CHAPTER 1
HISTORY, THEORY, AND RESEARCH STRATEGIES

CHAPTER-AT-A-GLANCE

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BRIEF CHAPTER SUMMARY

Developmental science is an interdisciplinary field of study devoted to understanding human constancy and change throughout the lifespan. Although great diversity exists among investigators who study development, all have a single goal in common: the desire to describe and identify those factors that influence consistencies and transformations in people from conception to death.

Theories of human development take a stance on three basic issues: (1) Is development a continuous or discontinuous process? (2) Is there one course of development or many possible courses? (3) Is development determined primarily by nature or nurture, and are individual differences stable or characterized by substantial plasticity? Modern theories include elements

from both sides of these debates. The lifespan perspective recognizes that great complexity exists in human change and the factors that underlie it. This perspective assumes that development is (1) lifelong, (2) multidimensional and multidirectional, (3) highly plastic, and (4) affected by multiple interacting forces.

The scientific study of human development dates to the late nineteenth and early twentieth centuries. After Charles Darwin constructed his theory of evolution in the nineteenth century, the scientific study of development evolved quickly. Sigmund Freud's psychosexual theory and Erik Erikson's psychosocial theory viewed development as discontinuous (occurring in stages), but Erikson added three adult stages to Freud's five stages of childhood.

The behaviorist perspective—rejecting the psychoanalytic concern with the unseen workings of the mind—focused on directly observable events: stimuli and responses. Albert Bandura's social learning theory emphasized modeling as a powerful source of development. Now described as social-cognitive, it is still influential today. Swiss cognitive theorist Jean Piaget, disagreeing with the behaviorists, developed a cognitive-developmental theory, based on the idea that children actively construct knowledge. Recent theoretical perspectives include information processing, which examines the human mind as a symbol-manipulating system; developmental cognitive neuroscience, which studies the relationship between changes in the brain and the development of cognitive processing and behavior patterns; ethology and evolutionary developmental psychology, which are concerned with the adaptive value of behavior; Lev Vygotsky's sociocultural theory, which looks at the role of culture; and Urie Bronfenbrenner's ecological systems theory, which examines development in the context of a complex system of relationships.

Research in human development, like all scientific research, begins with a hypothesis, or prediction about behavior drawn from a theory. Research methods commonly used to study development include systematic observation, self-reports, clinical, or case studies, of single individuals, and ethnographies of cultures or social groups.

Investigators of human development generally choose either a correlational research design, which looks at relationships but cannot determine causality, or an experimental design, which uses dependent and independent variables to determine cause and effect. Experiments may be carried out in the laboratory or in the field. To study how individuals change over time, investigators use longitudinal, cross-sectional, and sequential designs. Research that combines an experimental strategy with either a longitudinal or a cross-sectional approach is becoming increasingly common. Each method and design has both strengths and limitations. Finally, conducting research with human subjects poses special ethical dilemmas, particularly for children or elderly people who are ill or cognitively impaired.

LEARNING OBJECTIVES

After reading this chapter, you should be able to answer the following:

1.1 What is developmental science, and what factors stimulated expansion of the field (p. 5)

1.2 Identify three basic issues on which theories of human development take a stand. (pp. 5–7)

1.3 Describe the lifespan perspective on development. (pp. 7–14)

1.4 Describe the major early influences on the scientific study of development. (pp. 14–15)

1.5 What theories influenced human development research in the mid-twentieth century? (pp. 15–20)

1.6 Describe recent theoretical perspectives on human development. (pp. 20–27)

1.7 Identify the stand taken by each theory on the three basic issues of human development. (p. 27)

1.8 Describe methods commonly used in research on human development. (pp. 27–33)

1.9 Distinguish between correlational and experimental research designs, noting the strengths and limitations of each. (pp. 34–35)

1.10 Describe designs for studying development, noting the strengths and limitations of each. (pp. 35–39)

1.11 What special ethical concerns arise in research on human development? (pp. 39–40)

LECTURE OUTLINE

I. A SCIENTIFIC, APPLIED, AND INTERDISCIPLINARY FIELD (p. 5)
   A. **Developmental science** as a field of study is devoted to understanding constancy and change throughout the lifespan.
   B. Research in this area is *interdisciplinary* and has *applied* and scientific importance.

II. BASIC ISSUES (pp. 5–7)
   A. A **theory** is an orderly, integrated set of statements that describes, explains, and predicts behavior, and guides and gives meaning to observations. A theory's continued existence depends on *scientific verification.*
   B. Theories of human development take a stand on three basic issues:
      1. Is the course of development continuous or discontinuous?
      2. Does one course of development characterize all people, or are there many possible courses?
      3. What are the roles of genetic and environmental factors—nature and nurture—in development?
   C. Continuous or Discontinuous Development? (p. 6)
      1. In the **continuous** view, infants and preschoolers respond to the world in the same way as adults, and change is a process of gradually augmenting preexisting skills.
      2. In the **discontinuous** view, infants and children are unique in how they interact with the world, and new ways of understanding and responding to it emerge at specific times. Development takes place in **stages** and can occur fairly suddenly.
   D. One Course of Development or Many? (p. 6–7): Children and adults live in many-layered and complex **contexts** that shape development.
   E. Relative Influence of Nature and Nurture? (p. 7)
      1. Each theory of human development takes a stand on the age-old **nature–nurture controversy:** Are genetic or environmental factors more important?
      2. Theorists who emphasize the *stability* of individual characteristics typically stress the importance of *heredity.* Other theorists see development as having substantial **plasticity** throughout life—as open to change in response to influential experiences.
      3. Views of *stability versus plasticity* often vary across *domains,* or aspects, of development.

III. THE LIFESPAN PERSPECTIVE: A BALANCED POINT OF VIEW (pp. 7–14)
   A. Modern theories tend to recognize that development involves both continuous and discontinuous changes. This balanced view is largely due to the expansion of research from a nearly exclusive focus on the first two decades of life to include development in adulthood.
   B. The **lifespan perspective** is a leading dynamic systems approach that is based on the assumptions that development is (1) lifelong, (2) multidimensional and multidirectional, (3) highly plastic, and (4) affected by multiple, interacting forces.
   C. Development Is Lifelong (pp. 8–9): During each major period, significant changes occur in three overlapping and interacting domains: *physical, cognitive,* and *emotional/social.*
   D. Development Is Multidimensional and Multidirectional (p. 9): It is affected by an intricate blend of biological, psychological, and social forces, and at every period and within each domain it is a joint expression of growth and decline.
   E. Development Is Plastic (pp. 9–10, 11): Plasticity is evident at all ages, although both the capacity and opportunity for change are reduced over time. It varies greatly across individuals, in part depending on their **resilience.**
   F. Development Is Influenced by Multiple, Interacting Forces (pp. 10–14)
      1. Age-Graded Influences
         a. **Age-graded influences** are events that are fairly predictable in when they occur and how long they last.
         b. Age-graded influences are especially prevalent in childhood and adolescence, when biological changes are rapid and cultures impose many age-related experiences to ensure that young people acquire the skills they need to participate in their society.
      2. History-Graded Influences
         a. **History-graded influences** are forces unique to a particular era, such as wars, periods of economic prosperity or depression, and changing cultural values.
         b. History-graded influences explain why people born around the same time—called a *cohort*—tend to be alike in ways that set them apart from people born at other times.

3. Nonmormative Influences
    a. **Nonnormative influences** are irregular, unpredictable events that happen to just one person or a few people.
    b. Because they do not follow a predictable timetable, nonnormative events are difficult for researchers to capture and study.

IV. SCIENTIFIC BEGINNINGS (pp. 14–15)
  A. Darwin: Forefather of Scientific Child Study (p. 14)
    1. In the nineteenth century, British naturalist Charles Darwin constructed his *theory of evolution*, which emphasized the related principles of *natural selection* and *survival of the fittest.*
    2. Darwin noticed similarities in the prenatal growth of many species. Other scientists concluded that child development parallels the evolution of the human species. Although the belief proved inaccurate, it prompted researchers to make careful observations of children's behavior, giving rise to scientific child study.
  B. The Normative Period (pp. 14–15)
    1. G. Stanley Hall, founder of the child study movement, and his student Arnold Gesell regarded development as an automatic, genetically determined process.
    2. They launched the **normative approach** to child study, in which age-related averages are computed to represent typical development.
  C. The Mental Testing Movement (p. 15)
    1. French psychologist Alfred Binet and colleague Theodore Simon developed an intelligence test to identify children with learning problems in the Paris school system.
    2. The results sparked great interest in individual differences in development and quickly moved intelligence tests to the forefront of the nature–nurture controversy.

V. MID-TWENTIETH-CENTURY THEORIES (pp. 15–20)
  A. The Psychoanalytic Perspective (pp. 15–17)
    1. The **psychoanalytic perspective** assumes that people move through a series of stages in which they confront conflicts between biological drives and social expectations. How they resolve these conflicts determines psychological adjustment.
    2. Freud's Theory
      a. Sigmund Freud constructed a **psychosexual theory** of development that emphasizes that healthy personality development is determined by how parents manage their child's early sexual and aggressive drives.
      b. According to Freud, the three parts of the personality are integrated during five stages.
        (1) The *id* is the source of basic biological needs and desires.
        (2) The *ego* is the conscious, rational part of personality.
        (3) The *superego* is the conscience.
        (4) The relations among the id, ego, and superego determine an individual's basic personality.
      c. During childhood, the sexual impulses shift focus from the oral to the anal and then to the genital regions of the body.
        (1) To advance to each new stage, a child needs to receive the correct amount of gratification.
        (2) The early parent–child relationship substantially influences development.
      d. Freud's theory was eventually criticized for its overemphasis on sexuality and because it was culturally specific to the problems of sexually repressed, well-to-do adults in nineteenth-century Viennese society.
    3. Erikson's Theory
      a. Erik Erikson expanded Freud's views, creating a **psychosocial theory** that covered the entire lifespan and emphasized that the ego not only mediates between the id and the superego but also acquires attitudes and skills that make the individual an active, contributing member of society.
      b. Erikson added three adult stages to Freud's five stages of childhood. Unlike Freud, Erikson emphasized that normal development must be understood in relation to the cultural context in which it occurs.
    4. Contributions and Limitations of the Psychoanalytic Perspective
      a. A strength of psychoanalytic theory is its emphasis on the value of studying the individual's unique life history. It inspired a wealth of research on such topics as attachment, morality, and child-rearing practices.
      b. However, the psychoanalytic perspective is no longer in the mainstream of human development research because of its limitations.
        (1) Psychoanalytic theorists may have become isolated from the rest of the field because they were so strongly committed to the in-depth study of individuals that they failed to consider other methods.

(2) Many psychoanalytic ideas, such as psychosexual stages and ego functioning, are so vague that they are difficult or impossible to test empirically.

B. Behaviorism and Social Learning Theory (pp. 17–18)
   1. Traditional Behaviorism
      a. North American **behaviorism** began in the early twentieth century with the work of John Watson who, rejecting the psychoanalytic concern with the unseen workings of the mind, set out to create an objective science that focused on directly observable events—stimuli and responses.
      b. Inspired by Ivan Pavlov's experiments with dogs, Watson sought to find out if *classical conditioning* could be used to mold children's behavior.
      c. In another form of behaviorism, B. F. Skinner's *operant conditioning theory*, environmental *reinforcers* and *punishments* determine behavior.
   2. Social Learning Theory
      a. Albert Bandura promoted **social learning theory,** which emphasizes *modeling* as a powerful source of development.
      b. Bandura's theory today, now described as *social-cognitive*, focuses on the way we think about ourselves and other people.
      c. In this view, children develop *personal standards* for behavior and *a sense of self-efficacy* through observation of others and feedback about their own actions.
   3. Contributions and Limitations of Behaviorism and Social Learning Theory
      a. **Behavior modification** is used to treat many undesirable behaviors in children and adults, ranging from poor time management to extreme fears.
      b. Many theorists believe that social learning theory and behaviorism offer too narrow a view of environmental influences and underestimate people's contributions to their own development.

C. Piaget's Cognitive-Developmental Theory (pp. 18–20)
   1. According to the **cognitive-developmental theory,** children actively construct knowledge as they manipulate and explore their world.
   2. Piaget's Stages: Children's understanding is different from adults', and they move through four broad developmental stages:
      a. Cognitive development begins in the *sensorimotor stage* with the baby's use of the senses and movements to explore the world.
      b. Preschool children are in the *preoperational stage,* characterized by symbolic but illogical thinking.
      c. In the *concrete operational stage,* the school-age child engages in more organized, logical reasoning.
      d. In the *formal operational stage,* thought becomes the abstract, systematic reasoning of adolescents and adults.
   3. Contributions and Limitations of Piaget's Theory
      a. Piaget convinced the field that children are active learners, and he explored children's reasoning about the social as well as the physical world.
      b. His stages sparked a wealth of research on children's conceptions and encouraged the development of educational programs based on direct contact with the environment.
      c. However, research indicates that Piaget underestimated the competencies of infants and preschoolers and that children's performance on Piagetian problems can be improved with training.
      d. Contrary to Piaget's conclusion, some lifespan theorists believe that important transformations occur in adulthood.
      e. Today, many theorists accept the view that change is more gradual than Piaget posited. Others emphasize continuous gains in cognition, and still others focus on the role of social and cultural contexts.

VI. RECENT THEORETICAL PERSPECTIVES (pp. 20–27)

A. Information Processing (pp. 20–21)
   1. **Information-processing** researchers view the human mind as a symbol-manipulating system through which information flows. From the time information is presented to the senses at *input* until it emerges as a behavioral response at *output*, information is actively coded, transformed, and organized.
   2. They seek to clarify how both task characteristics and cognitive limitations—for example, memory capacity or available knowledge—influence performance.

3. The information-processing approach regards people as actively making sense of their own thinking, and sees development as a process of continuous change.
4. A great strength of information processing is its commitment to rigorous research methods, leading to findings that have important implications for education.
5. However, it has been better at analyzing thinking into its components than at putting them back together into a comprehensive theory.
6. In addition, the information-processing approach virtually ignores aspects of cognition that are not linear and logical, such as imagination and creativity.

B. Developmental Cognitive Neuroscience (pp. 21–22)
1. **Developmental cognitive neuroscience**, a relatively new area of investigation, brings together researchers from psychology, biology, neuroscience, and medicine to study the relationship between changes in the brain and the developing person's cognitive processing and behavior patterns.
2. Improved methods for analyzing brain activity while children and adults perform various tasks have greatly enhanced knowledge of relationships between brain functioning, cognitive capacities, and behavior.
3. Neuroscientists are rapidly identifying the types of experiences that support or undermine brain development at various ages.

C. Ethology and Evolutionary Developmental Psychology (pp. 22–23)
1. **Ethology** is concerned with the adaptive, or survival, value of behavior and its evolutionary history.
2. Zoologists Konrad Lorenz and Niko Tinbergen observed behavior patterns that promote survival. The best known of these is *imprinting.*
3. Observations of imprinting led to a major concept in human development: the *critical period,* a limited time span during which the individual is biologically prepared to acquire certain adaptive behaviors but needs the support of an appropriately stimulating environment.
4. A **sensitive period** is a time that is optimal for certain capacities to emerge and in which the individual is especially responsive to environmental influences.
5. British psychoanalyst John Bowlby studied the development of human infant–caregiver attachment, a process that he saw as having lifelong consequences for human relationships.
6. Research in **evolutionary developmental psychology** examines the adaptive value of specieswide cognitive, emotional, and social competencies as those competencies change with age. It aims to understand the entire *person–environment system.*
7. Recently, evolutionary psychologists have begun to address the adaptiveness of human longevity—why adults live as much as one-fourth to one-third of their years after their children are grown.

D. Vygotsky's Sociocultural Theory (pp. 23–24)
1. Russian psychologist Lev Vygotsky's **sociocultural theory** focuses on how *culture* is transmitted to the next generation. He believed that *social interaction,* especially dialogues with more knowledgeable members of society, is necessary for children to acquire their culture's ways of thinking and behaving.
2. Like Piaget, Vygotsky saw children as active, constructive beings, but he also viewed cognitive development as a *socially mediated process,* dependent on support from adults and more-expert peers.
3. Vygotsky inspired research demonstrating that people in every culture develop unique strengths, but his theory neglected the biological side of development.

E. Ecological Systems Theory (pp. 24–27)
1. Urie Bronfenbrenner's **ecological systems theory** views the person as developing within a complex *system* of relationships affected by multiple levels of the surrounding environment.
2. The Microsystem: The innermost level of the environment is the **microsystem**—activities and bidirectional relationships in the person's immediate surroundings.
3. The Mesosystem: The second level, the **mesosystem,** encompasses connections between microsystems.
4. The Exosystem: The **exosystem** consists of social settings that do not contain the developing person but affect the individual's experiences in the immediate settings. For example, when family time is at the mercy of external forces, such as when parents commute several hours a day, family routines are threatened.
5. The Macrosystem: The outermost level, the **macrosystem,** includes a culture's laws, values, customs, and resources.
6. A Dynamic, Ever-Changing System
   a. Throughout life, *ecological transitions,* or shifts in individuals' roles or settings, are important turning points in development.
   b. The **chronosystem** is the temporal dimension of Bronfenbrenner's model.

VII. COMPARING AND EVALUATING THEORIES (pp. 27, 28): Theories of development emphasize various domains of development and differ in their views of the development process.

VIII. STUDYING DEVELOPMENT (pp. 27–39)

A. Research begins with a prediction about behavior, called a *hypothesis.* Researchers must decide on an overall plan to test the hypothesis—the *research design*—and on a *research method.* An understanding of research strategies is important in evaluating results.

B. Common Research Methods (pp. 28–33)

1. Systematic Observation
    a. With **naturalistic observation,** the researcher goes into the field, or natural environment, and records the behavior of interest.
        (1) A strength of this method is that researchers see the actual everyday behaviors they hope to explain.
        (2) A limitation is that not all individuals have the same opportunity to display a particular behavior in everyday life.
    b. With **structured observations,** the investigator sets up a laboratory situation that evokes the behavior of interest, giving every participant equal opportunity to display the response.
    c. Systematic observation provides invaluable information about actual behavior but tells us little about the reasoning behind the responses.
2. Self-Reports
    a. In a **clinical interview,** researchers ask questions in a flexible, conversational style to probe for the participant's point of view.
        (1) Strengths of this method are that it allows exact expression of a participant's feelings and perceptions, and it can provide a large amount of information in a fairly brief period.
        (2) Limitations include potential inaccuracy in participants' reports of their thoughts and the method's reliance on verbal ability and expressiveness.
    b. In a **structured interview,** each participant is asked the same set of questions in the same way.
        (1) This method is efficient, produces briefer answers, allows the researcher to specify areas of interest, and can be used with groups of individuals.
        (2) However, structured interviews do not yield the same depth of information as a clinical interview. Currently, more researchers are combining the two approaches to see if they yield consistent findings.
3. The Clinical, or Case Study, Method
    a. The goal of the **clinical, or case study, method** is to gather a complete picture of an individual through interviews, observation, and test scores.
    b. This method is well-suited to studying the development of types of individuals who are few in number and vary widely in characteristics, such as *prodigies.*
    c. One drawback of this method is that information is often collected unsystematically and subjectively, permitting researchers' theoretical preferences to bias their observations and interpretations.
4. Methods for Studying Culture
    a. To study the impact of culture, researchers have developed procedures for cross-cultural and multicultural research.
    b. To uncover the *cultural meanings* of behaviors, researchers use a technique borrowed from anthropology, **ethnography**—a descriptive, qualitative technique aimed at understanding a culture or a distinct social group through *participant observation.*
    c. Some ethnographies take in many aspects of experience, whereas others focus on a few issues, such as barriers to effective parent–school communication in a Mexican-American community.

C. General Research Designs (pp. 34–35)

1. Correlational Design
    a. In a **correlational design,** researchers gather information on individuals, generally in natural life circumstances, without altering their experiences in any way. Then they look at relationships between participants' characteristics and their behavior or development.
    b. Correlational studies have one major limitation: We cannot infer cause and effect.
    c. Researchers often examine relationships by using a **correlation coefficient,** a number that describes how two measures, or variables, are associated with each other.

2. Experimental Design
    a. An **experimental design** permits inferences about cause-and-effect relationships because researchers use an evenhanded procedure to assign participants to two or more treatment conditions.
    b. The **independent variable** is the one the investigator manipulates, anticipating that this will cause changes in the other variable being measured, the **dependent variable.**
    c. To control for participants' characteristics that might reduce the accuracy of the findings, investigators use **random assignment** of participants to treatment conditions.
3. Modified Experimental Designs: Field and Natural Experiments
    a. In *field experiments,* researchers randomly assign participants to different treatments in natural settings rather than in the laboratory.
    b. In *natural, or quasi-, experiments,* investigators compare treatments that already exist, such as different family environments and workplaces. However, natural experiments cannot achieve the precision and rigor of true experimental research.

D. Designs for Studying Development (pp. 35–39)
1. The Longitudinal Design
    a. In a **longitudinal design,** participants are studied repeatedly, and changes are noted as they get older.
    b. This approach identifies common developmental patterns as well as individual differences.
    c. This design also permits examination of relationships between early and later events and behaviors.
2. Problems in Conducting Longitudinal Research
    a. Over time, participants may move away or drop out of the research.
    b. From repeated study, participants may revise their responses.
    c. Participants' performance may improve as a result of *practice effects*—better test-taking skills and increased familiarity with the test—not because of factors commonly associated with development.
    d. The most widely discussed threat to longitudinal findings is **cohort effects:** Individuals born in the same time period are influenced by a particular set of historical and cultural conditions. Results based on one cohort may not apply to people developing at other times.
3. The Cross-Sectional Design
    a. In the **cross-sectional design,** groups of people differing in age are studied at the same point in time.
    b. The cross-sectional design is an efficient strategy for describing age-related trends and avoids such difficulties as participant dropout or practice effects.
4. Problems in Conducting Cross-Sectional Research
    a. Individual differences in development cannot be detected.
    b. Results may suffer from cohort effects.
5. Improving Developmental Designs
    a. Sequential Designs
        (1) In **sequential designs,** investigators conduct several similar cross-sectional or longitudinal studies (called *sequences*).
        (2) The sequences might study participants over the same ages but in different years, or they might study participants over different ages but during the same years.
        (3) By uncovering cohort effects, sequential designs help explain diversity in development.
    b. Combining Experimental and Developmental Designs
        (1) Longitudinal and cross-sectional research designs permit only correlational inferences.
        (2) To find causal links between experiences and development, researchers sometimes manipulate the experiences. Research that combines an experimental strategy with either a longitudinal or a cross-sectional approach is becoming increasingly common.

IX. ETHICS IN LIFESPAN RESEARCH (pp. 39–40)

A. To protect participants from exploitation, special guidelines for research have been developed.
B. Children's immaturity makes it difficult for them to evaluate the meaning of their research participation, while elderly people may be unable to make voluntary or informed choices.
C. Research risks must be weighed by *institutional review boards (IRBs)* against the potential value of the information to be gained, with preference always given to protecting participants' interests.
D. *Informed consent* requires special interpretation when participants cannot fully appreciate the research goals and activities.

E. When deception and concealment are used in research, the investigator must provide *debriefing*—a full account and justification of activities after the research session is over.
F. Deception may have serious emotional consequences for children, and many experts believe it should be used only if the risk of harm is minimal.

LEARNING ACTIVITIES

LEARNING ACTIVITY 1.1
What Is Your Stance on the Three Basic Issues of Human Development? (pp. 5–7)

To help students better understand the three basic issues of human development, present this exercise as an in-class assignment. The activity will help students express their own viewpoints on some of the controversies in the field of human development.

Directions: The following four pairs of statements relate to basic issues of human development. Read each statement carefully. Then select the statement in each pair that more closely reflects your own view.

1. A. Development is a continuous, gradual progression, with new abilities, skills, and knowledge gradually added at a relatively uniform pace.
   B. Development occurs at different rates, alternating between periods of little change and periods of abrupt, rapid change.
2. A. All humans follow the same general sequence of development.
   B. Each individual has a unique course of development.
3. A. Children respond to the world in much the same way as adults. The main difference is that children's thinking is less sophisticated and complex than adults'.
   B. Children have unique ways of thinking about and responding to the world that are very different from those of adults.
4. A. An individual's personality is mostly determined by heredity.
   B. An individual's personality can be modified through caregiving experiences.

Next, have students break into small groups and discuss their answers. What is their stance on the three basic issues of human development? Which theories take a stance similar to their own? If students had to choose a theory that best represents their own view of development, would they choose a single theory or would they select certain components of several theories? What aspects of their chosen theory (or theories) make it more attractive than the others?

LEARNING ACTIVITY 1.2
Keeping a Theory / Research Notebook (pp. 7–27, 28)

Given the many developmental theories that exist, students are likely to find some more appealing and plausible than others. Encourage students to construct a systematic list of their theoretical likes and dislikes by keeping a theory / research notebook. For each theory, students should list the concepts and principles they find important and those they believe to be inadequate or incorrect. As they learn more throughout the course, they can revise their opinions, noting research that supports their changing views. At the end of the course, students should have developed a personal perspective on human development, which may emphasize one theory or blend aspects of several or many theories.

LEARNING ACTIVITY 1.3
Thinking About Resilience (pp. 10–11)

Ask students to think of someone they know who has overcome adversity. They should briefly describe the person's experiences and then consider factors that contributed to resilience. For example, what personal characteristics does the individual possess that helped him or her overcome hardship? Did the individual have a warm parental relationship or access to social support outside the family? What community resources or opportunities were available?

LEARNING ACTIVITY 1.4
True or False: Mid-Twentieth-Century Theories and Recent Theoretical Perspectives (pp. 15–27, 28)

Present the following exercise as an in-class activity or quiz.

Directions: Read each of the following statements and indicate whether it is *True* (T) or *False* (F).

_____ 1. According to Freud, in each stage of psychosexual development, parents walk a fine line between permitting too much or too little gratification of their child's basic needs.
_____ 2. Both Freud and Erikson pointed out that normal development must be understood in relation to each culture's life situation.
_____ 3. Behaviorism and social learning theory have been praised for acknowledging people's contributions to their own development.
_____ 4. In Piaget's theory, as the brain develops and children's experiences expand, they move through four broad stages, each characterized by qualitatively distinct ways of thinking.
_____ 5. Research indicates that Piaget underestimated the competencies of infants and preschoolers.
_____ 6. Information-processing researchers view the mind as a symbol-manipulating system through which information flows.
_____ 7. Evolutionary psychologists are solely concerned with the biological bases of development.
_____ 8. Vygotsky believes that social interaction is necessary for children to acquire the ways of thinking and behaving that make up a community's culture.
_____ 9. The mesosystem is made up of social settings that do not contain the developing persons but nevertheless affect experiences in immediate settings.
_____ 10. Bronfenbrenner characterized the environment as dynamic and ever-changing.

Answers:

1. T
2. F
3. F
4. T
5. T
6. T
7. F
8. T
9. F
10. T

LEARNING ACTIVITY 1.5
Applying Ecological Systems Theory to a "Hot Topic" in Child or Adult Development (pp. 24–27)

Have students form small groups and select a "hot topic" in child or adult development, such as the effects of divorce, child abuse and neglect, quality of child care, quality of elder care, the obesity epidemic, public policies for children or senior citizens, or sex education programs in the schools. Once students have selected their topic, ask them to consider how each level of the environment may affect development. Students should also consider bidirectional influences and the role of third parties.

LEARNING ACTIVITY 1.6
Thinking About Research Methods and Designs (pp. 27–39)

Present the following scenarios to students. For each scenario, students should answer the following questions: What research method and design would you use for the study, and why? Would there be any special ethical considerations with this type of study? If so, what are they?

(1) An investigator is interested in determining whether infant child care leads to an insecure attachment bond between children and their mothers during the first year of life as well as into the preschool years.
(2) An investigator is interested in determining whether a new drug is as effective as diet and exercise in lowering cholesterol levels in an adult sample.
(3) An investigator is interested in determining whether sociability in children is related to school achievement and whether this relationship varies for children in preschool, grade school, and middle school.

LEARNING ACTIVITY 1.7
Cross-Sectional, Longitudinal, and Sequential Research Designs (pp. 35–39)

Present the following exercise as an in-class activity or quiz.

Directions: The following statements pertain to cross-sectional, longitudinal, and sequential research designs. For each statement, determine which research design is being described.

1. The researcher studies groups of participants who differ in age at the same point in time.
2. The researcher is interested in whether frequent exposure to violent television in early childhood predicts aggressive and antisocial behavior in adulthood.
3. Reveals cohort effects.
4. Age-related changes may be distorted because of biased sampling, participant dropout, practice effects, or cohort effects.
5. The researcher follows a sequence of samples (two or more age groups), collecting data on them at the same points in time.
6. Does not permit the study of individual developmental trends. Age differences may be distorted because of cohort effects.
7. The researcher is interested in age-related changes in adults' problem-solving skills. The researcher selects three samples—adults in their thirties, adults in their fifties, and adults in their seventies—and tracks them for five years.
8. The researcher is interested in how children of different ages process traumatic events, such as school violence. The researcher recruits children in grades 3, 6, 9, and 12 for the study and interviews them about the mass shooting in Newtown, Connecticut.
9. The researcher studies the same group of participants repeatedly at different ages.

Answers:

1. Cross-sectional
2. Longitudinal
3. Sequential
4. Longitudinal
5. Sequential
6. Cross-sectional
7. Sequential
8. Cross-sectional
9. Longitudinal

ASK YOURSELF. . .

REVIEW: Distinguish age-graded, history-graded, and nonnormative influences on lifespan development. Cite an example of each in Sofie's story. (pp. 3–5, 10–12)

Age-graded influences are events that are strongly related to age and therefore fairly predictable in when they occur and how long they last. As a baby, Sofie experienced age-graded influences when she engaged in exploratory play, crawled, and pulled herself up, as would be expected. She entered elementary school at the typical age.

History-graded influences are forces unique to a particular era. For Sofie, the rise of the Nazis and World War II had a significant impact on the events of her life. Her family had to flee Germany, eventually moving to the United States. She also lost many of her loved ones in the Holocaust. In the United States, Sofie was able to launch a teaching career in midlife, which might not have been possible in another time or place.

Sofie's story also includes several nonnormative influences—irregular events that do not follow a predictable timetable. By adolescence, she had become an accomplished pianist. And although most German girls married by age 20, Sofie decided to attend university instead, delaying marriage and childbearing. At 50, she returned to school for her teaching credential and launched a career—a path not typically taken. Finally, Sofie's struggle with cancer and her premature death represent events that were unique to her experience.

CONNECT: What stand does the lifespan perspective take on the issue of *one course of development* or many? How about the relative influence of *nature and nurture?* Explain. (pp. 7–8)

Lifespan theorists tend to take a balanced view on these basic issues of human development, avoiding the extremes while acknowledging the merits of both positions. For example, they are likely to recognize that development has both universal features and those unique to each individual and his or her contexts. Likewise, rather than focusing on nature versus nurture, lifespan researchers tend to regard heredity and environment as inseparably interwoven, each affecting the potential of the other to modify the child's traits and capacities. They envision development as a *dynamic system*, extending from conception to death and molded by a complex network of biological, psychological, and social influences.

APPLY: Anna, a high school counselor, has devised a program that integrates classroom learning with vocational training to help adolescents at risk for school dropout stay in school and transition smoothly to work life. What is Anna's position on *stability versus plasticity* in development? Explain. (pp. 9–10)

Anna's program reflects her emphasis on *plasticity* in development—the idea that change is possible and even likely if it is supported by new experiences. First, she takes the position that environmental influences, not just heredity, are important. Second, by devising a program for adolescents, she rejects the idea that early experiences establish lifelong behavioral patterns that cannot be fully overcome by later, more positive experiences. Taking a more optimistic view, Anna believes that high school students who are at risk for dropout will benefit from the program she has developed, because it will provide positive experiences that will enable them to overcome adversity.

REFLECT: Describe an aspect of your development that differs from a parent's or a grandparent's when he or she was your age. Using influences highlighted by the lifespan perspective, explain this difference in development. (pp. 7–13)

This is an open-ended question with no right or wrong answer.

REVIEW: What aspect of behaviorism made it attractive to critics of the psychoanalytic perspective? How did Piaget's theory respond to a major limitation of behaviorism? (pp. 17–20)

The early behaviorists rejected the psychoanalytic concern with the unseen workings of the mind. They sought, instead, to create an objective science of psychology that would study directly observable events—stimuli and responses. As psychologists wondered whether behaviorism might offer a more direct and effective explanation of social behavior than the less precise concepts of psychoanalytic theory, several kinds of social learning theory emerged. The most influential emphasizes *modeling*, also known as *imitation* or *observational learning*, as a powerful source of development. However, modeling and reinforcement—two important themes of behaviorism—were criticized for offering too narrow a view of important environmental influences, and also for underestimating people's contributions to their own development.

In response to these concerns, Piaget maintained that children's learning does not depend on reinforcers, such as rewards from adults. Rather, children actively construct knowledge as they manipulate and explore their world. Besides investigating children's understanding of their physical environment, Piaget explored their reasoning about the social world. His cognitive-developmental perspective convinced the field that children are active learners whose minds consist of rich structures of knowledge.

CONNECT: Although social learning theory focuses on social development and Piaget's theory on cognitive development, each has enhanced our understanding of other domains. Mention an additional domain addressed by each theory. (pp. 18–19)

Albert Bandura's social learning theory emphasizes modeling (also known as imitation or observational learning) as a source of development. In addition to its original emphasis on social development, the theory now recognizes the importance of cognition, or thinking. As a result, it is often known as a *social-cognitive*, rather than a social learning, approach. In addition to explaining children's social development, social-cognitive theory provides insight into how individuals control their own development in the cognitive domain through the attitudes, values, and convictions they acquire about themselves.

Piaget's cognitive-developmental theory focuses on cognitive development but also explores how children reason about the social world. It has sparked a great deal of research on children's conceptions of themselves, other people, and human relationships—all aspects of the social/emotional domain.

APPLY: A 4-year-old becomes frightened of the dark and refuses to go to sleep at night. How would a psychoanalyst and a behaviorist differ in their views of how this problem developed? (pp. 15–18)

According to the psychoanalytic perspective, children move through a series of stages in which they confront conflicts between biological drives and social expectations. In this view, fear of the dark reflects an unconscious motivation or deep-seated anxiety within the child. A psychoanalyst might conclude, for example, that the child's fear really represents anxiety about nighttime separation from the parent. Once the anxiety is resolved, the fear will subside.

In contrast, behaviorists look at the effects on behavior of directly observable events, not at the inner workings of the mind. From a behaviorist perspective, a child would be afraid of the dark if previous experiences in the dark were unpleasant. Perhaps the child heard a sudden, loud noise at night or was frightened by the visual images of a nightmare. On the basis of these experiences, the child would be conditioned to respond fearfully to being in the dark.

REFLECT: Describe a personal experience in which you received feedback from another person that strengthened your sense of self-efficacy—belief that your abilities and characteristics will help you succeed. (p. 18)

This is an open-ended question with no right or wrong answer.

REVIEW: Explain how each recent theoretical perspective regards children and adults as active contributors to their own development. (pp. 20–25)

Information processing: Like Piaget's cognitive-developmental theory, the information-processing approach views people as actively making sense of their own thinking. In this view, the human mind is a symbol-manipulating system through which information flows. From the time it is presented to the senses at input until it emerges as a behavioral response at output, information is actively coded, transformed, and organized. When presented with a task, children and adults perform a set of mental operations and experiment with various strategies in their attempts to solve the problem.

Ethology and evolutionary developmental psychology: Both ethologists and evolutionary developmental psychologists are interested in the evolutionary history of behavior and its adaptive, or survival, value. For instance, infant smiling, babbling, grasping, and crying are built-in social signals that encourage the caregiver to approach, care for, and interact with the baby. By keeping the parent near, these behaviors help ensure that the infant will be fed, protected from danger, and provided with stimulation and affection necessary for healthy growth.

Vygotsky's sociocultural theory: Vygotsky's theory focuses on how *culture* is transmitted to the next generation. According to Vygotsky, *social interaction*—in particular, cooperative dialogues between children and more knowledgeable members of society—is necessary for children to acquire the ways of thinking and behaving that make up a community's culture. Vygotsky agreed with Piaget that children are active, constructive beings. But whereas Piaget emphasized children's independent efforts to make sense of their world, Vygotsky viewed cognitive development as a *socially mediated process*, in which children depend on assistance from adults and more-expert peers as they tackle new challenges.

Ecological systems theory: Ecological systems theory views the person as developing within a complex system of relationships affected by multiple levels of the surrounding environment. The child's biologically influenced dispositions join with environmental forces to mold development. Because all relationships are bidirectional, adults affect children's behavior, but children's biologically and socially influenced characteristics also affect adults' behavior. For example, a friendly, attentive child is likely to evoke positive, patient reactions from parents, whereas an irritable or distractible child is more likely to receive impatience, restriction, and punishment. In ecological systems theory, the individual and the environment form a network of interdependent effects that, together, determine the course of development.

CONNECT: Is ecological systems theory compatible with assumptions of the lifespan perspective—development as lifelong, multidirectional, highly plastic, and influenced by multiple, interacting forces? Explain. (pp. 8–13, 24–25)

Bronfenbrenner's ecological systems theory—which views the person as developing within a complex system of relationships affected by multiple levels of the surrounding environment—is consistent with the assumptions of the lifespan perspective. In this view, the environment is a series of nested structures, including but also extending beyond the home, school, neighborhood, and workplace settings, in which people spend their everyday lives. Each layer of the environment is viewed as having a powerful impact on development.

Like the lifespan perspective, ecological systems theory stresses that all relationships are multidirectional. For example, adults affect children's behavior, but children's biologically and socially influenced characteristics—their physical attributes and personalities—also affect adults' behavior. Further, Bronfenbrenner's concept of the *chronosystem*, representing the dynamic, ever-changing nature of environmental influences, underscores the lifelong, plastic nature of development, in which person and environment form a network of interdependent effects.

APPLY: Mario wants to find out precisely how children of different ages recall stories. Anna is interested in how adult–child communication in different cultures influences children's storytelling. Which theoretical perspective has Mario probably chosen? How about Anna? Explain. (pp. 20–21, 23–24)

Mario has probably chosen the information-processing perspective. He would likely use a flowchart to map the precise steps children use to recall stories. He would analyze each of these steps separately and would be able to compare them in detail for children of different ages.

Anna has chosen the sociocultural perspective, focusing on how culture—a social group's values, beliefs, customs, and skills—is transmitted to the next generation through social interaction. For example, she might compare the ways children in different cultures engage in storytelling with adults and older peers and how these interactions help them develop storytelling skills that are valued within their culture.

REFLECT: To illustrate the chronosystem in ecological systems theory, select an important event from your childhood, such as a move to a new neighborhood, a class with an inspiring teacher, or parental divorce. How did the event affect you? How might its impact have differed had you been five years younger? How about five years older? (p. 25)

This is an open-ended question with no right or wrong answer.

REVIEW: Why might a researcher choose structured observation over naturalistic observation? How about the reverse? (pp. 28–30)

Naturalistic observation allows investigators to see directly the everyday behaviors they hope to explain. However, not all individuals have the same opportunity to display a particular behavior in everyday life. To deal with this limitation, researchers may choose *structured observation,* in which the investigator sets up a laboratory situation that evokes the behavior of interest so that every participant has equal opportunity to display the response. In structured observation, however, there is no way to ensure that participants will behave in the laboratory as they do in everyday life.

CONNECT: What strengths and limitations do the clinical, or case study, method and ethnography have in common? (pp. 30–32)

Both the clinical method and ethnography are descriptive, qualitative techniques for studying human development. The clinical method is concerned primarily with observing and understanding a single individual; ethnography concentrates on understanding a culture or a distinct social group. A major strength of both methods is that they yield rich, detailed descriptions that offer insights into many aspects of experience and the multiple factors affecting development. A limitation of both the clinical method and ethnography is that researchers' theoretical preferences or cultural values may lead them to observe selectively or misinterpret what they see. Another limitation of both methods is that findings cannot be applied to individuals or settings other than the ones studied.

APPLY: A researcher wants to study the thoughts and feelings of parents on active duty in the military and those of their school-age and adolescent children. Which method should she use? Why? (p. 30)

The researcher should use self-reports, as they are well-suited for investigating participants' thoughts and feelings. One type of self-report, the clinical interview, permits individuals to display their thoughts in terms that are as close as possible to the way they think in everyday life. It can also provide a large amount of information in a fairly brief period.

Another type of self-report is the structured interview, in which each participant is asked the same questions in the same way. This approach avoids the risk that responses will reflect the manner of interviewing rather than real differences in the way individuals think about a topic. It is also more efficient than the clinical interview: Answers are briefer, and researchers can obtain an entire group's written responses simultaneously. However, structured interviews do not yield the same depth of information as a clinical interview.

REFLECT: Reread the description of nonnormative influences on page 12, and cite an example from your own life. Which method would be best suited to studying the impact of such a nonnormative event on development? (pp. 30–31)

A self-report method, such as the clinical interview or the clinical, or case study, method, would be well-suited to studying the impact of a nonnormative event on development. These methods gather rich, detailed information about an individual, including events that are unique to a single person.

REVIEW: Explain how cohort effects can affect the findings of both longitudinal and cross-sectional studies. How do sequential designs reveal cohort effects? (pp. 37–38)

Both longitudinal and cross-sectional studies can be influenced by cohort effects—the particular set of historical and cultural conditions that influence individuals born in the same time period. Therefore, results based on one cohort may not apply to people developing at other times. For example, a longitudinal study of lifespan development would probably result in quite different findings if it were carried out in the first decade of the twenty-first century, around the time of World War II, or during the Great Depression of the 1930s. Similarly, a cross-sectional design that compares 10-year-old cohorts, 20-year-old cohorts, and 30-year-old cohorts—groups born and reared in different years—may not really identify age-related changes. Instead, it may reflect unique experiences associated with the historical period in which the age groups were growing up.

In sequential designs, researchers overcome some of these limitations by conducting several similar cross-sectional or longitudinal studies, or *sequences,* at varying times. Sequential designs permit researchers to find out whether cohort effects are operating by comparing people of the same age who were born in different years. If the samples do not differ on the measured variables, the researcher can rule out cohort effects.

CONNECT: Review the study of the Family Check-Up, described on page 35. Explain how it combines an experimental with a developmental design. What are the independent and dependent variables? Is its developmental approach longitudinal or cross-sectional? (pp. 35–37)

This study used an experimental design where researchers randomly assigned families to either a brief intervention condition (the Family Check-Up) or a no-intervention control group. The independent variable in this study was group assignment—Family Check-Up intervention or no-intervention control group. The researchers were interested in seeing whether this intervention would lead to improvements in family functioning and child problem behaviors—the dependent variable.

Its developmental approach was longitudinal: The same participants were studied at different points in time to determine whether the intervention was effective.

APPLY: A researcher compares older adults with chronic heart disease to those with no major health problems and finds that the first group scores lower on mental tests. Can the researcher conclude that heart disease causes a decline in intellectual functioning in late adulthood? Explain. (pp. 34–35)

Because this study uses a correlational design, the researcher cannot conclude that heart disease *causes* declines in intellectual functioning. The study does not reveal whether heart disease is the cause of the lower mental test scores or if, instead, a third variable—for example, poor diet and lack of exercise—is causing both heart disease and declines in intellectual functioning in late adulthood.

REFLECT: Suppose a researcher asks you to enroll your baby in a 10-year longitudinal study. What factors would lead you to agree and stay involved? Do your answers shed light on why longitudinal studies often have biased samples? (pp. 35–37)

This is an open-ended question with no right or wrong answer.

REVIEW: What special steps must investigators take in conducting studies of children and the aged to ensure protection from harm and informed consent? (pp. 39–40)

When children or the aged take part in research, complex ethical concerns arise. All participants have the right to be protected from physical or psychological harm in research. When harm seems possible, investigators should find other means for obtaining the desired information or abandon the research.

The principle of *informed consent*—participants' right to have explained to them, in language appropriate to their level of understanding, all aspects of a study that might affect their willingness to participate—requires special interpretation when individuals cannot fully appreciate the research goals and activities. Parental consent is meant to protect the safety of children whose ability to decide is not yet fully mature. As soon as children are old enough to appreciate the purpose of the research, typically around age 7, their own informed consent should be obtained in addition to parental consent.

The elderly should not be stereotyped as incompetent to make their own decisions about participating in research activities. Nevertheless, extra measures must be taken to protect those who are cognitively impaired or who reside in settings for the chronically ill. In these instances, potential participants should be asked to appoint a surrogate decision maker. If they cannot do so, then someone should be named by an institutional review board, after careful consultation with relatives and professionals who know the person well. As an added precaution, if the elderly person is incapable of consenting, and the risks of the research are more than minimal, then the study should not be done unless it is likely to benefit the participant directly.

CONNECT: In the field experiment on the Family Check-Up (see page 35), why is it ethically important for the researchers to offer the intervention, or a beneficial alternative, to the no-intervention control group after completion of the study? (pp. 39–40)

If experimental treatments believed to be beneficial are under investigation, participants in control groups have the right to alternative beneficial treatments if they are available. In this case, the Family Check-Up intervention was found to have a positive impact on parenting practices and child problem behaviors. Because the intervention led to beneficial outcomes, the researchers should provide an alternative treatment to the no-intervention control group.

APPLY: As a researcher gathered observations of the activities of several elderly adults with cognitive impairments in a nursing home, one resident said, "Stop watching me!" How should the researcher respond, and why? (pp. 39–40)

The rights of research participants include the right to be protected from physical or psychological harm and the right to discontinue participation in research at any time. Participants also have the right of informed consent; for elderly adults with cognitive impairments, this would include the appointment of a surrogate decision maker to act on their behalf. However, even if informed consent was obtained before the study began, the researcher is ethically obligated to end the observation because this participant is clearly distressed by the researcher's presence.

REFLECT: What ethical safeguards do you regard as vital in conducting research that requires deception of children? (p. 40)

This is an open-ended question with no right or wrong answer.

SUGGESTED READINGS

Bekman, S., & Aksu-Koç, A. (Eds.). (2009). *Perspectives on human development, family, and culture*. New York: Cambridge University Press. A collection of chapters highlighting the relationship between culture and human development. Topics include the importance of cross-cultural research, culture and family, cross-cultural conceptions of gender, and cultural considerations when developing intervention programs.

Cabeza, R., Nyberg, L., & Park, D. (2009). *Cognitive neuroscience of aging: Linking cognitive and cerebral aging.* New York: Oxford University Press. Explores a new scientific discipline, known as the cognitive neuroscience of aging. Topics include noninvasive measures of cerebral aging; the effects of cerebral aging on cognitive functions like perception, memory, and attention; and applications of brain research.

Miller, R. (2011). *Vygotsky in perspective.* New York: Cambridge University Press. Presents a contemporary view of Vygotsky's life and works, including how his concepts—such as the zone of proximal development and private, inner speech—are being applied in educational settings.

MEDIA MATERIALS

For details on individual video segments that accompany the DVD for *Development Through the Lifespan,* Sixth Edition, please see the DVD Guide for *Explorations in Lifespan Development.* The DVD and DVD Guide are available through your Pearson sales representative.

Additional DVDs that may be useful in your class are listed below. They are not available through your Pearson sales representative, but you can order them directly from the distributors. (See contact information at the end of this manual.)

Child Development Theorists: Freud to Erikson to Spock ... and Beyond (2009, Films Media Group, 22 min.). Using historical footage and photos in combination with video shot at daycare centers, this program offers an introduction to the major child development theorists and discusses how practical applications of their theories can benefit parents, caregivers, and educators. The theorists presented include Sigmund Freud, Maria Montessori, Arnold Gesell, Lev Vygotsky, Jean Piaget, Erik Erikson, and John Bowlby.

John Bowlby: Attachment Theory Across Generations (2007, Davidson Films, 35 min.). Featuring archival footage of Dr. Bowlby and a 20-year longitudinal case study of emotional development, this program examines how attachment relationships affect adult behaviors and how attachment patterns are transmitted through the generations.

Lev Vygotsky: One Man's Legacy Through His Life and Practice (2009, PHD Lowe Productions, 3 segments, 1 hr. 53 min. total). Using interviews, commentary from family members and educators, and archival photos and film footage, this series examines the life and work of Lev Vygotsky. Key Vygotskian concepts, such as the importance of make-believe play for early cognitive development and the zone of proximal development, are also discussed.

Non-Experimental Research Methods in Psychology (2006, Films Media Group, 34 min.). Using three studies on the effects of cell phone use, this program describes designing research that uses questionnaires, interviews, and naturalistic observation to gather data. Included are discussions of good questionnaire design, the use of unstructured interviews, and performing naturalistic observations. Part of the series *Understanding Psychology*.

Psychology Research in Context (2008, Films Media Group, 28 min.). Divided into five sections, this program illustrates the hypothetical-deductive model of scientific reasoning via Piaget's classic conservation experiment and Donaldson and McGarrigle's challenge of it. Also included are an analysis of statistics, the use of graphs to present data, and discussions of statistical significance and interpreting data. Part of the series *Understanding Psychology.*

Research Ethics (2008, Insight Media, 21 min.). This DVD examines ethical issues in social science, natural science, and health research, including plagiarism, crediting and citing sources, the use of human and animal subjects, informed consent, privacy, confidentiality, and conflicts of interest.

Research Methods in the Social Sciences (2005, Films Media Group, 4-part series, each segment 23 to 46 min.). Focusing primarily on research in psychology, this series explores qualitative and quantitative research methods used in a wide range of disciplines. Hosted and narrated by students, each program demonstrates how to test hypotheses, prepare experiments, and analyze data. Instructors' guides are available online.

Study of the Child: Theories of Development (2007, Films Media Group, 2-part series, each segment 16 to 27 min.). This two-part series presents the theories of some of the most influential thinkers in the field of child development. Examining models that focus on the mind, feelings, physical development, or social context, along with the ideas of early educational reformers, the programs emphasize the importance of drawing from several philosophies to create a complete framework for raising and educating the "whole child."

