

# Psychology and Human Development

## Lecture 7.

### Physical and Cognitive/language development in Middle Childhood

1. Physical development gross/fine motor development, obesity problems
2. Learning disabilities
3. Language development
4. Intellectual development; Piaget concrete operational stage
5. Improving intelligence in middle children.



# PHYSICAL DEVELOPMENT IN MIDDLE CHILDHOOD

- In what ways do children grow during the school years, and what factors influence their growth?
- What are the main health concerns at this age?
- What special needs may become apparent during these years, and how can they be met?

## *Slow but steady...*

- Height changes / Weight changes
- Only time in lifespan when girls are, on average, taller than boys

## **Benefits of Adequate Nutrition** - Relationship to social and emotional functioning

- More peer involvement
- More positive emotions /Less anxiety
- More eagerness to explore new environments
- More persistent in frustrating situations
- Generally higher energy levels

# Childhood Obesity: Most common causes:

## Genetic factors

- Lack of physical activity
- Unhealthy eating patterns
- Combination of these factors

Only in rare cases is being overweight caused by a medical condition such as a hormonal problem

## Obese children








- More likely to be overweight as adults
- Greater risk of heart disease, diabetes, and other diseases

## The other side of "fat"

- Even very young children are aware of society's fixation on thinness
- Lowered self-esteem has been associated with being overweight in girls as young as 5
- Attitude was closely correlated with parents' perceptions

# Gross Motor Development

## Improved muscle coordination

6 Years	7 Years	8 Years	9 Years	10 Years	11 Years	12 Years
						
<p>Girls superior in accuracy of movement; boys superior in more forceful, less complex acts.</p> <p>Can throw with the proper weight shift and step.</p> <p>Acquire the ability to skip.</p>	<p>Can balance on one foot with eyes closed.</p> <p>Can walk on a 2-inch-wide balance beam without falling off.</p> <p>Can hop and jump accurately into small squares (hopscotch).</p> <p>Can correctly execute a jumping-jack exercise.</p>	<p>Can grip objects with 12 pounds of pressure.</p> <p>Can engage in alternate rhythmic hopping in a 2-2, 2-3, or 3-3 pattern.</p> <p>Girls can throw a small ball 33 feet; boys can throw a small ball 59 feet.</p> <p>The number of games participated in by both sexes is the greatest at this age.</p>	<p>Girls can jump vertically 8.5 inches over their standing height plus reach; boys can jump vertically 10 inches.</p> <p>Boys can run 16.6 feet per second and throw a small ball 41 feet; girls can run 16 feet per second and throw a small ball 41 feet.</p>	<p>Can judge and intercept directions of small balls thrown from a distance.</p> <p>Both girls and boys can run 17 feet per second.</p>	<p>Boys can achieve standing broad jump of 5 feet; girls can achieve standing broad jump of 4.5 feet.</p>	<p>Can achieve high jump of 3 feet.</p>

# Do boys and girls differ in motor skills?

- Gender differences in gross motor skills became increasingly pronounced during middle childhood,
  - – Boys outperform girls
  - – Little or no difference when equal participation in exercise/activities
  - – Influenced by societal expectations

# Fine Motor Development

- Necessary for wide range of school-related tasks
- Influenced by increase in amount of Myelin
- speeds up electrical impulses between neurons



# Health and School-agers

- Middle childhood is period of robust health
- Routine immunizations have produced considerably lower incidence of life threatening illnesses
- More than 90 percent of children in middle childhood have at least one serious medical condition but most are short term illnesses

## Other Health Risks

- Accidents
- Motor vehicles
- Bikes
- Fires and burns
- Drowning
- Gun-related deaths
- Reduced by use of seatbelts and helmets
- The Serious Risks of Cyberspace
- Child Safety on the Information Highway Risks Online
- Safety Net for the Internet: A Parent's Guide



# Children with Special Needs

- **Visual impairments**

Difficulties in seeing Blindness / Partial sightedness

- **Auditory impairments**

Loss of hearing or some aspect of hearing /Affects 2 percent of school-age children

- **Speech impairments**

Impairment of speech articulation, voice, fluency, or the impairment or deviant development of language comprehension and/or expression

- **Learning disabilities**

Discrepancies Between Achievement and Capacity to Learn

- Difficulties in acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities
- – Dyslexia, dysgraphia, dyscalculia
- – ADHD





# “Learning disability”



- disorder is found in one or more of basic psychological processes involved in understanding or using language, spoken or written
- disorder may manifest itself in imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations

## Developmental Reading Disability

- Dyslexia affects 2 to 8 percent of elementary school children
- Reading difficulties
- Inability to separate sounds in words
- Problems sounding out words
- Inability to separate sounds in words
- Problems sounding out words

## Developmental Writing Disabilities

- Writing involves several brain areas and functions (dysgraphia)
- Brain networks for vocabulary, grammar, hand movement, and memory must all be in good working order

# Developmental Arithmetic Disability

- Arithmetic involves recognizing numbers and symbols, memorizing facts, aligning numbers, and understanding abstract concepts like place value and fractions
- Any of these may be difficult for children with developmental arithmetic disorders, also called **dyscalculia**

## What are the most common signs of ADHD?

- Persistent difficulty in finishing tasks, following instructions, and organizing work
- Inability to watch an entire television program
- Frequent interruption of others or excessive talking
- Tendency to jump into a task before hearing all the instructions.
- Difficulty in waiting or remaining seated /Fidgeting

## Treatments for ADHD?

- Behavioral therapy
- Diet



# Mastering the Mechanics of Language in Middle Childhood

- 1. Vocabulary continues to increase
- 2. Mastery of grammar improves
- 3. Understanding of syntax grows
- 4. Certain phonemes remain troublesome
- 5. Decoding difficulties when dependent on intonation
- 6. More competence in pragmatics
- 7. Increase in meta-linguistic awareness

## Metalinguistic Awareness

- One of most significant developments in middle childhood is children's increasing understanding of their own use of language

- **By age 5 or 6,**

Understand that language is governed by set of rules

- **By age 7 or 8,**

Realize that miscommunication can be due to factors attributable not only to themselves, but to the person communicating with them

# Is extra homework worth the cost?

*From Research to Practice* : No Child Left Behind Act

## Outcomes:

- – Frequent testing commonplace
- – Student scores related to federal funding
- – Reading instruction sometimes replaces recess and other activities
- – Increase in amount of homework
- – Some children burn out
- Time spent on homework is associated with greater academic achievement in secondary school
- Relationship gets less strong for the lower grades; below grade 5, the relationship disappears
- For older children more homework is not necessarily better
- Some research indicates that benefits of homework may reach plateau beyond which additional time spent on homework produces no further benefits

# INTELLECTUAL AND LANGUAGE DEVELOPMENT IN MIDDLE CHILDHOOD

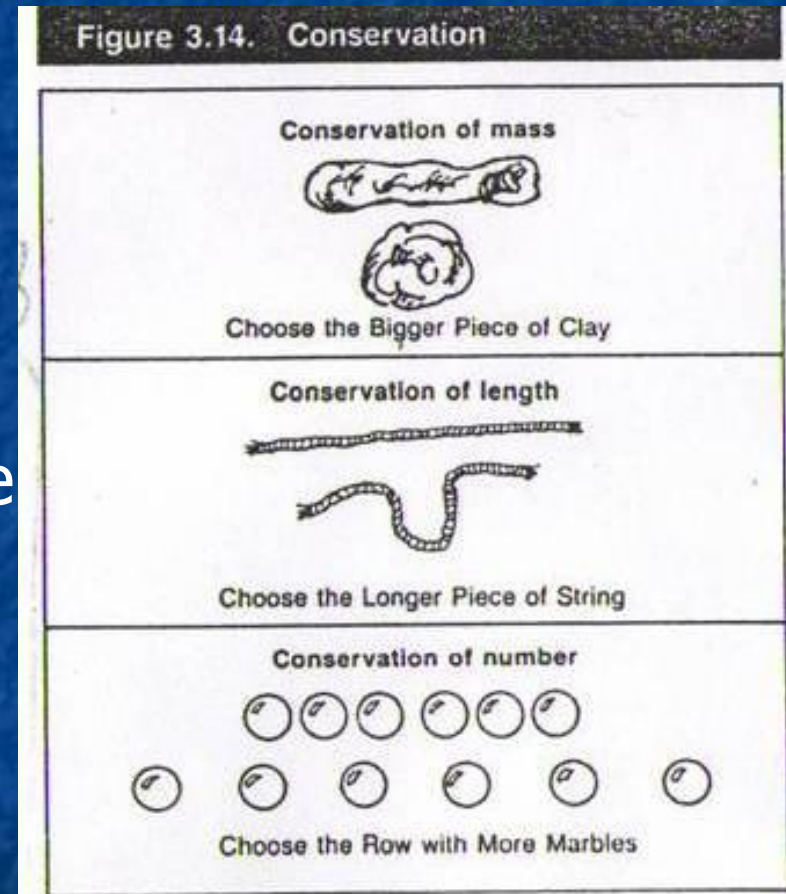
## Intellectual Development: Piaget

- Concrete operational stage
- Between 7 and 12 years
- Characterized by active and appropriate use of logic
  - Logical operations applied to concrete problems
  - Conservation problems; reversibility; time and speed, decentering
- How does preoperational thought emerge?
- Shift from preoperational thought to concrete operational thought does not happen overnight
  - Children shift back and forth between preoperational and concrete operational thinking
  - Once concrete operational thinking is fully engaged, children show several cognitive advances

# Concrete operations period (7-11)

The main goal is to learn.

- 1) **Conservation** – the ability to recognize that properties of objects do not change even though their appearance does.
- 2) **Ability to decenter** or realize that their way of looking at the world is only 1 perspective.
- 3) **Reversal** – the ability to work a problem back wards.



# Intelligence



- Intelligence -- problem-solving skills and the ability to learn from and adapt to life's everyday experiences
- Interest in intelligence has often focused on individual differences and assessment
- Individual differences -- the stable, consistent ways in which people are different from each other
- Children are considered intelligent if they understand the course material and are able to earn above-average.

# First IQ test was

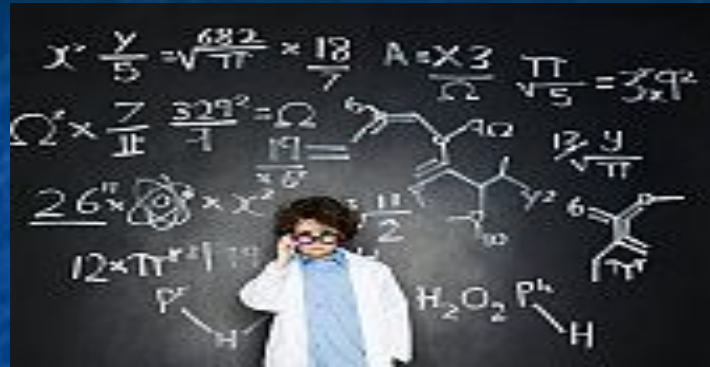
Designed by A. Binet (1905).

It is simply the ratio of person's mental age to chronological age. It describes the performance of an individual relative to that of others of the same age.

$$IQ = MA/CA \times 100$$



# Intelligence tests are designed to measure



-verbal ability

69-85 – low

-math ability

86-114 – average

-memory

115-124 – higher

-perceptual speed

than average

-spatial ability

124-134 – high

-verbal fluency

135 – above -

-reasoning

genious

# Multiple Intelligence (Gardner )

- Verbal/linguistic
- Logical/mathematical
- Musical
- Visual/Spatial
- Bodily kinesthetic
- Interpersonal
- Intrapersonal
- Naturalistic



## Spearman's Factor theory.

He proposed a theory of intelligence which included a general factor (**g**) that gives a person the ability to achieve success in a wide variety of intellectual tasks. But most people are best in 1 or 2 areas, so he included specific factors – (**s**)  to excel in particular tasks.



# Creativity

Coming up with new or unusual responses to familiar circumstances  
(closely related to the ability to solve problems)

Guilford (1967) :

1. **Convergent thinking** (coming up with single correct answer)
2. **Divergent thinking** (with new unusual responses)

Intelligent test measure convergent thinking, creativity tests □  
divergent thinking

People with higher intelligence tend to be  
more creative than people with lower intelligence.

## Increasing creativity in children:

- provide stimulating environment
- give freedom
- encourage independence



# Seminar questions

1. Which are important things to know about physical development in middle children?
2. What are the main goals in concrete operational period of cognitive development?
3. Name and explain learning disabilities in middle children.
4. How do children master the Mechanics of Language in Middle Childhood?
5. Is extra homework worth the cost?
6. What is intelligence and why is it important to consider individual differences of children?
7. Tell the difference between convergent and divergent thinkers.
8. How can we recognize and develop creativity in children?