Intellectual Development in Middle Childhood: Piagetian Approaches to Cognitive Advances

- The school-age child enters the CONCRETE OPERATIONAL STAGE, the period of cognitive development between 7 and 12 years of age.
- Characterized by the active, and appropriate use of logic.
- Children at this stage can easily solve conservation problems—logic used over appearance.

(more about Piaget's views of intellectual development)

- Because they are less egocentric, they can take multiple aspects of a situation into account, a process known as DECENTERING.
- They attain the concept of reversibility, realizing that a stimulus can be reversed, returning to its original form.
Despite the obvious advances that occur during the concrete operational stage, children still experience a big limitation in their thinking: They are still tied to concrete physical reality! (no understanding of abstract/hypothetical/logic)

A brief critique of Piaget's views of intellectual development

- Piaget is criticized for underestimating children's abilities and for exaggerating the universality of the progression through the stages.
- Research suggest that Piaget was more right than wrong.
- Cross-cultural research increasingly implies children universally achieve concrete operations, and that training with conservation tasks improves performance.

Vygotsky's Approach to Cognitive Development & Classroom Instruction

- Vygotsky's approach has been particularly influential in the development of several classroom practices.
- Classrooms are seen as places where children should have the opportunity to try out new activities.
- Specifically, Vygotsky suggests that children should focus on activities that involve interaction with others.
Cooperative learning is a strategy used in education that incorporates several aspects of Vygotsky’s theory (kids work together to achieve goals).

Reciprocal teaching, a technique where students are taught to skim the content of a passage, raise questions about its central point, summarize the passage, and finally, predict what will happen next, help lead students through the zone of proximal development.

- Significant success rates with raising reading comprehension levels.

**Intelligence: Determining Individual Strengths**

- **INTELLIGENCE** is the capacity to understand the world, think rationally, and use resources effectively when faced with challenges.

- Alfred Binet's pioneering efforts in intelligence testing left three important legacies.
  1) He defined intelligence pragmatically as **that which his test measured**.
  2) Intelligence tests should be reasonable indicators of school success.

Binet invented the concept of IQ, INTELLIGENCE QUOTIENT, a measure of intelligence that takes into account a student's mental and chronological age:

- \((\text{MA} \times 100) = \text{IQ}\).
- **MENTAL AGE** is the typical intelligence level found for people at a given chronological age.
- **CHRONOLOGICAL (OR PHYSICAL) AGE** is the actual age of the child taking the intelligence test.
Scores today are deviation IQ scores, so that the degree of deviation from the average (100) permits a calculation of the proportion of people who have similar scores.

2/3 of all people fall within 15 points of the average.

As scores rise and fall beyond the average range, the percentage of people falls significantly.

Measuring IQ in the Present Day

Intelligence tests today share an underlying premise that intelligence is composed of a single, unitary mental ability factor, commonly called "g".

3 main assessment instruments used today

1) The Stanford-Binet Intelligence Scale is a test that consists of a series of items that vary according to the age of the person being tested.

(Measuring IQ in the Present Day, continued)

2) The Wechsler Intelligence Scale for Children-Revised (WISC-III) is a test for children that provides separate measures of verbal and performance (or nonverbal) skills as well as a total score.

3) The Wechsler Adult Intelligence Scale-Revised (WAIS-III) is a test for adults that provides separate measures of verbal and performance (or nonverbal) skills as well as a total score.
What do IQ scores from these tests mean?

- Reasonably good predictors of school performance
- NOT good predictors of performance outside of school
  - Frequently inaccurate at predicting future success, income, etc.!

Intelligence Test Norms: Mental Retardation

MENTAL RETARDATION, defined as a significantly subaverage level of intellectual functioning that occurs with related limitations in two or more skill areas, is found in approximately 1 to 3 percent of the school-age population.

- Mentally retardation is typically measured by IQ tests.

(Mental Retardation, continued)

a. 90 percent are classified as MILD RETARDATION, where IQ is in the range of 50 or 55 to 70.

b. can reach 3rd to 6th grade level in school

c. can hold jobs and function independently
(Mental Retardation, continued)

a. 5 to 10 percent are classified as **MODERATE RETARDATION**, where IQ is from 35 or 40 to 50 or 55.
b. slow to develop language and motor skills
c. generally cannot progress beyond 2nd grade
d. capable of training and social skills but typically need supervision

(Mental Retardation, continued)

a. Those with **SEVERE RETARDATION**, IQs ranging from 20 or 25 to 35 or 40, and **PROFOUND RETARDATION**, where IQ is below 20 or 25 are the most limited.
b. no speech
c. poor motor control
d. need 24-hour care

The Intellectually Gifted

3 to 5 % of school-age children are **GIFTED AND TALENTED**, who show evidence of high performance capability in areas such as intellectual, creative, artistic, leadership capacity, or specific academic fields.

Contrary to stereotypes, research shows that highly intelligent people also tend to be outgoing, well adjusted, and popular
The Intellectually Gifted, continued

→ Two approaches to educating the gifted and talented exist.
  - ACCELERATION, where special programs allow gifted students to move ahead at their own pace, even if this means skipping to higher grade levels.
  - ENRICHMENT is an approach through which students are kept at grade level but are enrolled in special programs and given individual activities to allow greater depth of study in a given topic.

Mainstreaming: Ending Segregation by Intelligence Levels

- Public law 94-142 (the Education for all Handicapped Children Act) requires that children with special needs receive a full education in the least restrictive environment (the setting most similar to that of children without special needs).
- Supporters of mainstreaming point out that special needs children must ultimately function in a “normal” environment, and greater experience with their peers will help with this.

- Full inclusion supporters want all students, no matter how severe the disability, to be included in regular classrooms.
- Controversial!
- Some concern exists that these students may be overlooked in a regular classroom environment