sense and what they themselves can actually do (e.g. object permanence, schema, goal-oriented behaviour)

Part 2
Pre-operational Stage

Pre-Operational Stage

Around 2-7 years of age

Increase in representational or symbolic activity

Operation refers to any mental actions that obey logical rules

Concreteness & Realism

Unable to think about very abstract concepts

Believe that everything is real – difficult to distinguish between a dream or a fantasy with reality

Limitations in Pre-Operational Stage

https://www.youtube.com/watch?v=QxUxgPwpfgk

https://www.youtube.com/watch?v=tYtNkoBotRE

Limitations in Pre-Operational Stage

Egocentrism (please refer to the lecture on social development) & animistic thinking

Centration, inability to conserve & irreversibility

Lack of hierarchical classification

Animistic Thinking

Attributing life to an inanimate object / thinking inanimate objects are alive

Magical thinking declines between ages 4-8 when familiarity with physical events and principles increases

Conservation & Conservation Task

Conservation is the understanding that certain physical characteristics remain the same even when their outer appearance changes

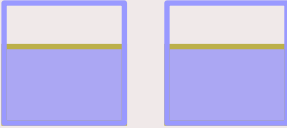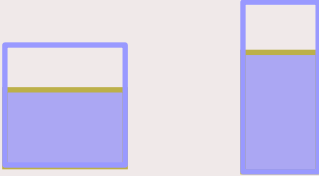We can test a person's understanding by asking them questions before and after the change of appearance

Conservation Task	Original Presentation	Transformation
Number Is there the same number of coins?		
Length Are the two sticks equally long?		
Mass Does each piece have the same amount of clay?		
Volume Is there the same amount of water in each glass?		
Weight Do the two pieces of clay weigh the same?		

Centration & Irreversibility

Centration is to focus on one aspect of situation, neglecting other important features

Irreversibility is the inability to mentally go through a series of steps in a problem and then reverse direction, returning to the start point (undo)

Conservation Tasks & Classification

3yo can complete the number-conservation task if there are only 3 items, and older children can complete more and more different tasks

2 years olds can understand global categories (animals, plants); 3 year olds can understand super-ordinate categories (furniture), basic level (chairs, tables), and subcategories (desk chair, rock chair)

Tool 64: Preoperational Stage

A small child's behaviour might be explained by their limited logical thinking ability (e.g. centration & irreversibility, egocentrism, and animistic thinking)

Specifically, they are not good at things that are abstract or unreal

Part 3
Concrete Operational Stage

Concrete Operational

Able to think logically about concrete or real-world events and experiences

Develop a set of abstract rules for examining & interacting with the world

Reasoning becomes more logical

Compared to Preoperational Stage

Better at hierarchical classification, seriation and transitive inference

Reversibility in thinking is achieved

More able to perform decentration – see Conservation Task

Seriation (1) Physical Ordering

Seriation means ordering items along a quantitative dimension (e.g. please arrange the following sticks from the shortest to longest)

Easiest and does not necessarily requires inference

Seriation (2) Transitive Inference

Transitive inference is to perform mental seriation; e.g.

B is longer than A

A is longer than C

Then B is _____ than C

More difficult, but doable by concrete-operational children when A, B & C are all visible to the child

Seriation (3) Hypothetical Problems

For example, "Amy is taller than Angel, Angel is taller than Alice. Who's the tallest?"

Most difficult, requires more information (and comparison) to be held in one's brain

Not doable by concrete-operational children

Inductive Reasoning

Able to use one's own experience to form a general principle

Contrast to deductive reasoning, which is based on hypothetical premises and requires predicting a specific outcome from a general principle – which concrete-operational child cannot do

Information Processing

Increases in information-processing speed and capacity

Gains in inhibition and attention

Development of Memory Strategies (rehearsal, organization, elaboration, and mnemonic)

Tool 65: Concrete Operational Stage

A child's behaviour might be explained by their limited logical thinking ability – specifically, they might be able to think logically using abstract rules, but is not able to deal with logical problem that is hypothetical or based entirely on abstract concepts

Part 4
Formal Operational Stage

Logic and Deductive Reasoning

True or False?

"If dogs are bigger than elephants

And elephants are bigger than mice

Then dogs are bigger than mice"

Fourth graders: 0% correct

Seventh graders: 45% correct

College students: 85% correct

Formal Operational

Starts around age 11

Capable of hypothetico-deductive reasoning (Problem →
Hypothesis → Deduce logical and testable inference)

Able to isolate and combine variables to test

Propositional Thought

Evaluate the logic of propositions without referring to real-world circumstances

However, maybe still dualistic thinking (i.e. dividing information, values, and authority into right and wrong, good and bad)

Tool 66: Formal Operational Stage

A child's behaviour might be explained by their limited logical thinking ability – specifically, they might be able to think logically about both concrete and abstract concepts, but is still unable to engage in relativistic thinking

Part 5
Post-Formal Thought

Consider these Questions...

Is <u>The Super Mario Bros. Movie</u> a good movie?

What about the <u>Barbie</u> movie? Better than <u>Oppenheimer</u>?

Is Arsenal or Liverpool a better football team?

Is psychology or sociology more useful for a nursing career?

Post-Formal Thought

A type of adult thinking that is suited to solving real-world problems

Less abstract and absolute than formal thought and more adaptive to inconsistencies in life

Epistemic Cognition

Our reflections on how we arrived at facts, beliefs, and ideas

One study asked undergraduates at the end of their four years programmes:

Who's the best teacher?

Who deserves an A in this course?

From Dualistic to Relativistic Thinking

Relativistic Thinking encompasses the following:

Knowledge as embedded in a framework of thought

Aware of a diversity of opinions on many topics

Believe in multiple truths, each relative to its context

Commitment within Relativistic Thinking

Formulate a perspective that synthesizes contradictions

Generate rational criteria against which options can be evaluated

Seek out differing perspectives to advance one's knowledge and understanding; Reflect & interact with peer

Pragmatic Thought

Logic becomes a tool for solving real world problems

Accept contradictions as part of existence and develop ways of thinking that thrive on imperfection and compromise

More able to integrate cognition with emotion

Cognitive-affective complexity

Awareness of positive and negative feelings and coordination of them into a complex and organized structure

Greater awareness of one's own and others' perspectives and motivation

Important in emotional intelligence and solving pragmatic situations

Tool 67: Pragmatic Thought

A person's behaviour might be explained by whether they are able to accept contradictions as part of existence and develop ways of thinking that thrive on imperfection and compromise (including multiple truths and cognitive-affective complexity) in order to solve real life problems pragmatically

Part 6
Explaining & Suggesting Behaviours

Scenario 1

Susie, 5, is a niece of yours. She is not very fond of eating vegetables, and her parents ask you (a nursing student) to help explain to her why it is important to eat vegetables.

However, you find that Susie does not really understand the concept of vegetables. She knows that she is usually given Choi-Sum to eat at home, and these are referred to as *"Choi"* (菜, vegetables). On the other hand, her kindergarten teachers once taught her about food pyramid, where "vegetables" also include carrots and tomatoes – which her parents say do not count.

She is also confused about seaweed, as it has the word "Choi" in its name.

Scenario 2

Peter, 18, is struggling with his university study. He is very good at remembering facts and solving abstract problems, and therefore achieved very good grades in public exams.

However, he finds that in university, most questions are not well-defined. His lecturers would give him scenarios that require him to fill in details from common sense, or to include its investigation as a prerequisite to trying to solve the problem. He also finds it frustrating that the lecturers don't provide actual solution to problems – in fact, they claim that there are no model answers. Rather, they prefer to talk about ways to tackle the problem and characteristics of good solutions. He therefore finds it difficult to study, and is always unsure whether his answers are good or not.

Part 7
Behavioural Change

Case 14

You are organizing a health talk for primary school students on health living. The topics include balanced diet, regular physical exercise, and the avoidance of tobacco and alcohol.

You are wondering the tone that you want to adopt during this talk, as well as the kind of information (and facts) that are most useful to be presented to the students.

Case 14 Focus

Which stage (in both Erikson's and Piaget's theory) are most of your audience most likely to be in? How can your message fit in with their developmental task?

Which stages have your audience passed through already? What virtues do you expect them to have? Given that some of them might not have achieved to virtue, what should you do? What kind of concepts can they understand?

Part 8
Conclusion

Conclusion

Cognition refers to mental activity and behaviour through which knowledge of the world is attained and processed

Jean Piaget's theory states that there are four stages of cognitive development, namely sensori-motor, preoperational, concrete operational, and formal operational stage – but we now think that there are also post-formal thoughts that embraces pragmatic and relativistic thinking

Reading / References

- Boyd, DR & Bee, H (2019). Lifespan development (8th ed.).
  Chapter 2.3 Cognitive Theories; chapter 5.1 Cognitive Changes
  and Intelligence in Infancy; chapter 7.3 Piaget's
  Preoperational Stage of Cognitive Development; chapter 9.2
  Cognitive Changes in Middle Childhood; chapter 11.4
  Changes in Thinking and Memory; 13.3 Cognitive Changes in
  Early Adulthood. Boston, MA: Pearson.

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