

Chapter 2  
Cognitive Development

Multiple Choice Questions

- 1) The term *development* refers to how people:
  - a) Learn in response to environmental cues
  - b) Grow, adapt, and change over the course of their lifetimes
  - c) Fulfill intellectual potential and promise
  - d) Respond to demands placed upon them
  
- 2) Nurture has a greater effect than nature on the following domain of development:
  - a) Physical development
  - b) Reflex development
  - c) Moral development
  - d) Motor development
  
- 3) Ramona is a first year teacher. She prepared tirelessly all summer for a fifth-grade position. As school approached she learned the fifth-grade position was eliminated and instead she would fill a first-grade position. Ramona knows in order to be an effective teacher she will most need to:
  - a) Take student physical development into account when arranging the classroom
  - b) Be careful to model traditional gender roles for such young learners
  - c) Adapt her instruction to meet the district grade level objectives
  - d) Take into account her students' ages and stages of development
  
- 4) Continuous theories of development assume that development occurs:
  - a) In a start and stop progression as individuals interact with the environment
  - b) Through indirect learning and skill acquisition
  - c) As parents' genetic predisposition is passed on to offspring
  - d) In a smooth progression as skills develop and the environment provides experiences
  
- 5) Discontinuous theories of development focus on:
  - a) Inborn factors rather than environmental influences

- b) Environmental influences rather than genetic factors
- c) The importance of environment rather than heredity
- d) The detrimental effects of disruption in nurturing caregivers

6) According to Piaget, knowledge comes from which of the following:

- a) Development
- b) Progression
- c) Study
- d) Action

7) Piaget's theory of cognitive development proposes that:

- a) Intellectual development is a discontinuous process
- b) Development is based on an individual's observation within a prepared environment
- c) A child's intellectual development progresses through distinct stages
- d) Knowledge is something to be transferred from an adult to the child

8) Piaget believed that children are born with an innate tendency to make sense of their own environments by creating:

- a) Dilemmas
- b) Equanimity
- c) Schemes
- d) Identity

9) According to Piaget, the process of adjusting schemes in response to the environment by means of assimilation and accommodation is:

- a) Adaptation
- b) Scheme transition
- c) Adjustment patterns
- d) Decentralization

10) According to Piaget, assimilation occurs when:

- a) When a baby incorporates new objects into a scheme
- b) When a new object does not fit the existing scheme
- c) When a baby using a favorite scheme to explore his world
- d) After the developmental dilemma has been successfully resolved

11) According to Piaget, accommodation occurs when:

- a) When a baby incorporates new objects into a scheme
- b) When a new object does not fit the existing scheme
- c) When a baby using a favorite scheme to explore his world
- d) After the developmental dilemma has been successfully resolved

12) Sometimes, when old ways of dealing with the world simply don't work, a child might modify an existing scheme in light of new information or a new experience.

This is a process called:

- a) Avoidance
- b) Assimilation
- c) Accommodation
- d) Acculturation

13) Piaget's view of cognitive development as a process in which children actively build systems of meaning and understanding of reality through their experience and interactions is known as:

- a) Behaviorism
- b) Metacognition
- c) Interactive theory
- d) Constructivism

14) Which of the following best describes Piaget's idea of disequilibrium?

- a) You find that what you expect to happen actually does happen
- b) You need to respond but cannot think of what to do
- c) You know what to do but your response doesn't not work
- d) You feel uncomfortable about doing something but do it anyway

15) Mr. Nicely often begins his lectures by presenting students with two ideas or observations that apparently conflict. He feels this method of presenting a paradox arouses students' interest. From Piaget's point of view, the teacher is making use of his students' natural response to:

- a) Egocentrism
- b) Anticipatory set
- c) Transitivity
- d) Disequilibrium

16) Piaget described cognitive development as a sequence of stages. Which of the following represents his stages in developmental order?

- a) Sensorimotor, preoperational, concrete operational, formal operational
- b) Preoperational, sensorimotor, concrete operational , formal operational
- c) Concrete operational, sensorimotor, preoperational , formal operational
- d) Sensorimotor, preoperational, formal operational, concrete operational

17) Two-year-old Lizzie encounters a squirrel and calls it "mouse." Which of Piaget's terms best describes her thinking?

- a) Accommodation
- b) Assimilation
- c) Immature
- d) Sensorimotor

18) Which of the following cognitive characteristics explains the difficulty preoperational children have with the beaker of water problem (conservation of volume)?

- a) Object permanence
- b) Egocentrism
- c) Centration
- d) Hypothetical thought

19) A student knows that if  $2 + 5 = 7$ , then  $7 - 5 + 2$ . This requires which of the following cognitive characteristics?

- a) Formal thought
- b) Reversibility
- c) Transitivity
- d) Situational thought

20) Which cognitive characteristic is Athena showing when she plays hide and seek and pulls the drape over her head with the rest of her body showing believing no one will see her?

- a) Immaturity of thought

- b) Object relevance
- c) Egocentrism
- d) Same sight

21) Which of the following is most likely to help a concrete operational child solve conceptual problems?

- a) The problems are explained more than once
- b) The problems involve objects and situations that are familiar to the child
- c) The child is older than the typical concrete operational learner
- d) The child is instructed on problem solving methods

22) Dahlia's toy is covered by a blanket, but the child does not remove the blanket to look for the toy because he believes the toy is gone. This scenario shows an infant's inability to grasp which idea?

- a) Object stability
- b) Object status
- c) Object conservation
- d) Object permanence

23) During the preoperational stage, children have the ability to do which of the following?

- a) Learn about their world through physical manipulation.
- b) Think about things and can use symbols to mentally represent objects.
- c) Develop a grasp of object permanence.
- d) Grasp the idea of conservation, for example that amount remains the same regardless of container size.

24) Max, a preschooler, explains that a sandwich cut into four pieces is more than a sandwich cut in half, demonstrating which characteristic common in the preoperational stage?

- a) Conservation
- b) Constructivism
- c) Centration

d) Reversibility

25) Seriation, an important task children learn during the concrete operational stage, is characterized by which ability?

- a) Arranging items with automaticity
- b) Arranging things in a logical progression
- c) Disinterest in details such as volume or size
- d) Interest in disorder of details, as in "Where's Waldo?"

26) Transitivity involves the ability to:

- a) Move bilaterally
- b) Arrange objects in sequence
- c) Change direction
- d) Infer relationships

27) Children in the concrete operational stage have the understanding of space well enough to do which of the following?

- a) Draw a map from home to school
- b) Move hands on the clock to demonstrate understanding of time
- c) Think about future events
- d) Know the earth's distance from the sun

28) The formal operational stage emerges:

- a) Sometime around the eighteenth birthday
- b) Unexpectedly, like a dropped weight
- c) Earlier in boys than in girls
- d) Sometime around the onset of puberty

29) In the formal operational stage, the preadolescent is beginning to think:

- a) Constructively
- b) Abstractly
- c) Intelligently
- d) Reasonably

30) You are teaching a tenth-grade class of average ability students. Your lesson involves abstract ideas. Which of the following would be the most accurate supposition you could make about your class as you plan activities?

- a) Most of your students have not progressed beyond the concrete operational stage.
- b) Although many students may have reached the formal operational stage of development, you can't be sure those who have will be able to apply it to your lesson.
- c) All of the students should have mastered hypothetical reasoning at this stage and should be able to handle the abstract concepts of the lesson.
- d) All of your students are ready to apply formal thought to the different aspects of your lesson.

31) The abilities that make up formal operational thought include:

- a) Metacognition, hypothetical weighing of negatives, and conceptual workings.
- b) Thinking abstractly, testing hypotheses, and forming concepts.
- c) Brainstorming, collaborating, and building.
- d) General articulation, critical thinking, and creative conceptualization.

32) Instruction adapted to the current developmental stage of the child is called:

- a) Developmentally appropriate
- b) Developmentally accelerated
- c) Diagnostically aligned
- d) Adaptive curriculum

33) Symbols that cultures create to help people think, communicate and solve problems are referred to as:

- a) Private speech
- b) Zone of proximal development
- c) Abstractions
- d) Sign systems

34) From Vygotsky's view point, which would be the best description of developmentally appropriate activities?

- a) Teach to the test so students know what is expected.
- b) Focus on skills not yet developed and infuse these into the curriculum
- c) Encourage students to reflect on skills gained independently
- d) Select tasks that range from those requiring the assistance of others to those they can accomplish alone.

35) An example of the Vygotsky notion of scaffolding would be:

- a) A mother helping a child learn to ride a bike
- b) Students taking a test
- c) A teacher passing out new supplies
- d) A father taking his children for a ride in the car.

36) The importance of the bioecological approach is in emphasizing:

- a) The interconnectedness of the many factors that influence a child's development
- b) The social aspect of children's learning and development
- c) The focus on the child as a unique individual rather than a miniature adult
- d) The environmental influences that impact the developmental process

37) Knowledge and skills relating to reading that children usually develop from experience with books and other print media before the beginning of formal reading instruction in school is known as:

- a) Oral language
- b) Emergent literacy
- c) Language acquisition
- d) Phonics instruction

38) Early literacy developments depend on:

- a) A student's gender based preferences for literature
- b) Cultural awareness
- c) Children's experiences at home and their learning about books and letters
- d) Social experiences outside of the home

## Chapter 2 Essay Question

1) The following are examples of Piaget's concept of equilibration. Analyze two of the following scenarios and identify in each:

- a) The source of disequilibrium
  - b) The accommodation taking place
  - c) The resulting new scheme
- Baby Natalie can feed herself applesauce with her fingers with relative ease. Her mother introduces the spoon and encourages Natalie to feed herself. Natalie dips the spoon in the applesauce but turns the spoon on the way to her mouth and the applesauce drips off. After some practice Natalie learns how to keep the applesauce on the spoon.
  - Eli sees some groups of numbers on a gravestone (1899-1950). He appears to be thinking about the numbers and his lips are moving and he is speaking under his breath. Then he looks perplexed and says, "But you can't really call them can you, if they are dead?" Eli's turns to his mom for clarification.
  - Alonzo begins reading his textbook and knows from his high school psychology class that cognitive development begins with the "formal operations" stage. While skimming his text he discovers that children first develop operations in the Concrete Operational stage. He carefully reads the section on cognitive development.

2) Describe the four main teaching implications drawn from the developmental ideas of Piaget.

3) A middle school teacher arranges his classroom so students sit in straight rows of desks, one in front of the other. He does this to promote compliant behavior and is pleased that students are quiet and attentive during lectures. However, students do not ask questions or discuss ideas. After lectures, the teacher assigns independent seat work. According to Vygotsky, will this teaching style be effective? Give at least two reasons to support your answer.

4) How did Bronfenbrenner view development? Describe Bronfenbrenner's model and his main contribution to the field of developmental psychology. What was his critique of the Piagetian view?

## Chapter 2

### Multiple Choice Answer Key

Question Number	Correct Answer	Feedback
1.	b	Development refers to how people grow, adapt and change over the course of their lifetimes. These developmental changes occur physically in personality, socioemotionally, cognitively and in language.
2.	c	Today, it is widely accepted that nature and nurture combine to influence development with some biological factors playing a stronger role in some aspects, like physical development, and environmental factors playing a stronger role in others such as moral development.
3.	a	Effective teaching strategies must take into account students' ages and stages of cognitive development.
4.	d	Continuous theories of development assume that development occurs in a smooth progression as skills develop and the environment provides experiences.
5.	a	In contrast to continuous theories of development, discontinuous theories of development focus on inborn factors rather than environmental influences.
6.	d	In Piaget's view, knowledge comes from action.
7.	c	Piaget's theory of cognitive development proposes that a child's intellect, or cognitive abilities, progresses through four distinct stages.
8.	c	Piaget believed all children are born with an innate tendency to make sense of their environments by creating schemes or schemata.

9.	a	Adaption is the process of adjusting schemes in response to the environment by means of assimilation and accommodation.
10.	a	Assimilation occurs when a baby incorporates new objects or experiences into an existing scheme.
11.	b	Accommodation occurs when a new object does not fit the child's existing scheme.
12.	c	Sometimes, when old ways of dealing with the world simply don't work, a child might modify an existing scheme in light of new information or a new experience, a process called accommodation.
13.	d	Piaget's theory of development represents constructivism, a view of cognitive development as a process in which children actively build systems of meaning and understanding.
14.	c	Disequilibrium is an imbalance between what is understood and what is encountered.
15.	d	By presenting paradoxical examples, Mr. Nicely is creating an imbalance between what is understood and what is encountered. Piaget refers to this imbalance as disequilibrium.
16.	a	Piaget's theory of cognitive development includes four stages: sensorimotor, preoperational, concrete operational, formal operational.
17.	b	Lizzie has a scheme for mouse and is incorporating the squirrel into her existing scheme through the process of assimilation. When she realizes that the new object (squirrel) does not fit into the existing scheme (mouse) accommodation will be able to occur.
18.	c	The preoperational child has difficulty with the beaker of water problem because he is able to pay attention to only one aspect of an object or situation. This is referred to as centration. When the water is poured from the beaker to a shallow dish the child might say there is less water because he is focusing only on the height of the water, ignoring its width.
19.	b	The student who can reason through the addition and then subtraction of the problem is demonstrating the ability to perform a mental operation and then reverse one's thinking to return to the starting point.

20.	c	Athena is egocentric in her thinking. Egocentric refers to the belief that everyone views the world as you do.
21.	b	Children at this stage can form concepts, see relationships, and solve problems, but only as long as they involve objects and situations that are familiar.
22.	d	A hallmark of the sensorimotor period is the development of a grasp of object permanence. Piaget argues that infants must learn that objects are physically stable.
23.	c	Preschoolers have the ability to think about things and can use symbols to mentally represent objects.
24.	c	One characteristic common in the preoperational stage is centration: paying attention to only one aspect of a situation.
25.	b	An important task children learn during the concrete operational stage is seriation, or arranging things in a logical sequence.
26.	d	Transitivity is the ability to infer relationships between two objects based on comparison to another object.
27.	a	Children understand time and space well enough to draw a map from their home to school and are building an understanding of events in the past.
28.	d	Sometime around the onset of puberty, children's thinking begins to develop in to the form that is characteristic of adults, or the formal operational stage.
29.	b	The preadolescent begins to be able to think abstractly and to see possibilities beyond here and now.
30.	b	An individual's ability to use formal operations depends on the situation.
31.	b	The abilities that make up formal operational thought: thinking abstractly testing hypotheses, and forming concepts- are critical in the learning of higher order skills.
32.	a	Developmentally appropriate education is instruction that is felt to be adapted to the current developmental status of children rather than to their age alone.
33.	d	Sign systems are symbols that cultures create to help people think, communicate, and solve problems.

34.	d	Vygotsky's zone of proximal development is based on the idea that development is defined both by what a learner can do independently and by what the learner can accomplish with the help of a more skilled peer or adult.
35.	a	Scaffolding involves the support for learning and might include clues, reminders, encouragement and anything else which will allow the learner to grow in independence.
36.	a	The importance of Bronfenbrenner's bioecological approach is in emphasizing the interconnectedness of the many factors that influence a children's development.
37.	b	Emergent literacy refers to the knowledge and skills relating to reading that children usually develop from experience with books and other print media before the beginning of formal reading instruction in school.
38.	c	Early literacy developments depend on children's experiences at home and their exposure and learning about books and letters.

### Essay Key

1. Student should respond to two of the three scenarios and clearly identify: source of disequilibrium, accommodation, and resulting new scheme.

- Natalie: source of disequilibrium: applesauce drips off spoon; accommodation: learns how to keep spoon level so applesauce doesn't drip; new scheme: self feeding with spoon
- Eli: source of disequilibrium: numbers on gravestone and phone number; accommodation: learns numbers are dates, not phone numbers; new scheme: dates refer to birth and death
- Alonzo: source of disequilibrium: understanding of cognitive development is flawed; accommodation: understanding of children's development of operations; new scheme: differentiated, more complex, correct conceptualization of cognitive development.

2. Student should describe four educational beliefs or practices that are grounded in developmental ideas of Piaget. There are four main teaching implications drawn from Piaget's work. The first is the focus on the process of children's think, not just its products. The second is recognition of the crucial role of children's self-initiated, active involvement in learning activities. The third is a de-emphasis on practices aimed at developing adult like thinking. And the fourth is an understanding of individual differences in developmental progress.

3. According to Vygotsky, this style of teaching would not be effective. Vygotsky saw cooperative learning in which students of differing levels of ability are

grouped together as the most effective strategy to promote real learning. He also emphasized scaffolding where students are given supports and then begin to take more and more responsibility for their own learning so the independent nature of the assignments would not be effective for both reasons.

4. Bronfenbrenner described a “bioecological” model of human development. The focus of his model is on the social and institutional influences on a child’s development, from family, schools, churches, and neighborhoods to broader social and political influences, such as mass media and government. Bronfenbrenner’s main contribution was in showing how development is influenced at each of the levels of his model: macrosystem, exosystem, mesosystem, microsystem. Bronfenbrenner critiques the Piagetian view for its limited focus beyond the child.