

Test Bank for Lifespan Development 9th Boyd

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TEST BANK

CHAPTER 1: BASIC CONCEPTS AND METHODS

Multiple-Choice Questions

TB_01_01_An Introduction to Human Development

The field of _____ is the scientific study of age-related changes in behavior, thinking, emotion, and personality.

- A) neuroscience
- B) psychology
- C) human development
- D) social psychology

Answer: C

Level: Easy

Topic: An Introduction to Human Development

Skill: Understand the Concepts

LO 1.1.1: Recall the ideas about human development proposed by early philosophers and scientists

TB_01_02 Philosophical and Scientific Roots

The Christian doctrine of _____ argues that human development occurs as a result of how well or how poorly someone does at overcoming the inborn tendency to act immorally.

- A) original sin
- B) empiricism
- C) behaviorism
- D) innate goodness

Answer: A

Level: Easy

Topic: Philosophical and Scientific Roots

Skill: Understand the Concepts

LO 1.1.1: Recall the ideas about human development proposed by early philosophers and scientists

TB_01_03 Philosophical and Scientific Roots

Which thinker argued that children are born with a mind that is a blank slate?

- A) Augustine of Hippo
- B) Charles Darwin
- C) Jean-Jacques Rousseau
- D) John Locke

Answer: D

Level: Easy

Topic: Philosophical and Scientific Roots

Skill: Understand the Concepts

LO 1.1.1: Recall the ideas about human development proposed by early philosophers and scientists

TB_01_04 Philosophical and Scientific Roots

Jean-Jacques Rousseau proposed that all human beings are naturally good and seek out experiences that help them grow, a concept that came to be known as

- A) maturation.
- B) innate goodness.
- C) the blank slate.
- D) original sin.

Answer: B

Level: Easy

Topic: Philosophical and Scientific Roots

Skill: Understand the Concepts

LO 1.1.1: Recall the ideas about human development proposed by early philosophers and scientists

TB_01_05_Philosophical and Scientific Roots

Dr. Sardonicus believes that humans possess no inborn abilities and that parents can mold their children into whatever they want them to be. Which doctrine would best describe Dr. Sardonicus' views?

- A) Empiricism
- B) Innate goodness
- C) Original sin
- D) Darwinism

Answer: A

Level: Difficult

Topic: Philosophical and Scientific Roots

Skill: Apply What You Know

LO 1.1.1: Recall the ideas about human development proposed by early philosophers and scientists

TB_01_06_Philosophical and Scientific Roots

Charles Darwin and other early evolutionary thinkers compiled _____, which were detailed observations of the behaviors of an individual infant, in the hope that they might better understand the overall evolution of the human species.

- A) domains of development
- B) baby biographies
- C) Gesell scales
- D) norm-referenced tests

Answer: B

Level: Difficult

Topic: Philosophical and Scientific Roots

Skill: Understand the Concepts

LO 1.1.1: Recall the ideas about human development proposed by early philosophers and scientists

TB_01_07_Philosophical and Scientific Roots

Which assertion regarding lifespan development can be attributed to both G. Stanley Hall and Charles Darwin?

- A) Human evolution represents a unique occurrence in natural history.
- B) Biology dictates how human personality develops.
- C) Environment determines the course of healthy individual development.
- D) The milestones of childhood are similar to those in the development of the human species.

Answer: D

Level: Difficult

Topic: Philosophical and Scientific Roots

Skill: Evaluate It

LO 1.1.1: Recall the ideas about human development proposed by early philosophers and scientists

TB_01_08_Philosophical and Scientific Roots

Which term did Arnold Gesell use to describe genetically programmed sequential patterns of change, such as puberty or menopause?

- A) Maturation
- B) Growth
- C) Social clock
- D) Age norms

Answer: A

Level: Moderate

Topic: Philosophical and Scientific Roots

Skill: Understand the Concepts

LO 1.1.1: Recall the ideas about human development proposed by early philosophers and scientists

TB_01_09_The Lifespan Perspective

Which summary best describes the current perspective on human development?

- A) Human development begins at conception and continues throughout the lifespan.
- B) Human development begins at birth and becomes relatively stable by adolescence.
- C) Human development begins slowly at birth and accelerates as we age.
- D) Human development begins with the onset of puberty.

Answer: A

Level: Easy

Topic: The Lifespan Perspective

Skill: Understand the Concepts

LO 1.1.2: Describe how the lifespan perspective tries to fully explain human development

TB_01_10_The Lifespan Perspective

_____ summarizes the idea that individuals of all ages possess the capacity for positive change in response to environmental demands.

- A) Plasticity
- B) Multicontextuality
- C) Empiricism
- D) Maturation

Answer: A

Level: Difficult

Topic: The Lifespan Perspective

Skill: Analyze It

LO 1.1.2: Describe how the lifespan perspective tries to fully explain human development

TB_01_11_The Lifespan Perspective

Researchers have to explore many types of information to address their questions of interest. Which concept emphasizes this approach to studying lifespan development?

- A) The unidimensional nature of development
- B) Interdisciplinary research
- C) Extra-generational implications
- D) Rigidity

Answer: B

Level: Difficult

Topic: The Lifespan Perspective

Skill: Analyze It

LO 1.1.2: Describe how the lifespan perspective tries to fully explain human development

TB_01_12_The Domains and Periods of Development

The physical domain refers to that aspect of human development that describes

- A) changes in thinking, memory, problem solving, and other intellectual skills.
- B) changes in size, shape, and characteristics of the body.
- C) how young children exceed or lag behind their peers.
- D) the relationship of an individual person to other people.

Answer: B

Level: Easy

Topic: The Domains and Periods of Development

Skill: Understand the Concepts

LO 1.1.3: Identify the categories used by developmental scientists to organize the study of human development

TB_01_13_The Domains and Periods of Development

Which aspect of human development describes changes in thinking, memory, problem solving, and other intellectual skills?

- A) Psychological domain
- B) Physical domain
- C) Cognitive domain
- D) Social domain

Answer: C

Level: Easy

Topic: The Domains and Periods of Development

Skill: Understand the Concepts

LO 1.1.3: Identify the categories used by developmental scientists to organize the study of human development

TB_01_14_The Domains and Periods of Development

Which aspect of human development describes changes in variables that are associated with the relationship of an individual to others?

- A) Psychological domain
- B) Physical domain
- C) Cognitive domain
- D) Social domain

Answer: D

Level: Easy

Topic: The Domains and Periods of Development

Skill: Understand the Concepts

LO 1.1.3: Identify the categories used by developmental scientists to organize the study of human development

TB_01_15_The Domains and Periods of Development

Jorge, age 16, has recently gained a considerable amount of weight but has not grown any taller. Developmental psychologists would investigate whether there is a problem with Jorge in which domain of development?

- A) Physical
- B) Cultural
- C) Cognitive
- D) Social

Answer: A

Level: Moderate

Topic: The Domains and Periods of Development

Skill: Understand the Concepts

LO 1.1.3: Identify the categories used by developmental scientists to organize the study of human development

TB_01_16_The Domains and Periods of Development

Estelle, age 12, is in the 6th grade but reads at a 3rd grade level. Developmentalists would investigate whether there is a problem in which domain of Estelle's development?

- A) Physical
- B) Cultural
- C) Cognitive
- D) Social

Answer: C

Level: Easy

Topic: The Domains and Periods of Development

Skill: Understand the Concepts

LO 1.1.3: Identify the categories used by developmental scientists to organize the study of human development

TB_01_17_The Domains and Periods of Development

The three broad categories that are used to classify changes over the lifespan are called

- A) domains of development.
- B) domains of change models.
- C) evolutionary stages.
- D) psychosocial domains.

Answer: A

Level: Easy

Topic: The Domains and Periods of Development

Skill: Understand the Concepts

LO 1.1.3: Identify the categories used by developmental scientists to organize the study of human development

TB_01_18_The Domains and Periods of Development

Periods of development describe which aspect of developmental theories?

- A) Age-related changes
- B) Domain-related changes
- C) Biological changes
- D) Prenatal changes

Answer: A

Level: Moderate

Topic: The Domains and Periods of Development

Skill: Understand the Concepts

LO 1.1.3: Identify the categories used by developmental scientists to organize the study of human development

TB_01_19_The Domains and Periods of Development

Not all cultures define the boundaries of adolescence in the same way. For example, Eustace grew up in the United Kingdom, which means that Eustace could

- A) buy alcohol at any age.
- B) be unable to drive until the age of 21.
- C) join the military at the age of 16.
- D) be able to vote at age 15.

Answer: C

Level: Difficult

Topic: The Domains and Periods of Development

Skill: Apply What You Know

LO 1.1.3: Identify the categories used by developmental scientists to organize the study of human development

TB_01_20_The Domains and Periods of Development

When does the period of middle childhood occur?

- A) After a child begins walking
- B) After a child begins talking
- C) After a child enters school
- D) After a child begins puberty

Answer: C

Level: Easy

Topic: The Domains and Periods of Development

Skill: Understand the Concepts

LO 1.1.3: Identify the categories used by developmental scientists to organize the study of human development

TB_01_21_Nature Versus Nurture

Which term generally refers to environmental influences that shape behavior?

- A) Social evolution

B) Nature
C) Maturation
D) Nurture
Answer: D
Level: Moderate
Topic: Nature Versus Nurture
Skill: Understand the Concepts
LO 1.2.1: Explain the nature–nurture debate

TB_01_22_Nature Versus Nurture

Juanita’s father died when she was an infant, but her family insists that she not only looks like him, she acts like him as well. This might indicate that _____ had a large impact on Juanita’s development.

- A) nature
- B) environment
- C) nurture
- D) innate goodness

Answer: A
Level: Difficult
Topic: Nature Versus Nurture
Skill: Apply What You Know
LO 1.2.1: Explain the nature–nurture debate

TB_01_23_Nature Versus Nurture

Developmental psychologists have observed that babies seem to be born predisposed to respond to people in certain ways, such as by crying or smiling, in order to elicit attention from a caregiver. Psychologists call these inherent tendencies

- A) cultural biases.
- B) maturational patterns.
- C) nature and nurture tensions.
- D) inborn biases.

Answer: D
Level: Moderate
Topic: Nature Versus Nurture
Skill: Understand the Concepts
LO 1.2.1: Explain the nature–nurture debate

TB_01_24_Nature Versus Nurture

Which observation provides an example of an inborn bias?

- A) Some male infants show a propensity toward aggression, whereas some female infants are passive.
- B) There are more blue-eyed children in the United States than brown-eyed children.
- C) Universally, children’s speech begins with single words before proceeding to two-word sentences.
- D) Universally, children learn to walk before they learn to crawl.

Answer: C
Level: Easy
Topic: Nature Versus Nurture
Skill: Understand the Concepts
LO 1.2.1: Explain the nature–nurture debate

TB_01_25_Continuity Versus Discontinuity

Qualitative is to quantitative as

- A) production is to comprehension.
- B) specific is to individual.
- C) continuous is to discontinuous.

D) discontinuous is to continuous.

Answer: D

Level: Difficult

Topic: Continuity Versus Discontinuity

Skill: Analyze It

LO 1.2.2: Describe the continuity–discontinuity debate

TB_01_26_Continuity Versus Discontinuity

Magdalena believes her daughter is going through very distinct stages of development and is suddenly, upon turning 2 years old, able to do far more than she could at 1 year. Magdalena’s intuitions are consistent with which approach to development?

A) Nurture

B) Discontinuous change

C) Continuous change

D) Sensitive periods

Answer: B

Level: Moderate

Topic: Continuity Versus Discontinuity

Skill: Apply What You Know

LO 1.2.2: Describe the continuity–discontinuity debate

TB_01_27_Continuity Versus Discontinuity

Which terms best describes a change in amount?

A) Qualitative change

B) Quantitative change

C) Significant change

D) Metric change

Answer: B

Level: Easy

Topic: Continuity Versus Discontinuity

Skill: Understand the Concepts

LO 1.2.2: Describe the continuity–discontinuity debate

TB_01_28_Continuity Versus Discontinuity

If puberty begins for girls with the onset of menstruation, puberty could be considered a matter of

A) discontinuity.

B) continuity.

C) quantitative development.

D) ecological development.

Answer: A

Level: Difficult

Topic: Continuity Versus Discontinuity

Skill: Apply What You Know

LO 1.2.2: Describe the continuity–discontinuity debate

TB_01_29_Three Kinds of Change

Which observation is an example of a normative age-graded change?

A) You have blue eyes even though both of your parents have brown eyes.

B) You are taller now than when you were two years old.

C) You moved to the United States when you were a teenager and learned to speak English.

D) You learned to walk before you learned to crawl.

Answer: B

Level: Moderate

Topic: Three Kinds of Change
Skill: Understand the Concepts
LO 1.2.3: Differentiate among the three kinds of age-related changes

TB_01_30_Three Kinds of Change

Our sense of “the right time” to go to college, marry, have children, or retire is determined by our

- A) biological clock.
- B) intuition.
- C) social clock.
- D) cultural and cohort continuity.

Answer: C

Level: Moderate

Topic: Three Kinds of Change

Skill: Apply What You Know

LO 1.2.3: Differentiate among the three kinds of age-related changes

TB_01_31_Three Kinds of Change

Roberta married for the first time at age 39, and at age 40 she became pregnant for the first time. She is now considering starting college to become a computer systems engineer. When Roberta laughingly tells her friends, “I have never done anything when I was supposed to!” what is she referring to?

- A) Her social clock
- B) Her biological clock
- C) Her psychological clock
- D) A critical period

Answer: A

Level: Moderate

Topic: Three Kinds of Change

Skill: Apply What You Know

LO 1.2.3: Differentiate among the three kinds of age-related changes

TB_01_32_Three Kinds of Change

What is the term used for a general negative attitude about aging, typified by the belief that older persons are incompetent?

- A) Sexism
- B) Relativism
- C) Ageism
- D) Racism

Answer: C

Level: Easy

Topic: Three Kinds of Change

Skill: Understand the Concepts

LO 1.2.3: Differentiate among the three kinds of age-related changes

TB_01_33_Three Kinds of Change

Variations in life experiences that are associated with a certain historical event, such as the Israel–Palestine War of 2023, can be considered

- A) nonnormative changes.
- B) general normative changes.
- C) normative age-graded changes.
- D) normative history-graded changes.

Answer: D

Level: Moderate

Topic: Three Kinds of Change
Skill: Understand the Concepts
LO 1.2.3: Differentiate among the three kinds of age-related changes

TB_01_34_Three Kinds of Change

Which term refers to changes that result from unique, unshared events?

- A) Nonnormative change
- B) General normative change
- C) Normative age-graded change
- D) Normative history-graded change

Answer: A

Level: Easy

Topic: Three Kinds of Change

Skill: Understand the Concepts

LO 1.2.3: Differentiate among the three kinds of age-related changes

TB_01_35_Three Kinds of Change

The idea that there may be significant periods in development when an organism is especially sensitive to the presence (or absence) of some particular kind of experience is referred to as a

- A) cohort influence.
- B) critical period.
- C) collectivist cultural influence.
- D) timing influence.

Answer: B

Level: Easy

Topic: Three Kinds of Change

Skill: Understand the Concepts

LO 1.2.3: Differentiate among the three kinds of age-related changes

TB_01_36_Three Kinds of Change

Sara contracted rubella (German measles) in the 11th week of her pregnancy. Emily contracted rubella during the 30th week of her pregnancy. The difference in the way rubella would affect an unborn child at these two times (i.e., very early in prenatal development versus much later in prenatal development) is an example of _____

- A) a critical period.
- B) normative age-graded changes.
- C) individual differences.
- D) cultural specificity.

Answer: A

Level: Difficult

Topic: Three Kinds of Change

Skill: Apply What You Know

LO 1.2.3: Differentiate among the three kinds of age-related changes

TB_01_37_Three Kinds of Change

Which summary best defines a sensitive period of development?

- A) A time of psychological fragility, usually due to some type of loss such as the death of a spouse, termination of employment, or physical decline due to aging
- B) The period of time during which developmental norms for physical development are reached or achieved
- C) A specific period in development when an organism is particularly responsive to specific forms of experience or particularly influenced by their absence
- D) The time when the tension between nature and nurture is resolved during an organism's development

Answer: C

Level: Easy

Topic: Three Kinds of Change

Skill: Understand the Concepts

LO 1.2.3: Differentiate among the three kinds of age-related changes

TB_01_38_Three Kinds of Change

Which example represents an “off-time” event that could have negative effects upon an individual’s development?

A) The deaths of one’s parents when they are in their 90s

B) Being divorced at the age of 25

C) The death of one’s spouse at the age of 30

D) Experiencing a life-threatening illness at the age of 60

Answer: C

Level: Difficult

Topic: Three Kinds of Change

Skill: Apply What You Know

LO 1.2.3: Differentiate among the three kinds of age-related changes

TB_01_39_Three Kinds of Change

Adults in Iraq, who were teenagers living there during the Gulf War of 1990, report that their lives were changed by those events. This example illustrates

A) normative age-graded changes.

B) normative critical periods.

C) normative history-graded changes.

D) non-normative life events.

Answer: C

Level: Difficult

Topic: Three Kinds of Change

Skill: Apply What You Know

LO 1.2.3: Differentiate among the three kinds of age-related changes

TB_01_40_Research Report—An Example of a Cohort Effect: Children and Adolescents in the Great Depression

Which outcome was a primary finding of the large-scale study of different cohorts who grew up during the Great Depression?

A) The cohort born in 1920 suffered more than the cohort born in 1928.

B) Teenage girls were more likely than teenage boys to be forced into the workplace prematurely because of economic hardship.

C) Teenagers whose families experienced severe economic difficulty assumed adult responsibility prematurely.

D) The adolescents who were forced prematurely into the workforce were better adjusted as adults.

Answer: C

Level: Difficult

Topic: Research Report—An Example of a Cohort Effect: Children and Adolescents in the Great Depression

Skill: Evaluate It

LO 1.2.4: Explain the influence of context on human development

TB_01_41_Contexts of Development

Compared to the others, which developmental outcome would best illustrate the concept of vulnerability?

A) Very low IQ scores are more common among children who were born with a low birth weight and who are reared in highly stressed, uninvolved families.

B) Normal birth weight infants born into upper socioeconomic status families invariably have superior levels of intelligence.

C) Children born into caring, facilitative families rarely have sufficient protective factors to overcome or offset all vulnerabilities that might potentially affect their development.

D) Positive developmental outcomes are possible only for children with few vulnerabilities and many protective

factors.

Answer: A

Level: Difficult

Topic: Contexts of Development

Skill: Apply What You Know

LO 1.2.4: Explain the influence of context on human development

TB_01_42_Contexts of Development

Which concept defines a system of meanings and customs shared by an identifiable group and transmitted across generations?

A) Age strata

B) Cohort

C) Collective identity

D) Culture

Answer: D

Level: Moderate

Topic: Contexts of Development

Skill: Analyze It

LO 1.2.4: Explain the influence of context on human development

TB_01_43_The Goals of Developmental Science

Which summary describes the goals of developmental science?

A) To describe, explain, predict, and influence development

B) To understand and explain social norms

C) To study cohort effects across cultures

D) To explain, record, and produce human differences

Answer: A

Level: Easy

Topic: The Goals of Developmental Science

Skill: Understand the Concepts

LO 1.3.1: Identify the goals that researchers of human development try to achieve

TB_01_44_The Goals of Developmental Science

Sets of statements that propose general principles to explain development are known as

A) cross-sectional designs.

B) hypotheses.

C) theories.

D) constructs.

Answer: C

Level: Easy

Topic: The Goals of Developmental Science

Skill: Understand the Concepts

LO 1.3.1: Identify the goals that researchers of human development try to achieve

TB_01_45_The Goals of Developmental Science

Which type of prediction is stated in a way that permits it to be tested?

A) Theories

B) Hypotheses

C) Experiments

D) Constructs

Answer: B

Level: Easy

Topic: The Goals of Developmental Science

Skill: Understand the Concepts

LO 1.3.1: Identify the goals that researchers of human development try to achieve

TB_01_46_The Goals of Developmental Science

Compared to the others, which statement represents a hypothesis about human development?

A) Cross-cultural studies have determined that human breast milk provides the ideal nutrition for infant brain development.

B) Human breast milk contains nutrients that are essential for the formation of neurons and synapses in an infant's developing brain.

C) Because human breast milk is a superior form of nutrition for infants, all new parents should be encouraged to breastfeed their infants.

D) If breast milk is a superior supplement for infant brain development, children who were breastfed as infants should perform better on psychological tests than children who were not breastfed.

Answer: D

Level: Difficult

Topic: The Goals of Developmental Science

Skill: Evaluate It

LO 1.3.1: Identify the goals that researchers of human development try to achieve

TB_01_47_Descriptive Methods

Which is an example of naturalistic observation?

A) A school psychologist administers mathematical aptitude tests to the sophomore class of Sululagi M. Palega, Jr. High School.

B) A researcher provides high-caffeine drinks to an experimental group who are being taught a complicated game and provides caffeine-free drinks to a control group who are being taught the same game.

C) A serial killer is subjected to a battery of physical tests and intensive interviews in an effort to determine the factors that influenced his developmental pathway toward homicidal behavior.

D) Researchers interested in children's gender-related interactions videotape children while they are playing during recess and while they are engaged in cooperative learning assignments in their classrooms.

Answer: D

Level: Difficult

Topic: Descriptive Methods

Skill: Apply What You Know

LO 1.3.2: Contrast the advantages and disadvantages of each descriptive method

TB_01_48_Descriptive Methods

Corrado is part of a research group of adolescents trying to lose weight. One of his assignments is to keep a daily diary of his food intake and the times that he eats. This approach can be considered an example of _____ research.

A) an ethnographic

B) naturalistic observation

C) a correlational study

D) a case study

Answer: D

Level: Difficult

Topic: Descriptive Methods

Skill: Apply What You Know

LO 1.3.2: Contrast the advantages and disadvantages of each descriptive method

TB_01_49_Descriptive Methods

In order to learn about toy preferences, Professor Rabinowitz interviews children at a local preschool and uses their

responses to guide conclusions about children's toy preferences in general. This is an example of _____ research.

- A) experimental
- B) correlational
- C) survey
- D) ethnographic

Answer: C

Level: Moderate

Topic: Descriptive Methods

Skill: Understand the Concepts

LO 1.3.2: Contrast the advantages and disadvantages of each descriptive method

TB_01_50_Descriptive Methods

Reggie is taking part in a survey that asks about attitudes toward the physical punishment of children. Even though Reggie believes that spanking is sometimes necessary, he answers that he is opposed to any sort of physical punishment. Which term best describes why Reggie answered the way he did?

- A) Social desirability
- B) Experimenter bias
- C) Randomness
- D) Sample representation

Answer: A

Level: Moderate

Topic: Descriptive Methods

Skill: Apply What You Know

LO 1.3.2: Contrast the advantages and disadvantages of each descriptive method

TB_01_51_Descriptive Methods

Which statement about correlations is correct?

- A) A correlation of zero indicates a strong relationship between two variables.
- B) A correlation of -1.00 indicates a weak relationship between two variables.
- C) A correlation of $+1.00$ provides clear evidence that one variable has a causative effect upon the other.
- D) Correlations can range from -1.00 to $+1.00$ and describe the strength of a relationship between two variables.

Answer: D

Level: Moderate

Topic: Descriptive Methods

Skill: Analyze It

LO 1.3.2: Contrast the advantages and disadvantages of each descriptive method

TB_01_52_Descriptive Methods

You notice an association between how many tattoos a person has and how loud of a motorcycle that person rides. What can you accurately conclude about this association?

- A) Having a lot of tattoos causes a person to want to ride a loud motorcycle.
- B) Riding a loud motorcycle causes a person to want to get a lot of tattoos.
- C) Recklessness causes a person to both ride a loud motorcycle and get a lot of tattoos.
- D) There is a positive correlation between tattoo density and motorcycle loudness.

Answer: D

Level: Difficult

Topic: Descriptive Methods

Skill: Apply What You Know

LO 1.3.2: Contrast the advantages and disadvantages of each descriptive method

TB_01_53_The Experimental Method

Which key feature is found in an experiment?

- A) Controls for cohort effects
- B) Nonrandom assignment
- C) Absence of a control group
- D) An independent variable

Answer: D

Level: Moderate

Topic: The Experimental Method

Skill: Analyze It

LO 1.3.3: Explain the primary advantage of the experimental method over descriptive methods

TB_01_54_The Experimental Method

An experiment is designed to study the effects of long lectures on the sleeping behavior of college students. In such a study, the dependent variable is

- A) the sleeping behavior of college students.
- B) long lectures.
- C) the length of time a lecture runs.
- D) college students.

Answer: A

Level: Difficult

Topic: The Experimental Method

Skill: Analyze It

LO 1.3.3: Explain the primary advantage of the experimental method over descriptive methods

TB_01_55_The Experimental Method

Researchers designed an experiment to study the effects of a professor's rate of joke-telling during lectures on course enrollments. What is the independent variable in this study?

- A) The professor
- B) The professor's rate of joke-telling
- C) Students considering attending college
- D) The number of students who enroll in a given course

Answer: B

Level: Difficult

Topic: The Experimental Method

Skill: Evaluate It

LO 1.3.3: Explain the primary advantage of the experimental method over descriptive methods

TB_01_56_The Experimental Method

Rölf conducts an experiment in which group A is exposed to a particular treatment and group B is given no treatment. If group A is designated as the treatment group, then what is group B designated as?

- A) The placebo group
- B) The control group
- C) The experimental group
- D) The independent group

Answer: B

Level: Moderate

Topic: The Experimental Method

Skill: Evaluate It

LO 1.3.3: Explain the primary advantage of the experimental method over descriptive methods

TB_01_57_The Experimental Method

A researcher wants to compare developing human fetuses that have already been exposed naturally to radiation, to

fetuses that have not been exposed. Which type of research would be best suited for this?

- A) Experimentation
- B) Quasi-experimentation
- C) Survey
- D) Naturalistic observation

Answer: B

Level: Moderate

Topic: The Experimental Method

Skill: Apply What You Know

LO 1.3.3: Explain the primary advantage of the experimental method over descriptive methods

TB_01_58_Research Designs

In which research design are participants of different ages studied at the same time, and the results compared across age groups?

- A) Longitudinal
- B) Cross-sectional
- C) Sequential
- D) Cross-cultural

Answer: B

Level: Easy

Topic: Research Designs

Skill: Understand the Concepts

LO 1.4.1: Compare cross-sectional, longitudinal, and sequential designs

TB_01_59_Research Designs

Which example illustrates a cross-sectional research design?

- A) Dr. Huang assessed the eye–hand coordination of the second, fourth, and sixth graders at Ronnie Dawson Elementary School in September 2020.
- B) Dr. Sanchez assessed the eye–hand coordination of the second, fourth, and sixth graders of Ronnie Dawson Elementary School in December 2016, and the same children were tested again in 2018, 2020, and 2022.
- C) At the beginning of each school year, the five children of the McGillicuddy family visit their family doctor to have physical exams.
- D) Each year the five-year-olds of Washington, D.C., are given number and letter proficiency exams before they begin kindergarten.

Answer: A

Level: Difficult

Topic: Research Designs

Skill: Apply What You Know

LO 1.4.1: Compare cross-sectional, longitudinal, and sequential designs

TB_01_60_Research Designs

Cohort effects are a potential problem most commonly associated with which type of research design?

- A) Cross-sectional designs
- B) Longitudinal designs
- C) Sequential designs
- D) Quasi-experimental designs

Answer: A

Level: Difficult

Topic: Research Designs

Skill: Evaluate It

LO 1.4.1: Compare cross-sectional, longitudinal, and sequential designs

TB_01_61_Research Designs

Which example illustrates a longitudinal research design?

- A) Dr. Gomez simultaneously studied four groups of children aged 4, 6, 9, and 11 to determine how the presence of a pet helps children cope with their parents' divorce.
- B) To determine how alcohol affects the retention of information, researchers monitored young adults' ingestion of alcohol while they were learning to play a complicated videogame.
- C) Dr. Mijatovich initially studied a group of recently divorced 35-year-olds to evaluate their interpersonal skills, and continued to measure their relationship satisfaction for a subsequent 20 years.
- D) In October 2023, researchers surveyed shoppers at local malls to assess their attitudes about retirement and their plans for post-retirement activities.

Answer: C

Level: Moderate

Topic: Research Designs

Skill: Apply What You Know

LO 1.4.1: Compare cross-sectional, longitudinal, and sequential designs

TB_01_62_Research Designs

Which type of research study is a "compromise" design that examines a number of different age groups over several points in time?

- A) Sequential design
- B) Cross-longitudinal design
- C) Longitudinal case study
- D) Correlational study

Answer: A

Level: Difficult

Topic: Research Designs

Skill: Evaluate It

LO 1.4.1: Compare cross-sectional, longitudinal, and sequential designs

TB_01_63_Research Designs

A cohort of Baby Boomer women were compared to a cohort of Preboomer women using a sequential research design that took measurements in 1983, 1986, 1993, and 2003. What was a finding of that study?

- A) The relationship between age and reported frequency of marital conflict was the same across cohorts.
- B) The different cohorts' self-perceptions of femininity declined in parallel fashion.
- C) Because this was a sequential study, no reliable findings could be reported.
- D) The relationship between age and reported frequency of marital conflict was different in each cohort.

Answer: D

Level: Difficult

Topic: Research Designs

Skill: Analyze It

LO 1.4.1: Compare cross-sectional, longitudinal, and sequential designs

TB_01_64_Cross-Cultural Research

Koko is investigating factors related to alcohol use among college students, so she lives in a college dormitory for a month to observe students and conduct in-depth interviews with them. This is an example of which type of research?

- A) Ethnography
- B) Sociology
- C) Sociobiology
- D) Ethnopsychology

Answer: A

Level: Easy

Topic: Cross-Cultural Research

Skill: Understand the Concepts

LO 1.4.2: Explain the importance of cross-cultural research to the study of human development

TB_01_65_Cross-Cultural Research

The two primary goals of cross-cultural research are to identify universal changes that cross cultures and to

- A) demonstrate cultural diversity in the social sciences.
- B) nurture more culturally sensitive attitudes.
- C) gain information that will help improve people's lives.
- D) determine the effects that one culture has upon another.

Answer: C

Level: Easy

Topic: Cross-Cultural Research

Skill: Understand the Concepts

LO 1.4.2: Explain the importance of cross-cultural research to the study of human development

TB_01_66_Research Ethics

Which statement is true about research ethics?

- A) Research ethics apply to human research but not animal research.
- B) Research ethics apply to animal research but not human research.
- C) Research ethics apply to both human and animal research.
- D) Research ethics are the same thing as federal laws.

Answer: C

Level: Easy

Topic: Research Ethics

Skill: Understand the Concepts

LO 1.4.2: Outline the ethical standards that developmental researchers must follow

TB_01_67_Research Ethics

Researchers must report their data in such a way that no particular piece of information can be associated with any specific participant. This is a central part of which aspect of research ethics?

- A) Informed consent
- B) Protection from harm
- C) Confidentiality
- D) Deception

Answer: C

Level: Easy

Topic: Research Ethics

Skill: Understand the Concepts

LO 1.4.3: Outline the ethical standards that developmental researchers must follow

TB_01_68_Research Ethics

Which common ethical guideline is stipulated by the American Psychological Association, the Society for Research in Child Development, and other governing bodies?

- A) Participants may not withdraw after they begin a research study.
- B) Participants must be allowed to make an informed decision regarding their participation in a research study.
- C) Participants cannot be subjected to potential harm of any kind.
- D) Participants cannot be deceived about aspects of the research.

Answer: B

Level: Easy

Topic: Research Ethics

Skill: Understand the Concepts

LO 1.4.3: Outline the ethical standards that developmental researchers must follow

TB_01_69_Research Ethics

Darius participated in a study examining the effects of alcohol on long-term memory. Six months after his

participation ended, he received a newsletter telling him all about the results of the study. The researchers were following the ethical guideline that mandates

- A) knowledge of results.
- B) informed consent.
- C) full disclosure.
- D) protection against harm.

Answer: A

Level: Moderate

Topic: Research Ethics

Skill: Apply What You Know

LO 1.4.3: Outline the ethical standards that developmental researchers must follow

TB_01_70_Research Ethics

Which summary best explains the protection from harm aspect of research ethics?

- A) Absolutely no harm, neither permanent nor temporary, can come to the participants during the research.
- B) As long as the harm is temporary and only lasts for the duration of the research, it is acceptable.
- C) If temporary harm may be caused by the research, the researchers must provide a way to relieve that harm.
- D) As long as the participants are informed of the possibility of harm before the research begins, no ethical violations can occur.

Answer: C

Level: Moderate

Topic: Research Ethics

Skill: Analyze It

LO 1.4.3: Outline the ethical standards that developmental researchers must follow

Fill-in-the-Blank Questions

TB_01_71_Philosophical and Scientific Roots

_____ published the first scientific study of children and introduced the concept of norms.

Answer: G. Stanley Hall

Level: Moderate

Topic: Philosophical and Scientific Roots

Skill: Understand the Concepts

LO 1.1.1: Recall the ideas about human development proposed by early philosophers and scientists

TB_01_72_Philosophical and Scientific Roots

The English philosopher John Locke proposed that at birth human beings are _____ waiting to receive information.

Answer: blank slates

Level: Easy

Topic: Philosophical and Scientific Roots

Skill: Understand the Concepts

LO 1.1.1: Recall the ideas about human development proposed by early philosophers and scientists

TB_01_73_The Domains and Periods of Development

LaRhonda has an outgoing, friendly personality, whereas her best friend Annabella is shy and reserved. LaRhonda and Annabella are being described using the _____ domain of development.

Answer: social

Level: Moderate

Topic: The Domains and Periods of Development

Skill: Apply What You Know

LO 1.1.3: Identify the categories used by developmental scientists to organize the study of human development

TB_01_74_Nature Versus Nurture

The internal model of experience assumes that events themselves are not as important in influencing development as are the individual's _____ of those events.

Answer: perception or interpretation

Level: Moderate

Topic: Nature Versus Nurture

Skill: Analyze It

LO 1.2.1: Explain the nature–nurture debate

TB_01_75_Three Kinds of Change

Normative _____ changes are universal, in that they apply to everyone at the same period of maturation.

Answer: age-graded

Level: Moderate

Topic: Three Kinds of Change

Skill: Analyze It

LO 1.2.3: Differentiate among the three kinds of age-related changes

TB_01_76_Contexts of Development

Both of Montserrat's parents, and all four of her grandparents, have high blood pressure. We might assume that Montserrat will be more _____ to blood pressure problems compared to her cohorts.

Answer: vulnerable

Level: Difficult

Topic: Contexts of Development

Skill: Apply What You Know

LO 1.2.4: Explain the influence of context on human development

TB_01_77_The Goals of Developmental Science

A major difference between a theory and a hypothesis is that hypotheses are _____ predictions about future events.

Answer: testable

Level: Difficult

Topic: The Goals of Developmental Science

Skill: Apply What You Know

LO 1.3.1: Identify the goals that researchers of human development try to achieve

TB_01_78_The Goals of Developmental Science

The four goals of applying the scientific method to developmental psychology are to _____, _____, _____, and _____ human behavior.

Answer: describe; explain; predict; influence

Level: Easy

Topic: The Goals of Developmental Science

Skill: Understand the Concepts

LO 1.3.1: Identify the goals that researchers of human development try to achieve

TB_01_79_Descriptive Methods

One major weakness of naturalistic observation is _____, which occurs when the person collecting data influences what's being collected.

Answer: observer bias

Level: Easy

Topic: Descriptive Methods

Skill: Understand the Concepts

LO 1.3.2: Contrast the advantages and disadvantages of each descriptive method

TB_01_80_Descriptive Methods

Correlational research does not allow an investigator to reach _____ conclusions.

Answer: causal

Level: Easy

Topic: Descriptive Methods

Skill: Understand the Concepts

LO 1.3.2: Contrast the advantages and disadvantages of each descriptive method

TB_01_81_The Experimental Method

To test causal hypotheses, it is necessary to use experimental designs in which participants are assigned _____ to experimental or control groups, meaning that participants have equal chances of being assigned to the different groups.

Answer: randomly

Level: Easy

Topic: The Experimental Method

Skill: Understand the Concepts

LO 1.3.3: Explain the primary advantage of the experimental method over descriptive methods

TB_01_82_The Experimental Method

A(n) _____ is a study that tests a causal hypothesis.

Answer: experiment

Level: Easy

Topic: The Experimental Method

Skill: Understand the Concepts

LO 1.3.3: Explain the primary advantage of the experimental method over descriptive methods

Short Answer Questions

TB_01_83_Philosophical and Scientific Roots

What contributions did Arnold Gesell make to the study of human development?

Answer: maturation; genetically programmed patterns of change; developed norms for children's development; observational techniques

Level: Moderate

Topic: Philosophical and Scientific Roots

Skill: Evaluate It

LO 1.1.1: Recall the ideas about human development proposed by early philosophers and scientists

TB_01_84_The Domains and Periods of Development

List the three domains of development and give an example of each.

Answer: cognitive; social; physical

Level: Easy

Topic: The Domains and Periods of Development

Skill: Understand the Concepts

LO 1.1.3: Identify the categories used by developmental scientists to organize the study of human development

TB_01_85_The Domains and Periods of Development

Which of these periods of development—prenatal, adolescence, late adulthood—show the greatest amount of developmental growth in your opinion, and why?

Answer: Responses will vary, but should include some description of the hallmarks of each stage. For example, there is relatively little physical development in late adulthood compared to the prenatal stage; adolescence seems like a more dynamic period than late adulthood in some ways, but less so in others; prenatal development is rapid within a short period of time, and so on.

Level: Difficult

Topic: The Domains and Periods of Development

Skill: Analyze It

LO 1.1.3: Identify the categories used by developmental scientists to organize the study of human development

TB_01_86_Nature Versus Nurture

All children begin to smile and coo at approximately the same age. Identify at least two key concepts that might explain these behaviors.

Answer: nature–nurture; inborn biases; predispositions; domains; periods of development

Level: Difficult

Topic: Nature Versus Nurture

Skill: Evaluate It

LO 1.2.1: Explain the nature–nurture debate

TB_01_87_Continuity Versus Discontinuity

Briefly explain how quantitative change and qualitative change relate to continuity and discontinuity in development.

Answer: The concept of continuity is related to quantitative change, whereas the concept of discontinuity is related to qualitative change.

Level: Moderate

Topic: Continuity Versus Discontinuity

Skill: Analyze It

LO 1.2.2: Describe the continuity–discontinuity debate

TB_01_88_Three Kinds of Change

Give three examples of normative history-graded influences.

Answer: anything that applies to historical events common to cohorts; for example, changes that resulted from experiencing the attacks of 9/11/2001; people who lived during the Vietnam War; survivors of Hurricane Katrina, people living in Ukraine in 2022, etc.

Level: Difficult

Topic: Three Kinds of Change

Skill: Apply What You Know

LO 1.2.3: Differentiate among the three kinds of age-related changes

TB_01_89_Contexts of Development

Briefly define the terms *vulnerability* and *resilience*.

Answer: Vulnerability refers to inborn characteristics which predispose a person to abnormal events or processes; resilience refers to inborn characteristics which predispose a person to overcome abnormal or adverse events.

Level: Moderate

Topic: Contexts of Development

Skill: Apply What You Know

LO 1.2.4: Explain the influence of context on human development

TB_01_90_Contexts of Development

Briefly define the term *culture*.

Answer: no commonly agreed-on definition; typically includes common meanings, customs, values, attitudes, goals.

Level: Easy

Topic: Contexts of Development

Skill: Understand the Concepts

LO 1.2.4: Explain the influence of context on human development

TB_01_91_The Goals of Developmental Science

What are the goals of applying the scientific method to developmental science?

Answer: describe; explain, predict; influence; also the terms *theories* and *hypotheses* may be used here

Level: Easy

Topic: The Goals of Developmental Science

Skill: Understand the Concepts

LO 1.3.1: Identify the goals that researchers of human development try to achieve

TB_01_92_Descriptive Methods

When conducting research, what is the difference between a population and a sample?

Answer: A population is the entire group of interest; a sample is a representative subset of the entire group.

Level: Moderate

Topic: Descriptive Methods

Skill: Understand the Concepts

LO 1.3.2: Contrast the advantages and disadvantages of each descriptive method

TB_01_93_The Experimental Method

An experimenter is investigating the effectiveness of cognitive therapy in treating anxiety. There are two groups: one group receives cognitive therapy; the other group meets weekly with a therapist who does not use cognitive therapy, but merely chats during the session. Using the terminology of research, identify each of these two groups.

Answer: experimental group; control group

Level: Easy

Topic: The Experimental Method

Skill: Understand the Concepts

LO 1.3.3: Explain the primary advantage of the experimental method over descriptive methods

TB_01_94_Research Ethics

Describe a situation in which confidentiality is ***not*** maintained during the research process, and outline what could be done to correct that.

Answer: Responses will vary, but could include oversights such as leaving a respondent's data lying in plain view for anyone to see (the correction is to keep data secured); asking for a participant's name or other identifying information on a survey (don't do that!); when working with children, *not* reporting when a child has revealed that they have been abused would be an error related to confidentiality, but in a different sense.

Level: Moderate

Topic: Research Ethics

Skill: Understand the Concepts

LO 1.4.3: Outline the ethical standards that developmental researchers must follow

Essay Questions

TB_01_95_Philosophical and Scientific Roots

Compare and contrast the philosophies of John Locke and Charles Darwin as they apply to developmental theory.

Answer: Locke endorsed the concepts of a “blank slate” and empiricism, leading to the implication that children can be molded through their experiences. Darwin initiated the scientific study of childhood, and argued that the development of children mirrored the development of the human species. The answer should include some expansion on these concepts.

Level: Difficult

Topic: Philosophical and Scientific Roots

Skill: Evaluate It

LO 1.1.1: Recall the ideas about human development proposed by early philosophers and scientists

TB_01_96_An Introduction to Human Development

Compare and contrast the views of three early thinkers in developmental psychology. Explain how you would reconcile their differing and sometimes conflicting views.

Answer: The answer will vary depending on which researchers and philosophers the respondent chooses. The response should demonstrate some understanding of taking an eclectic approach to explaining development and recognize that differing opinions are not always mutually exclusive of each other.

Level: Difficult

Topic: An Introduction to Human Development

Skill: Evaluate It

LO 1.1.1: Recall the ideas about human development proposed by early philosophers and scientists

TB_01_97_Three Kinds of Change

What is a critical period? What is a sensitive period? Give examples to illustrate your answers.

Answer: A *critical period* is a time during development when an organism is particularly susceptible to influences on specific developmental processes. A *sensitive period* is a span of months or years during which a child may be particularly responsive to specific forms of experience or particularly influenced by their absence.

Level: Difficult

Topic: Three Kinds of Change

Skill: Evaluate It

LO 1.2.3: Differentiate among the three kinds of age-related changes

TB_01_98_Contexts of Development

Give an example of how context, vulnerability, and resilience may influence development.

Answer: The answer needs to demonstrate that vulnerability and resilience are generally inborn factors that may modify context effects and vice-versa.

Level: Moderate

Topic: Contexts of Development

Skill: Apply What You Know

LO 1.2.4: Explain the influence of context on human development

TB_01_99_The Goals of Developmental Science

Explain the difference between a theory and a hypothesis. Give an example of each concept relevant to a question in lifespan development.

Answer: Theories are statements that propose general principles for understanding an area of interest. Hypotheses are testable statements. The example needs to reflect an understanding of the differences between these concepts, and also be applicable to a developmental topic.

Level: Easy

Topic: The Goals of Developmental Science

Skill: Understand the Concepts

LO 1.3.1: Identify the goals that researchers of human development try to achieve

TB_01_100_Descriptive Methods

You are reading a magazine article summarizing research investigating the intake of prenatal vitamin supplements and subsequent birth weight of an infant. The author reports a correlation coefficient of $+1.67$ between vitamins consumed and infant weight. What do you immediately know is true regarding this report?

Answer: It's immediately clear that either the magazine author didn't know what they were talking about, the research team didn't know what it was talking about, or neither set of reporters knew what they were talking about! Correlation coefficients cannot be greater than ± 1.00 , representing a perfect correlation between two variables. There might be *some* association between vitamin intake and subsequent weight, but it would not be represented by that reported statistic.

Level: Easy

Topic: Descriptive Methods

Skill: Understand the Concepts

LO 1.3.2: Contrast the advantages and disadvantages of each descriptive method

TB_01_101_Descriptive Methods

Explain the benefits and limitations of the case study method.

Answer: Case studies can be useful for generating detailed information about a single individual, and may be especially useful when studying rare people (e.g., someone with an unusual developmental disorder; a child raised in social isolation). A case study might also provide the basis for generating hypotheses for later study. However, the information gained from a case study may have little to no generalizability to the behavior of people in general.

Level: Moderate

Topic: Descriptive Methods

Skill: Understand the Concepts

LO 1.3.2: Contrast the advantages and disadvantages of each descriptive method

TB_01_102_The Experimental Method

Construct a hypothesis that will allow you to experimentally investigate whether early childhood attendance in a preschool program affects later verbal skills. Identify the independent and dependent variables, and outline the design of the experiment.

Answer: Young children should be randomly assigned to various preschool programs (i.e., Montessori, homeschooling, public school) or a control group that receives no special academic instruction. This is the independent variable: type of preschool. "Verbal skills" needs to be operationally defined as a dependent variable. It might be performance on a spelling test in first grade, standardized test scores in third grade, ability to carry on a conversation with the preschool teacher at the end of the term, majoring in communications when in college, and so on. In any event, the hypothesis that "Attendance in a preschool program leads to greater verbal fluency later in life" can be investigated.

Level: Difficult

Topic: The Experimental Method

Skill: Apply What You Know

LO 1.3.3: Explain the primary advantage of the experimental method over descriptive methods

CHAPTER 1

BASIC CONCEPTS AND METHODS

CHAPTER OVERVIEW

The last time you saw a relative or friend whom you hadn't seen for a while, perhaps you remarked on how much or how little the person had changed. About a child, you may have said: "Sally's grown so much since the last time I saw her." About an older person: "Uncle Julio looks much more frail than he did at Grandpa's birthday party." Such comments suggest that we humans are natural observers of the ways in which we change with age. But we also notice characteristics that seem to stay the same over time. We might say, "Sally's always been such a sweet child," or "Uncle Julio's mind is as sharp as ever." And our powers of observation don't stop with simple descriptions. We also come up with theories to explain our observations. Perhaps you've said something like, "Sally's parents are great role models. That's probably why she's so well behaved," or "Grandpa and Uncle Julio are both pretty sharp for their age. I guess they have good genes." As these observations suggest, human development is a complex phenomenon. To understand it, we developmentalists must examine many variables and the relations among them.

In this introductory chapter, you will learn how the science of human development came into being. You will also learn about the key issues in the scientific study of development. When you finish reading the chapter, you will be acquainted with the research designs and methods that developmentalists use.

1.1: An Introduction to Human Development

The philosophical concepts of original sin, innate goodness, and the blank slate have influenced Western ideas about development. The concept of developmental stages comes, in part, from Darwin's evolutionary theory. G. Stanley Hall identified norms at which developmental milestones happen. Gesell focused on genetically programmed sequential patterns of change. Important changes occur during every period of development across the lifespan, and these changes must be understood in the cultures and contexts in which they occur. There are three broad categories, called *domains of development*, to classify the changes—physical, cognitive, and social. In addition to domains, developmentalists use a system of age-related categories known as periods of development.

1.2: Key Issues in the Study of Human Development

Historically, developmentalists have looked at nature and nurture as an either-or debate. Modern developmentalists understand that developmental change is a product of both genetics and the environment. A key issue in the study of human development is the continuity–discontinuity issue. The question is whether age-related change is primarily a matter of amount or degree (continuity), or it involves changes in type or kind (discontinuity). Normative age-graded changes are universal; normative history-graded changes affect each generation differently; and nonnormative changes result from unique, unshared events. The context in which the child is growing is impacted by the factors such as the family, the neighborhood, and the larger society.

1.3: Research Methods

The goal of scientists who study human development is to produce observations and explanations that can be applied to as wide an age range of human beings and contexts as possible. To accomplish this goal, they study both change and stability. Additionally, they study cultural expectations; make predictions about development and use scientific methods to test them; and hope their findings can be used to

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positively influence development in individuals.

1.4: Research Designs

Developmental psychology uses the scientific method to achieve its goals: to describe, explain, predict, and influence human development from conception to death. Descriptive research methods are used to study the relationship between variables. Case studies are in-depth examinations of single individuals. The laboratory observation method attempts to exert some degree of control over the environment. Surveys collect data about attitudes, interests, values, and various kinds of behavior. Correlational studies measure the relationship between variables. To test causal hypotheses, experimental designs in which subjects are assigned randomly to experimental or control groups are necessary. There are three choices for studying age-related change: a cross-sectional design to study different groups of people of different ages; a longitudinal design to study the same people over a period of time; and a sequential design to combine cross-sectional and longitudinal designs in some fashion. Cross-cultural research helps developmentalists identify specific variables that explain cultural differences. Ethical principles in human developmental research include the following: protection from harm, informed consent, confidentiality, knowledge of results, and protection from deception.

LEARNING OBJECTIVES

By the end of Chapter 1, you will be able to do the following:

1.1: An Introduction to Human Development

- 1.1.1 Recall the ideas about human development proposed by early philosophers and scientists
- 1.1.2 Describe how the lifespan perspective tries to fully explain human development
- 1.1.3 Identify the categories used by developmental scientists to organize the study of human development

1.2: Key Issues in the Study of Human Development

- 1.2.1 Explain the nature–nurture debate
- 1.2.2 Describe the continuity–discontinuity debate
- 1.2.3 Differentiate between the three kinds of age-related changes
- 1.2.4 Explain the influence of context on human development

1.3: Research Methods

- 1.3.1 Identify the goals that researchers of human development try to achieve
- 1.3.2 Contrast the advantages and disadvantages of each descriptive method
- 1.3.3 Explain the primary advantage of the experimental method over descriptive methods

1.4: Research Designs

- 1.4.1 Compare cross-sectional, longitudinal, and sequential designs
- 1.4.2 Explain the importance of cross-cultural research to the study of human development
- 1.4.3 Outline the ethical standards that developmental researchers must follow

INTEGRATED CHAPTER TEACHING NOTES

1.1: AN INTRODUCTION TO HUMAN DEVELOPMENT

The field of human development is the scientific study of age-related changes in behavior, thinking, emotion, and personality. Long before the scientific method was used to study development, though, philosophers offered explanations for differences they observed in individuals of different ages. In the 19th century, the scientific methods used by early pioneers in the study of human behavior were applied to questions about age-related change. Nevertheless, the term *development* was largely confined to childhood during the early years. However, in the second half of the 20th century, behavioral scientists

began to acknowledge that important age-related changes occur across the entire human lifespan. Their efforts led to useful ways of categorizing important issues in the study of development and revealed a wealth of data suggesting that human development is a highly complex process.

By the end of this module, you will be able to:

- 1.1.1 Recall the ideas about human development proposed by early philosophers and scientists
- 1.1.2 Describe how the lifespan perspective tries to fully explain human development
- 1.1.3 Identify the categories used by developmental scientists to organize the study of human development

KEY TERMS 1.1

human development	norm-referenced tests	infancy
original sin	lifespan perspective	early childhood
blank slate	physical domain	middle childhood
innate goodness	cognitive domain	adolescence
baby biographies	social domain	early adulthood
norms	domains of development	middle adulthood
maturation	prenatal period	late adulthood

1.1.1: PHILOSOPHICAL AND SCIENTIFIC ROOTS

Objective: Recall the ideas about human development proposed by early philosophers and scientists.

Early philosophers based their ideas about development on spiritual authorities, general philosophical orientations, and deductive logic. In the 19th century, though, people who wanted to better understand human development turned to science.

Early Philosophers' Views of Development

Philosophers' inquiries into the nature of development focused on why babies, who appear to be quite similar, grow up to vary widely. They were particularly concerned with the moral dimensions of development. Three approaches to human development influenced philosophers' debates about developmental outcomes: original sin, a blank slate, and innate goodness.

The Christian doctrine of original sin, often attributed to 4th-century philosopher St. Augustine, taught that all humans are born with a selfish nature. To reduce the influence of this inborn tendency toward selfishness, Augustine taught that humans must seek spiritual rebirth and sublime themselves to religious training. Developmental outcomes, both good and bad, are the result of each individual's struggle to overcome an inborn tendency to act immorally when doing so somehow benefits the self.

In the 17th century, English philosopher John Locke drew upon a broad philosophical approach known as empiricism when he claimed that the mind of a child is a blank slate. Empiricism is the view that humans possess no innate tendencies and that all differences among humans are attributable to experience. The blank slate view proposes that adults can mold children into whatever they want them to be. "Good" and "bad" differences among adults can be explained in terms of differences in their childhood environments.

Swiss philosopher Jean-Jacques Rousseau claimed that all humans have innate goodness, and all humans are naturally good and seek out experiences that help them grow. The goal of human development is to achieve one's inborn potential. Good outcomes result from growing up in an environment that doesn't interfere with the individual's attempts to do so. Poor outcomes are learned from others or happen when a

person experiences frustration in his efforts to follow the dictates of the innate goodness with which he was born. Thus, the innate goodness and original sin approaches share the view that development involves a struggle between internal and external forces. In contrast to both, the blank slate sees the child as a passive recipient of environmental influences.

Discussion Launcher (Learning Objective 1.1.1)

How might a parent who believes in the original sin view respond to and interact with a child differently than one who agrees with Rousseau about innate goodness? How might the approaches of each of these parents differ from a parent who believes in Locke's blank slate idea?

Discussion Launcher (Learning Objective 1.1.1)

Cultures and religions have different ways of viewing the process of development. How do the original sin, innate goodness, and blank slate views compare to your own beliefs? How do you think your own culture and religion have contributed to these beliefs?

Early Scientific Studies and Theories of Development

In the 19th century, people turned to science for explanations about human development.

Charles Darwin and other evolutionists believed that they could understand the development of the human species by studying child development. They kept detailed records of their own children's early development called *baby biographies*, in hopes of finding evidence to support evolution. These were the first organized studies of human development. Darwin's studies were the source of many important ideas in modern developmental psychology, such as the concept of developmental stages.

G. Stanley Hall wanted to find more objective ways to study development. He used questionnaires and interviews to study large numbers of children. Hall thought that developmentalists should identify norms, average ages at which milestones happen, and that norms could be used to learn about the evolution of individual children.

Arnold Gesell suggested the existence of genetically programmed sequential patterns of change, called *maturation*. He thought that maturation occurred regardless of practice, training, or effort. His findings became the basis for many norm-referenced tests that are used today to determine whether individual children are developing normally.

Discussion Launcher (Learning Objective 1.1.1)

How might norm-referenced tests help educators find ways to assist children whose development lags behind that of others their age? How might it help these children develop their potential for learning important skills, such as reading, before they reach school age?

1.1.2: THE LIFESPAN PERSPECTIVE

Objective: Describe how the lifespan perspective tries to fully explain human development.

Until quite recently, psychologists thought of adulthood as a long period of stability followed by a short span of unstable years immediately preceding death. Views have changed for the following reasons:

- It has become more common for adults to go through major life changes, like divorce and career shifts, resulting in stage models of development that include adult phases.

- Significant increases in life expectancy have occurred in the industrialized world, resulting in an increase in older adults that have influenced many disciplines, including developmental psychology. At the beginning of the 20th century, Americans' life expectancy at birth was only 49 years. By the century's end, the expected lifespan of someone born in the United States was about 76 years. As a result, older adults now constitute a larger proportion of the U.S. population than ever before. Adults over the age of 100 are one of the most rapidly growing age groups in the industrialized world.

The changes listed above have led to the adoption of a lifespan perspective. It maintains that important changes occur during every period of development and that these changes must be understood in the cultures and contexts in which they occur.

Discussion Launcher (Learning Objective 1.1.2)

Why might it be important to consider cultures and contexts of a lifespan perspective?

Understanding change in adulthood has become just as important as understanding change in childhood, and input from many disciplines is necessary to fully explain human development. This new perspective emphasizes several key elements. See Table 1.1.

Table 1.1 Key Elements of the Lifespan Perspective

Element	Description
Plasticity	Individuals of all ages possess the capacity for positive change in response to environmental demands.
Interdisciplinary research	Research from different kinds of disciplinary perspectives is needed to fully understand lifespan development.
multicontextual nature of development	Individual development occurs within several interrelated contexts (e.g., family, neighborhood, culture).

Paul Baltes was a leader in the development of a comprehensive theory of lifespan development. One of his most important contributions is his emphasis on the positive aspects of advanced age. He pointed out that, as human beings age, they adopt strategies that help them maximize gains and compensate for losses.

Discussion Launcher (Learning Objective 1.1.2)

List some examples of ways that aging humans adopt strategies to assist them in maximizing gains and compensating for losses.

1.1.3: THE DOMAINS AND PERIODS OF DEVELOPMENT

Objective: Identify the categories used by developmental scientists to organize the study of human lifespan?

Scientists who study age-related changes across the lifespan often use three broad categories, called *domains of development*. Each of the domains of development includes a cluster of variables. Each cluster is defined by characteristics that distinguish it from the others. Using domain classifications helps to organize discussions of human development, but it is important to remember that the three domains do not function independently of one another.

Table 1.2 Domains of Development

Domain	Description	Examples
Physical domain	Changes in the size, shape, and characteristics of the body	Motor milestones Puberty Aging
Cognitive domain	Changes in thinking, memory, problem-solving, and other intellectual skills.	Information processing Language Intelligence
Social domain	Changes in variables associated with the relationship of an individual to others	Attachment Friendship Romantic love

Discussion Launcher (Learning Objective 1.1.3)

Give examples of how the three domains interact in development.

Categorizing Age-Related Changes

In addition to organizing developmental changes into domains of development, theorists and researchers also organize age-related changes into periods of development that encompass the lifespan. Milestones—which may be physical, cognitive, or social in nature—mark the beginning and end of each period. The milestones that determine the beginning and end of each period of development are biological, while others are social. Biological milestones are shared by all humans. By contrast, social milestones vary from one culture to another.

Table 1.3 Periods of Development

Period	Description
Prenatal	The prenatal period is the only one that has clearly defined biological boundaries at its beginning and end in that it begins at conception and ends at birth.
Infancy	Infancy begins at birth and ends when a child begins to use language to communicate, usually the first 2 years after birth.
Early Childhood	The use of language marks the beginning of early childhood, and entrance into the level of formal education that includes reading instruction is its end, typically, ages 2 and 6 years.
Middle Childhood	A social event—school enrollment and initiation of reading instruction—marks the transition from early to middle childhood. Thus, middle childhood typically ranges from age 6 to age 12.
Adolescence	Developmentalists usually think of adolescence as beginning at puberty and ending at age 18.
Early Adulthood	The beginning of early adulthood is marked by the attainment of physical maturity and the social norms of each culture. In general, developmentalists classify individuals between the ages of 18 and 40 as early adults.
Middle Adulthood	The transition from early to middle adulthood is generally thought to begin around age 40 and end at around age 60.
Late Adulthood	Late adulthood, though customarily described as beginning at age 60, is not marked by any biological or social events that clearly distinguish a middle-aged adult from an older adult. Late adulthood ends at death.

Discussion Launcher (Learning Objective 1.1.3)

Ask the class to give examples of variations in periods of development.

The Purpose of Dividing the Lifespan Into Age Periods

Although some periods of development begin and end with physical milestones that are shared by all humans in all cultures, the lines between one age period and the next are much less clear when we consider social milestones. These variations highlight the social and psychological, rather than biological, nature of transitions from one period to another. Despite the difficulties involved in defining the various periods, the periods can still serve as a useful system for organizing the study of development.

Table 1.4 Review of Periods of Development

Period	Beginning Milestone	Ending Milestone
Prenatal	Conception	Birth
Infancy	Birth	Language
Early Childhood	Language	School entrance
Middle Childhood	School entrance	Puberty
Adolescence	Puberty	Attainment of culturally defined adulthood
Early Adulthood	Attainment of culturally defined adulthood	Attainment of culturally defined mid-life, typically age 40
Middle Adulthood	Attainment of culturally defined mid-life, typically age 40	Attainment of culturally defined late adulthood, typically age 60
Late Adulthood	Attainment of culturally defined late adulthood, typically age 60	Death

Writing Prompt (Learning Objectives 1.1.1–1.1.3)

Consider This—Implications of Original Sin, the Blank Slate, and Innate Goodness

What are the implications of each philosophical school of thought discussed in this module for each of the periods of development? Give two examples of how each philosophy applies to individuals in each period.

1.2: KEY ISSUES IN THE STUDY OF HUMAN DEVELOPMENT

There are several key issues that cut across all of the domains and period of development, such as the relative contributions to development of biological and environmental factors and the presence or absence of stages. Additionally, researchers debate whether or not a specific change is common to all humans, or if the change in question occurs under some conditions, but not others. The debate includes the degree to which the setting in which development occurs contribute to developmental outcomes.

By the end of this module, you will be able to:

- 1.2.1 Explain the nature–nurture debate
- 1.2.2 Describe the continuity–discontinuity debate
- 1.2.3 Differentiate between the three kinds of age-related changes
- 1.2.4 Explain the influence of context on human development

KEY TERMS 1.2

nature–nurture debate	qualitative change	critical period
inborn biases	stages	sensitive period
continuity	normative age-graded changes	cohort
discontinuity	social clock	nonnormative change
continuity–discontinuity debate	ageism	atypical development
quantitative change	normative history-graded changes	

1.2.1: NATURE VERSUS NURTURE

Objective: Explain the nature–nurture debate.

Some early developmentalists thought of change in terms of the nature–nurture debate, the debate about the relative contributions of biological processes and experiential factors to development. Psychologists have moved away from either/or approaches implied by the term *nature–nurture debate* and toward more subtle ways of looking at both types of influences because there is evidence that both biological and experiential forces, as well as interactions between the two, shape development.

The Nature Side

The concept of inborn biases is based on the notion that children are born with tendencies to respond in certain ways. Some inborn biases are shared by virtually all children; others may vary from one individual to another. Whether these inborn patterns are coded in the genes in some fashion, are created by variations in the prenatal environment, or through some combination of the two, the basic point is that the baby is not a blank slate at birth. Babies seem to start life prepared to seek out and react to particular kinds of experiences.

The Nurture Side

Thinking on the nurture side of the issue is also more complex than in the past. For example, modern developmentalists have accepted the concept of internal models of experience. The key element of this concept is the idea that the effect of an experience depends not on its objective properties but rather on the individual's interpretation—the meaning that the individual attaches to that experience.

Discussion Launcher (Learning Objective 1.2.1)

Ask the class to give examples of the nature side and the nurture side of the nature–nurture debate.

1.2.2: CONTINUITY VERSUS DISCONTINUITY

Objective: Describe the continuity–discontinuity debate.

Another key issue in the study of human development is the continuity–discontinuity debate, differing views about the degree to which change is primarily a matter of amount or degree (continuity) versus a matter of changes in type or kind (discontinuity).

Another way of approaching the continuity-discontinuity question is to think of it in terms of changes in quantity or degree versus changes that alter the nature of an individual in some important way. A quantitative change is a change in amount. For example, children get taller as they get older. Their heights

increase, but the variable of height itself never changes. In other words, height changes continuously; it has continuity from one age to the next.

A qualitative change, on the other hand, is a change in characteristic, kind, or type. For example, puberty is a qualitative change. Prior to puberty, humans are incapable of reproduction. After puberty, they can reproduce. Therefore, postpubescent humans possess a characteristic that prepubescent humans do not: the capacity to reproduce. In other words, postpubescent and prepubescent humans are qualitatively different, and changes in the capacity to reproduce are discontinuous in nature. Later in life, another qualitative change in reproductive capacity occurs when women go through menopause and lose the capacity for reproduction.

If development consists only of additions (continuous quantitative changes), then the concept of stages—qualitatively distinct periods of development—is not needed to explain it. If, however, involves reorganization or the emergence of wholly new strategies, qualities, or skills (discontinuous, qualitative change), then the concept of stages is useful. An important difference among theories of development is whether they assume that development occurs in stages or is primarily continuous in nature.

Discussion Launcher (Learning Objective 1.2.2)

Ask the class to give more examples of quantitative and qualitative changes in development.

1.2.3: THREE KINDS OF CHANGE

Objective: Differentiate between the three kinds of age-related changes.

Developmentalists distinguish between changes that are typical for all humans and those that are relevant in some cultures but not in others. Changes that are due to individual differences among humans represent another type of change.

Age-Graded Changes

Normative age-graded changes are universal. Universal changes are common to every individual in a species and are linked to specific ages. Some universal changes happen because we are all biological organisms involved in a natural, genetically programmed maturing process. Some changes are universal, however, because of shared experiences. In each culture, the social clock, or a set of age norms, defines a sequence of normal life experiences. Age norms can lead to ageism. Ageism is analogous to sexism or racism and can lead to prejudicial behavior directed toward older adults.

Discussion Launcher (Learning Objective 1.2.3)

Ask the class to give examples of the social clock and of ageism.

Normative history-graded changes affect each generation somewhat differently. The term *cohort* describes groups of individuals born within some fairly narrow band of years who share the same historical experiences at the same times in their lives.

Discussion Launcher (Learning Objective 1.2.3)

Ask the class to give examples of normative history-graded changes that they experienced.

Individual Differences

Discussion Launcher (Learning Objective 1.2.3)

Ask the class to list examples of events that could shape a cohort.

Nonnormative changes result from unique, unshared events.

- One clearly nonshared event is conception; the combination of genes each individual receives at conception is unique.
- Characteristics influenced by both heredity and environment, such traits as intelligence and personality, constitute another class of individual differences.
- Another type of individual difference involves the time of a developmental event. In theories of child development, the concept is that of a critical period. The idea is that there may be specific periods in development when an organism is especially sensitive to the presence (or absence) of some particular kind of experience. Most knowledge about critical periods comes from animal research. For baby ducks, for instance, the first 15 hours or so after hatching is a critical period for the development of a following response.
- The broader concept of a sensitive period is more common in the study of human development. A sensitive period is a span of months or years during which a child may be particularly influenced by their absence.
- In studies of adults, the central timing concept has been the contrast between on-time and off-time events. The idea is that the experiences occurring at the expected times for an individual's culture or cohort will pose fewer difficulties for her than will off-time experiences.
- Atypical development is another kind of individual change. Synonyms for atypical development include abnormal behavior, psychopathology, and maladaptive development. All of these refer to deviation from a typical, or "normal," developmental pathway in a direction that is harmful to an individual.

Discussion Launcher (Learning Objective 1.2.3)

Give examples of events that would be influenced by being on-time or off-time (atypical development).

Writing Prompt (Learning Objective 1.2.3)

Consider This—Cohort Effects and Memories of 9/11

Individuals who were born in 1985 were in high school when the terrorist attacks of September 11, 2001, occurred. Those who were born a decade later, in 1995, were in the early elementary grades. Individuals in both cohorts probably remember the events, but because they experienced them during the different periods of development, the two groups might have been affected differently. What kinds of differences do you think might be found in these two cohorts' long-term reactions to the events of September 11, 2001?

Feature Box Activity (Learning Objective 1.2.3)

Research Report—An Example of a Cohort Effect: Children and Adolescents in the Great Depression

Speculate as to some of the possible causes of the different cohort effects in the two groups.

1.2.4: CONTEXTS OF DEVELOPMENT

Objective: Explain the influence of context on human development.

To fully understand human development, we must understand the context in which it occurs. For instance, a child grows up in a number of separate, but related, contexts: her neighborhood and school, the occupations of her parents and their level of satisfaction in these occupations, her parents' relationships with each other and their own families, and so on.

Discussion Launcher (Learning Objective 1.2.4)

Ask the class to give examples of how these contexts interact with one another.

Vulnerability and Resilience

When considering the contexts, we have to keep in mind that all of the various contexts interact with each other and with the characteristics of the individuals who are developing within them, such as the concepts of vulnerability and resilience. According to the vulnerability/resilience view, each child is born with certain vulnerabilities, such as tendency toward emotional irritability or alcoholism, a physical abnormality, an allergy, or whatever. Each child is also born with some protective factors, such as high intelligence, good physical coordination, and easy temperament, or a lovely smile, that tend to make the child more resilient in the face of stress.

Inborn vulnerabilities and protective factors interact with the child's environment, so the same environment can have quite different effects, depending on the qualities the child brings to the interaction. Children with a number of inborn protective factors who grow up in a poor environment might do well because they can find and take advantage of all the stimulation and opportunities available. Similarly, children with one or more inborn vulnerabilities might do quite well in a highly supportive environment

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in which parents help them overcome or cope with the vulnerabilities. Vulnerable children in poor environments might experience really poor outcomes.

Discussion Launcher (Learning Objective 1.2.4)

Ask the class to give examples of vulnerabilities and resiliencies.

The characteristics of the larger society in which a child's family and neighborhood are embedded need to be factored in as well. Culture describes some system of meanings and customs, including values, attitudes, goals, laws, beliefs, morals, and physical artifacts of various kinds, such as tools, forms of dwellings, and the like. Culture shapes not only the development of individuals, but our ideas about what normal development is.

Discussion Launcher (Learning Objective 1.2.4)

Ask the class to give examples of how culture affects development.

One final aspect of the context within which an individual's development occurs involves gender. Two individuals can be quite similar with regard to their individual characteristics and the environment within which they grow up. If one is female and the other male, they will experience the interaction between their characteristics and their environment differently. For example, the effects of the earliness or lateness with which a child goes through puberty depend on gender. Thus, early and late puberty have different meanings for boys and girls.

Discussion Launcher (Learning Objective 1.2.4)

Ask the class to give examples of the gender differences in the interaction between an individual's characteristics and his or her environment.

1.3: RESEARCH METHODS

The easiest way to understand research methods is to look at a specific question and the alternative ways we might answer it. For example, older adults frequently complain that they have more trouble remembering people's names than they did when they were younger. Suppose we wanted to find out whether memory really declines with age. How would we go about answering this question?

By the end of this module, you will be able to:

- 1.3.1 Identify the goals that researchers of human development try to achieve
- 1.3.2 Contrast the advantages and disadvantages of each descriptive method
- 1.3.3 Explain the primary advantage of the experimental method over descriptive methods

KEY TERMS 1.3

theories	survey	experiment
hypotheses	population	experimental group
variables	sample	control group
descriptive methods	representative sample	independent variable
naturalistic observation	social desirability	dependent variable
case study	correlation	quasi-experiments

laboratory observation

1.3.1: THE GOALS OF DEVELOPMENTAL SCIENCE

Objective: Identify the goals that researchers of human development try to achieve.

Think back to the observation that older adults frequently complain that they have more trouble remembering people's names than they did when they were younger. Studying this observation scientifically would require that we approach it in steps. The first step is to estimate how many older adults actually experience memory problems of this kind and how such problems affect their everyday lives. Next, we would probably speculate about why it happens. Our speculations would then guide our observations in a way that would tell us how accurate our speculations are. Finally, if our speculations turned out to have some validity, we might try to use them to help an older adult overcome such problems. As you will see, each of these steps represents one of the four goals that guide developmental science.

Goals of Developmental Science

Developmental psychology uses the scientific method to achieve the following four goals to study human development from conception to death. To describe development is simply to state what happens. Explaining development involves telling why a particular event occurs. Developmentalists rely on theories, sets of statements that propose general principles to explain development and to generate explanations. Useful theories produce predictions or hypotheses. Developmentalists hope to use their findings to influence developmental outcomes such as modifying the behavior in some way.

Feature Box Activity (Learning Objective 1.3.1)

No Easy Answers: It Depends . . .

In groups, ask the class to describe a scenario in which someone might want to predict the long-term outcome, such as the incidence of child abuse mentioned in the text. Each group should then list as many variables as possible that could influence the outcome. Report each group's ideas to the whole class.

Writing Prompt (Learning Objective 1.3.1)

Consider This—"It Depends" Applied to Parental Divorce

There are many situations in which parents would like to have specific, research-supported guidance from developmentalists that would ensure their children's well-being. For instance, parents who divorce are usually concerned about the effects on their children. Think of at least five variables that might affect how a child will respond to her parents' divorce. List and describe the variables. Read over your list, and reflect on the complexities involved in predicting developmental outcomes.

1.3.2: DESCRIPTIVE METHODS

Objective: Contrast the advantages and disadvantages of each descriptive method.

A researcher who is interested in age and memory ability must decide how to go about finding relationships between variables. To developmentalists, variables are characteristics that vary from person to person, such as physical size, intelligence, and personality. When two or more variables vary together, there is some kind of relationship between them. The hypothesis that memory declines with age involves

two variables—memory and age—and suggests a relationship between them. Developmental scientists use several descriptive methods to address the goals of describing and organizing phenomena.

Observational Methods

When psychologists use the naturalistic observation method, they observe people in their normal environments. Such studies provide developmentalists with information about psychological processes in everyday contexts. The weakness of the method is observer bias in which a researcher ignores any behavior that goes against the hypothesis. To overcome observer bias, researchers only use “blind” observers who don’t know what the research is about, and in most cases, two or more observers are used for the sake of accuracy. The results have limited generalizability and are very time-consuming. Laboratory observation, the observation of behavior under controlled conditions, differs from naturalistic observation in that the researcher exerts some degree of control over the environment.

Case Studies

Case studies are in-depth examinations of single individuals. Case studies don’t tell us if the findings apply to others, but they are useful in making decisions about individuals. They are also frequently the basis of important hypotheses about unusual developmental events, such as head injuries and strokes.

Discussion Launcher (Learning Objective 1.3.2)

Ask the class to give examples of studies that use case studies.

Surveys

A survey is a study in which researchers use interviews and/or questionnaires to collect data about attitudes, interests, values, and various kinds of behaviors. Surveys allow researchers to quickly gather information, and they can track changes over time.

The value of any survey depends entirely on how representative the sample of participants is of the researcher’s population of interest. A population is the entire group about which the researcher is attempting to learn something; a sample is a subset of that group. A representative sample is one that includes the same proportion of participants as in the population. Survey participants are sometimes influenced by the perceived social desirability of their answers.

Correlational Methods

A correlation is a number ranging from -1.00 to $+1.00$ that describes the strength of a relationship between two variables. A correlation of zero indicates that there is no relationship between those variables. A positive correlation means that high scores on one variable are usually accompanied by high scores on the other. The closer a positive correlation is to $+1.00$, the stronger the relationship between the variables. Two variables that move in opposite directions result in a negative correlation, and the nearer the correlation is to -1.00 , the more strongly the two are connected. Correlations have a major limitation: they do not tell us about causal relationships. In order to identify causes, we have to carry out experiments.

Feature Box Activity (Learning Objective 1.3.2)

Correlation Versus Causation

Provide the class with examples of correlational studies that would be unethical to perform as experimental research. In groups, ask the class to give additional examples to clarify the differences between correlational research and experimental research.

Writing Prompt (Learning Objective 1.3.2)

Consider This—Evaluating Research in the Media

How would you apply the ideas in this discussion to interpreting a news report about a study “proving” that being raised by a single parent is harmful to young children? If such a study were reported, what variables other than single parenthood itself might explain the results?

1.3.3: THE EXPERIMENTAL METHOD

Objective: Explain the primary advantage of the experimental method over descriptive methods.

An experiment is a study that tests a causal hypothesis—something causes something to happen.

Features of Experiments

Random assignment of participants to one of two or more groups is a key feature of an experiment. Chance determines the group in which the researcher places each subject. When subjects are randomly assigned to groups, the groups have equal averages and equal amounts of variation with respect to variables like intelligence, personality traits, height, weight, and health status. Consequently, none of these variables can affect the outcome of the experiment.

Participants in the experimental group receive the treatment the researcher thinks will produce a particular effect, while those in the control group receive either no treatment or a neutral treatment. The presumed causal element in the experiment is called the *independent variable* and the behavior on which the independent variable is expected to show its effect is called a *dependent variable*.

Discussion Launcher (Learning Objective 1.3.3)

Suppose you want to see if children who watch play violent video games are more aggressive than children who do not watch violent TV. Identify the following parts of the experiment: independent variable, dependent variable, experimental group, and control group.

The Limitations of the Experimental Method

Experiments are essential for our understanding of many aspects of development, but two special problems in studying human development limit the use of experiments. Many of the questions researchers want to answer have to do with the effects of particularly unpleasant or stressful experiments on individuals, such as abuses, prenatal influences such as alcohol or tobacco, low birth weight, poverty, unemployment, or widowhood. For obvious ethical reasons, we cannot manipulate these variables; to study the effects of such experiences, we must rely on nonexperimental methods, like correlations.

The independent variable that developmentalists are often most interested in is age itself, and researchers cannot assign participants randomly to age groups. To get around the problem, researchers can use any one of a series of strategies, sometimes called *quasi-experiments*, studies with manipulated independent variables but no random assignment of participants to experiments and control groups. Quasi-experiments are studies in which researchers compare members of naturally occurring groups that differ in some dimension of interest.

Discussion Launcher (Learning Objective 1.3.3)

Ask the class to give examples of how research on each of the variables listed above could be done without using an experiment. Tie the discussion to correlations and to quasi-experiments.

Writing Prompt (Learning Objective 1.3.3)

Consider This—Experimental Studies of Physical Punishment

How do practical and ethical considerations limit researchers' ability to study the effects of physical punishment on children's development? That is, would it be possible, in a practical sense, to randomly assign children to parents who physically punish them and parents who punish in other ways? If so, would there be ethical concerns about such a study? How could the quasi-experimental method be used to answer questions about the effects of punishment?

1.4: RESEARCH DESIGNS

In addition to deciding which method to use, developmental scientists must also determine how to incorporate age into their research design. They must also take cultural differences into account. Finally, ethical standard governs research examining age-related changes.

By the end of this module, you will be able to:

- 1.4.1 Compare cross-sectional, longitudinal, and sequential designs
- 1.4.2 Explain the importance of cross-cultural research to the study of human development
- 1.4.3 Outline the ethical standards that developmental researchers must follow

KEY TERMS 1.4

cross-sectional design
cohort effects
longitudinal design

practice effects
sequential design

ethnography
research ethics

1.4.1: CROSS-SECTIONAL, LONGITUDINAL, AND SEQUENTIAL DESIGNS

Objective: Compare cross-sectional, longitudinal, and sequential research designs.

If you wanted to study age-related changes in behavior, how would you go about it? Essentially, you would have two options: compare individuals of different ages or study a group of individuals at different points in their lives. These strategies are quite similar to those that developmental scientists use. There are three general strategies for incorporating age into the research design:

1. Study different groups of people of different ages, called a *cross-sectional design*.
2. Study the same people over a period of time, called a *longitudinal design*.

3. Combine cross-sectional and longitudinal designs in some fashion in a sequential design.

Cross-Sectional Designs

A cross-sectional design is one in which researchers compare individuals of different ages with regard to one or more variable. Cohort effects, findings that result from historical factors to which one age group in a cross-sectional study has been exposed, limit the usefulness of cross-sectional results. Despite the limitation of cross-sectional design, developmental researchers use them frequently. One reason they do so is that cross-sectional studies require less resources than other designs. They also produce results fairly quickly. Researchers often use cross-sectional studies to examine an emerging hypothesis than in a more costly method. If the hypothesis received support, researchers can then move on to other types of designs that are less vulnerable to cohort effects.

Discussion Launcher (Learning Objective 1.4.1)

After the students read the section, “An Example of a Cross-Sectional Design,” and view Figure 1.1: “Tastiness Ratings,” discuss possible cohort effects that might have influenced the participants in the study. Repeat the process regarding Figure 1.2: “Definitions of Unnatural.”

Discussion Launcher (Learning Objective 1.4.1)

Suppose a cross-sectional study of sex-role attitudes reveals that the adults between ages 20 and 50 have the most egalitarian attitudes, while teenagers and adults over 50 have more traditional attitudes. How might cohort differences influence your interpretation of these results?

Longitudinal Designs

Longitudinal designs, studies in which people in a single group are studied at difference times in their lives, seem to solve the problems presented by cross-sectional designs because they follow the same individual over a period of time. Each study of the same individuals allows us to look at sequences of change and at individual consistency or inconsistency over time. Because they compare performances by the same people at different ages, they get around the obvious cohort problem.

Longitudinal designs, however, have several major difficulties. One problem is that longitudinal designs typically involve giving each subject the same test repeatedly. Over time, people learn how to take the tests and the practice effects may distort the measurement of any underlying developmental changes.

Another significant problem is that not everyone sticks with the program; some subjects drop out, and others die or move away. As a rule, the healthiest and best educated are most likely to stick it out, and that fact biases the results, particularly if the study covers the final decades of life. Each successive testing includes proportionately more and more healthy adults, which makes it look as if there is less change, or less decline, than actually exists.

Longitudinal studies also don’t really get around the cohort problem. With subjects born in the same decade who showed the same pattern of change with age, we wouldn’t know whether the pattern was unique to that cohort, or if it reflected more basic developmental changes that would be observed in other cultures and other cohorts.

Discussion Launcher (Learning Objective 1.4.1)

Ask the students to look at Figure 1.3: An Example of a Longitudinal Study,” and suggest ways the social clock might have influenced the increase in self-confidence for each group in their 30s, and factors that might have influenced the differences when the groups were in their 50s.

Sequential Designs

One way to avoid the shortcomings of both cross-sectional and longitudinal designs is to use a sequential design. A researcher using a sequential design would begin with at least two age groups. Investigators then test each group over a number of years. Each testing point beyond the initial one provides researchers with two types of comparisons—age-group comparisons like in a cross-sectional study, and comparisons of each group to itself at an earlier testing point like in a longitudinal design. Sequential designs also allow for comparisons of cohorts. Finding the same developmental pattern in two cohorts provides psychologists with stronger evidence than either cross-sectional or longitudinal data alone.

Discussion Launcher (Learning Objective 1.4.1)

Using the previous example about children who play violent video games and their levels of aggression, how would you design the study as cross-sectional research? Longitudinal research? Sequential research?

1.4.2: Cross-Cultural Research

Objective: Explain the importance of cross-cultural research to the study of human development.

Increasingly common in developmental psychology are studies comparing cultures or contexts, a task that researchers approach in several ways.

- One strategy, borrowed from the field of anthropology, is an ethnography, a detailed description of a single culture or context based on extensive observation. Often the observer lives within the culture for a period of time, perhaps as long as several years.
- Alternatively, investigators may attempt to compare two or more cultures directly, by testing children or adults in each of several cultures with the same or comparable measures. Sometimes this involves comparing across different countries. Sometimes the comparisons are between subcultures with the same country, such as involving comparisons of children or adults living in different ethnic groups or communities, such as African Americans, Hispanic Americans, Asian Americans, and European Americans.

Cross-cultural research is important to developmental psychology for the following two reasons:

- Developmentalists want to identify universal changes, that is, predictable events or processes that occur in individuals’ lives in all cultures. Without cross-cultural research, it is impossible to know whether studies involving North Americans and Europeans apply to people in other parts of the world.
- One of the goals of developmental psychology is to produce findings that can be used to improve people’s lives. Cross-cultural research is critical to this goal as well. Cross-cultural research helps developmentalists identify specific variables that explain cultural differences.

Discussion Launcher (Learning Objective 1.4.2)

Ask the class to give examples of research that could use cross-cultural design.

Each research method has advantages and disadvantages. Likewise, each research design has advantages and disadvantages.

Table 1.5 Review of Research Methods and Designs

Method	Description	Advantages	Disadvantages
Naturalistic Observation	Observation of behavior in natural setting	Participants behave naturally	Researchers' expectations can influence results; little control over conditions
Case Studies	In-depth study of one or a few individuals using observation, interviews, or psychological testing	In-depth information; important in the study of unusual events	Results may not generalize beyond the case that is studied; time-consuming, subject to misinterpretation
Surveys	Interviews, questionnaires, used to gather information quickly	Accurate information about large groups; track changes	Validity limited by sample representativeness; responses influenced by questions, social desirability
Correlational Studies	Determination of mathematical relationship between two variables	Assess strength and direction of relationships	Cannot demonstrate cause and effect
Experiments	Random assignment of participants to control and experimental groups; manipulation of independent (causal) variable	Identification of cause–effect relationships	Results may not generalize to nonresearch settings; many variables cannot be studied in experiments
Cross-Sectional Designs	Participants of different ages studied at one time	Quick access to data about age differences	Ignores individual differences; cohort effects
Longitudinal Designs	Participants in one group studies several times	Track developmental changes in individuals and groups	Time-consuming findings may apply only to the group that is studied
Sequential Designs	Study that combines both longitudinal and cross-sectional components	Cross-sectional and longitudinal data relevant to the same hypothesis	Time-consuming; different attrition rates across groups
Cross-Cultural Research	Research that either describes cultures or includes culture as a variable	Information about universality and culture specificity of age-related changes	Time-consuming; difficult to construct tests and methods that are equally valid in different cultures

1.4.3: RESEARCH ETHICS

Objective: Outline the ethical standards that developmental researchers must follow.

Research ethics are the guidelines researchers follow to protect the rights of animals and humans who participate in studies. Ethical guidelines are published by professional organizations like the American Psychological Association, American Educational Research Association, and Society for Research in Child Development. Guidelines for animal research include the requirement that animals be protected from unnecessary pain and suffering. Furthermore, researchers must demonstrate that the potential

benefits of their studies to either human or animal populations must be greater than any potential harm to human or animal subjects.

Ethical standards for research involving human participants address several major concerns that focus on the social and psychological risks of participating in studies. These concerns include issues of informed consent, confidentiality, knowledge of results, and deception.

Protection From Harm—it is unethical to do research that may cause permanent physical or psychological harm to subjects. If the possibility of temporary harm exists, researchers must provide subjects with some way of repairing the damage.

Informed Consent—Researchers must inform subjects of any possible harm and require them to sign a consent form stating that they are aware of the risks involved in participation. Parents must give permission for children to participate after the researcher has informed them of possible risks. Children older than 7 must also give their own consent. If the research takes place in a school or day-care center, an administrator representing the institution must consent. In addition, both children and adults have the right to discontinue participation in a study at any time. Researchers are obligated to explain this right to children in language they can understand.

Confidentiality—Participants have the right to confidentiality. Researchers must keep the identities of participants confidential and must report their data in such a way that no particular piece of information can be associated with any specific participant. The exception to confidentiality is when children reveal to researchers that they are or have been abused in any way by an adult. In most states, all citizens are required to report suspected cases of child abuse.

Knowledge of Results—Participants, their parents, and administrators of institutions in which research takes place have a right to a written summary of a study's results.

Deception—If deception has been a necessary part of a study, participants have the right to be informed about the deception as soon as the study is over.

Writing Prompt (Learning Objective 1.4.3)

Consider This—Deception in Research

What are the pros and cons of allowing researchers to deceive participants about the purpose of a study? What are the pros and cons of requiring researchers to inform participants that they have been deceived after a study is over?

Shared Writing (Chapter 1)

Research and Social Problems

Decide which of these two statements you agree with more, and think about how you would defend your position:

- Relevant research findings should be the most important factor in the formation of social policies.
- Research findings represent only one of several sources of information that ought to be considered in the formation of social policies.

LECTURE ENHANCERS

Non-Western Philosophical Views of Development

As the text points out, the original sin, innate goodness, and blank slate views of development are associated with Western culture. Understanding how philosophical perspectives in other cultures differ from them is important to understanding why parenting and educational practices often vary across cultures. When we examine philosophies of development across cultures, we find both similarities to and differences from these three points of view. For example, Judaism agrees with Rousseau that children are naturally good but in need of training from adults, as in Locke's blank slate approach.

The notion of development as a struggle, like the original sin view, is present in both Hinduism and Buddhism, systems of thought that are common in India and some other parts of Asia (Ozman & Craver, 1986). However, the struggle is primarily an internal one between an individual's spiritual and physical natures. Children are taught the law of *karma*, the idea that the sum of a person's good and bad deeds determines whether he or she must repeat the cycle of life, that is, be reincarnated, after death. In adulthood, moral success is defined in terms of the degree to which an individual has succeeded in following his spiritual rather than physical nature.

In China, Japan, and Korea, Confucian ideas have been particularly influential (Serpell & Hatano, 1997). Children are seen as morally neutral, as in Locke's blank slate perspective. However, developmental outcomes are presumed to result from both environmental influences and the individual's own efforts. There is also a great deal of emphasis on perfect emulation of good models.

Ozman, H. & Craver, S. (1986). *Philosophical foundations of education*. Columbus, OH: Merrill.

Serpell, R. & Hatano, G. (1997). Education, schooling, and literacy. In J. Berry, P. Dasen, & T. Saraswathi (Eds.), *Handbook of cross-cultural psychology, Vol. 2: Basic processes and human development*. Boston, MA: Allyn & Bacon.

The Difference Between an Experiment and a Correlation

Many times researchers are confronted with information that does not come from experimental data. Instead, the correlational method is used. The information illustrates a relationship between two events and the degree to which the occurrence of those events is meaningful. The correlation is a statistical technique for measuring the degree of relationship between two events or variables.

For example, a town discovers a significant correlation between the amount of ice cream bought and the number of violent crimes. The newspaper splashes the front page with the following headline, “Ice Cream Consumption Increases Violence.” What assumption has this article made? Primarily that the link between ice cream and violence is clear. Secondly, this article assumes that there is no other possible explanation for the relationship and that there is no other unknown factor that could explain the occurrence of both increased ice cream consumption and violent crimes. Many questions would need to be asked and answered to truly reach the conclusion this headline has reached. These questions include the following:

- How is violence being defined?
- Are we sure that the same people who bought the ice cream are the ones who committed the violence?
- What other factors may be linked to both?

Clearly, alternative explanations exist. Most notably, it is possible that the data was collected during the summer, and that the true culprit in the increasing violence is the outside temperature and not the amount of ice cream being purchased. Research shows a very clear connection between temperature and violence. In this case, the apparent relationship between ice cream and violence is a false one. Assumptions of causality can only be made to the extent that the experimental method has been utilized. For example, a scientist conducts the following experiment:

- Half of the subjects are assigned to a condition of eating ice cream, and the other half of the subjects are given pudding to eat. All other characteristics of the subjects are similar.
- After the food has been consumed, all subjects are made angry.
- Next, subjects were told that they have been assigned the role of “teacher” in a learning task, and it is their job to administer an electric shock to the “learner” after every mistake the learner makes.
- The experimenter utilized the intensity of the shocks administered to the “learner” as a measure of violence.

If, under these conditions, the group that ate ice cream administers significantly more intense shocks to the learner than those who ate pudding, a much stronger statement can be made. In the study, with the intensity of the shock as the measure of violence, those subjects who ate ice cream truly behaved in a more violent manner.

This example illustrates the difference between the experimental method and the correlational method. In the experimental method, the experimenter has control and manipulates what happens to the groups. If all other features of the groups are the same (or if subjects are randomly assigned to groups so that other characteristics of the subjects would be random within the groups), and differences are discovered between the two groups, there is a lot more power for assuming that the difference was due to the food they were given.

All of the elements of a successful experiment were present in the shock example:

- An experimental group is defined as the group that gets the manipulation of interest.
- A control group is defined as the group that is as similar as possible to the experimental group except they do not receive the treatment, so they eat pudding instead of ice cream.
- An independent variable is defined as the variable that we manipulate or the difference between our

- groups—in this case, the type of food they are given.
- A dependent variable is defined as the variable that we measure—in this case, the amount of violence as measured by the intensity of shocks.

Obviously, correlational data do not include these components. They merely describe the degree to which two events occur together. The variables are not systematically manipulated variables to differences. There is nothing wrong with correlational data, but no assumptions can be made about what caused the variables to be related.

In the above experiment, the treatment of the subjects was manipulated. The only difference between the two groups was the food they were given (the independent variable). When the two groups then showed a difference on the violence measure (the dependent variable), we are in a good position to state that ice cream consumption (those serving as our experimental group) increased the degree of violence in comparison to the control group (those who ate pudding).

STUDENT ACTIVITY OR STUDENT PROJECT

Divide students into groups of 3 or 4. Assign each group a combination of some or all of the following concepts in this chapter:

1. Domain: physical, cognitive, or social
2. Period of Development: prenatal, infancy, early childhood, middle childhood, adolescence, early adulthood, middle adulthood, or late adulthood
3. Continuity Versus Discontinuity research: qualitative or quantitative
4. Kind of Change: normative age-graded, normative history-graded, or nonnormative
5. Research Method: descriptive (observational methods, case studies, surveys, or correlational methods) or experimental method
6. Research Design: cross-sectional, longitudinal, or sequential design

Students are to design a research study relevant to lifespan development and share it with the rest of the class. Consider using peer grading of the accuracy of each groups' choices.