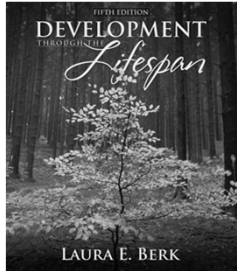


Development Through the Lifespan



Chapter 7 Physical and Cognitive Development in Early Childhood

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Brain Development in Early Childhood

Brain growth increases

- hemispheres begin to lateralize

Frontal lobe areas for planning/organization develop

Left hemisphere active

- language skills
- handedness

Linking areas of the brain develop

- cerebellum, reticular formation, hippocampus, corpus callosum

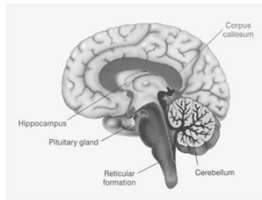


Figure 7.2

Handedness

Reflects dominant cerebral hemisphere

- right-handed (90%)—left hemisphere
- left-handed (10%)—both hemispheres

May be genetic basis, but affected by experience

- position in uterus, practice

Few left-handers show developmental problems

- left hemisphere damage may link left-handedness and some mental problems



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Piaget's Preoperational Stage

Ages 2 to 7

Gains in mental representation

- make-believe play
- symbol–real-world relations

Limitations in thinking

- egocentrism
- conservation
- hierarchical classification



Early Childhood Development of Make-Believe

With age, make-believe gradually becomes:

- more detached from real-life conditions
- less self-centered
- more complex
 - sociodramatic play



Benefits of Make-Believe Play

- Practice representational schemes
- Reflect on thinking, control behavior, and take another's perspective
- Gain in social, language, and literacy skills
- Improve attention, memory, and logical reasoning
- Strengthen imagination and creativity

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Dual Representation

Viewing a symbolic object as both an object and a symbol

Mastered around age 3



Adult teaching can help

- maps, photos, drawings, and make-believe play supports experience with symbols
- point out similarities to real world

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Limitations of Preoperational Thought

Cannot perform mental operations

Egocentrism and animistic thinking

Cannot conserve

Lack hierarchical classification

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Egocentrism

Failure to distinguish others' views from one's own



Figure 7.7

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Follow - ups

Borke (1975) used the character Grover from Sesame Street

3 and 4 YO children watched him ride in a fire engine and were asked how the scene would look at various stops on the ride.

79% of 3 year olds and 93% of 4 year olds were correctly able to solve this task, in comparison with 42% of 3 year olds and 67% of 4 year olds who were given Piaget's three mountains.

Non- egocentricity?

Egocentricity can be manipulated by changing the complexity of cues, familiarity of materials used, differences between perspectives, clarity of the context and mode of response.

Four year olds understand that a secret is shared by those who have seen an event but not by those whose eyes were shut (Mossler, Marvin and Greenburg, 1976)

Two year olds have been found to adjust what they say and how they say it depending on who they are addressing (Menig-Peterson 1975).

Children can orient pictures so that others can see them (Lempers, Flavell and Flavell, 1975)

A child who has worn rose-coloured glasses or opaque goggles is able to appreciate the difficulties experienced by another who is wearing such spectacles (Novey 1975, Liben 1978).

Animistic Thinking

Belief that inanimate objects have lifelike qualities



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Limits on Conservation

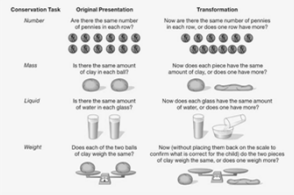


Figure 7.8

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Centration

- focus on one aspect and neglect others

Irreversibility

- cannot mentally reverse a set of steps

Piagetian Class Inclusion Problem

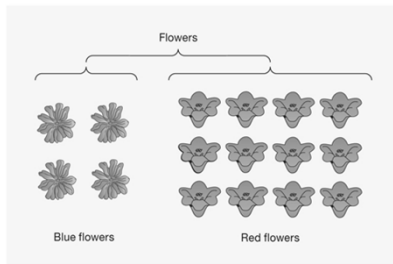


Figure 7.9

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Follow-Up Research on Preoperational Thought

Egocentric thought	Can adjust language to others, take others' perspectives in simple situations Animistic thinking comes from incomplete knowledge of objects
Illogical thought	Can do simplified conservation Can reason by analogy
Categorization	Everyday knowledge is categorized
Appearance versus reality	Can solve appearance–reality tasks in nonverbal ways

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Evaluation of Piaget

Many experts refute preoperational stage idea

Piaget's stages too strict

- need flexible stage approach

Piaget assumes abrupt change

- most experts believe change is gradual

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Educational Principles Derived from Piaget's Theory



Photodisc

Discovery learning

Sensitivity to children's readiness to learn

- developmentally appropriate practices

Acceptance of individual differences

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Vygotsky and Education

Assisted discovery

- Teacher:
 - guides learning
 - tailors help to zone of proximal development



Educating Children

Peer collaboration

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Children's Private Speech

Piaget called this "egocentric speech"

Vygotsky viewed it as foundation for all higher cognitive processes

Helps guide behavior

- used more when tasks are difficult, after errors, or when confused

Gradually becomes more silent

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Evaluation of Vygotsky's Theory

Helps explain cultural diversity in cognition

Emphasizes importance of teaching

Focus on language deemphasizes observation, other learning methods

Says little about biological contributions to cognition

Vague in explanation of change

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Improvements in Information Processing

Attention

- inhibition
- planning

Memory

- memory strategies
- everyday experiences

Theory of mind

- metacognition

Emerging literacy

Mathematical reasoning

- ordinality, counting, and cardinality



Educating Children

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Improvements in Inhibiting Impulses

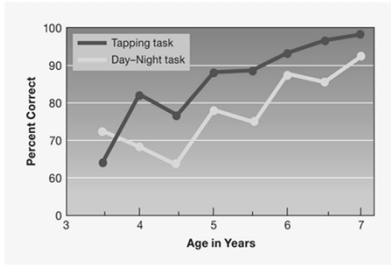


Figure 7.10

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Recognition and Recall

Recognition

Noticing that a stimulus is identical or similar to one previously experienced
Easier than recall

Recall

Generating a mental representation of an absent stimulus
More difficult than recognition

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Memory Strategies



Absolute Family

Preschoolers do not use:

- rehearsal
- organization
- elaboration

Preschoolers use:

- scripts
- greater elaboration with age

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Autobiographical Memory

Long-lasting representations of one-time events

Improves with cognitive, conversational skills

Parents help develop narrative

- elaborative
- repetitive



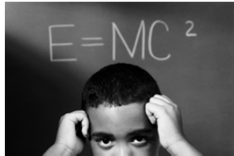
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Family Life

Metacognition

Awareness and understanding of various aspects of thought

Develops with *theory of mind*



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Development of Theory of Mind

Awareness of mental life

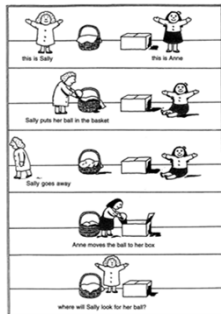
- infancy through age 3

Mastery of false beliefs

- around age 4
- influence of cultural and social factors



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Early Childhood Mathematical Reasoning

Ordinality

- relationships between quantities
- 14 to 16 months

Cardinality

- when counting, last number is the total
- 3½ to 4 years

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Language Development in Early Childhood

Vocabulary

- fast-mapping

Grammar

- overregularization

Conversation

- pragmatics

Supporting language development

- recasts, expansions



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Vocabulary Development



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Fast-mapping

- objects
- verbs
- modifiers

Coin new words

Metaphors

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Learning Grammar



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Basic rules

- subject-verb-object structure by age 4
- plurals
- to be

Overregularization

Complex structures

- questions
- not complete until middle childhood

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Pragmatics

2-year-olds can have effective conversations

By 4, adjust to fit age, sex, social status of listener

Difficult situations

- Telephone



Supporting Early Childhood Language



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Direct feedback
Recasts
Expansions
