Child Development

Child Development

DENISE CUMMINGS-CLAY, HOSTOS COMMUNITY COLLEGE

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PART I

FACULTY RESOURCES

1. Request Access

To preserve academic integrity and prevent students from gaining unauthorized access to faculty resources, we verify each request manually.

Contact oer@achievingthedream.org and we'll get you on your way.

Overview of Faculty Resources

This is a community course developed by an Achieving the Dream grantee. They have either curated or created a collection of faculty resources for this course. Since the resources are openly licensed, you may use them as is or adapt them to your needs.

Now Available

- Assignments

Share Your Favorite Resources

If you have sample resources you would like to share with other faculty teaching this course, please send them with an explanatory message and learning outcome alignment to oer@achievingthedream.org.

2. I Need Help

Need more information about this course? Have questions about faculty resources? Can't find what you're looking for? Experiencing technical difficulties?

We're here to help! Contact oer@achievingthedream.org for support.

PART II

ASSIGNMENTS

3. School Proposal Paper

Assignment: Paper – School Proposal
Value: 20 Points

NAEYC Standards: 1, promoting child development and learning; 2; building family and community relationships; 4, using developmentally effective approaches to connect with children and families; 5, using content knowledge to build meaningful curriculum; 6, becoming a professional

NAEYC Supportive Skills: 2, mastering and applying foundational concepts from general education; 3, written and verbal communication skills; 5 Identifying and using professional resources.

Imagine that you are starting up a new school for young children in the Early Childhood years. You have the chance to structure it in any way you choose, based upon the philosophical underpinnings of Vygotsky, Piaget and Montessori. Please use these philosophies as you create a Welcome Packet for parents considering sending their children to your school. Back up your statements and ideas with outside reading. Include the following in your proposal:

- What would your school physically look like? Include maps.
- How will the children learn best?
- What is a typical school day structure?
- What is the role of the teacher?
- What is the role of the parent?
- What is the role of the community?
- Please provide four (4) mini lessons (Lucy Calkins) across the content areas that you might use in your school.
- Feel free to add anything else that you feel might be

important.

- Don’t forget to add your reference list at the end in APA format.
- Don’t forget to cite IN- TEXT in APA format.

4. Children's Television Review Rubric

Name of Student_____

Children's Television Review Rubric

- Watch two (2) hours of children's television programming.
- Write a review of the programming you have watched for a magazine or newsletter to parents of young children. Be clear about whether you would recommend this program or not, and give clear advice about anything parents may want to discuss with their children regarding it. Answer the questions that follow:

1. What is the likely impact of the programming on children's cognitive skills (i.e. vocabulary and logical skills)?
2. What types of opinions and attitudes toward education are conveyed in this programming?
3. Is violence or aggression portrayed in the program? In what context?
4. What messages about gender doe the program contain?
5. Does the programming contain ethnic or racial stereotypes? If so, how are these stereotypes used?
6. Your review must also include information on the title of the program or film you reviewed, and on where and when it was broadcast.

- Integrate class readings and outside peer-reviewed research on gender and social development into your presentation.

Category/ Points	Excellent	Competent	Beginning	Score
Media Piece Analysis 40 Points	The analysis answers four to six of the questions indicated above. 26-40 points	The analysis answers three of the questions indicated above. 11-25 points	The analysis answers two or less questions indicated above. 0-10 points	
Advice to Parents 20 Points	The writer presents four or more tips to parents regarding mediation of images. 16-20 points	The writer presents one to three tips to parents regarding mediation of images. 8-15 points	The writer fails to present any tips to parents regarding mediation of images. 0-7 points	
Organization 15 Points	Organization of the paper is well defined, integrated, and logical. 11-15 points	Organization of the paper is clear enough to follow without difficulty. However, improve it by making logical transitions between ideas and paragraphs. 7-10 points	Organization of the paper is difficult to follow. Improve it by integrating resources, giving your advice to parents, and making logical transitions between ideas and paragraphs. 0-6 points	
Scholarly Sources 15 Points	Paper includes at least two or more scholarly source(s) to support the writer's ideas. 11-15 points	Only one scholarly source is included and/ or the source is weak in how it supports the writer's ideas. 7-10 points	Scholarly sources for the writer's ideas are not provided. 0-6 points	

APA Format 10 Points	APA Style is used accurately for citing sources and references. 8-10 points	APA Style is used partially. There are consistent errors with how sources are cited and/or referenced. 4-7 points	APA Style is not used or used incorrectly for both citations and reference sources. 0-3 points
Total Points			

- On your Reference page, single-space each reference, indent all lines after Line 1 by five spaces, double-space between the word, “Reference,” and the first reference as well as between each reference.
- Work on word usage, grammar usage, and/or punctuation usage.

PART III

MODULE 1: INTRODUCTION TO CHILD DEVELOPMENT

5. Nature vs. Nurture

Developmental psychology seeks to understand the influence of genetics (nature) and environment (nurture) on human development.

LEARNING OBJECTIVE

- Evaluate the reciprocal impacts between genes and the environment and the nature vs. nurture debate

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KEY POINTS

- A significant issue in developmental psychology has been the relationship between the innateness of an attribute (whether it is part of our nature) and the environmental effects on that attribute (whether it is derived from or influenced by our environment, or nurture).
- Today, developmental psychologists rarely take polarized positions with regard to most aspects of development; instead, they investigate the relationship between innate and environmental influences.
- The biopsychosocial model states that biological, psychological, and social factors all play a significant role in human development.
- Environmental inputs can affect the expression of genes, a relationship called gene-environment interaction. An

individual's genes and their environment work together, communicating back and forth to create traits.
    - The diathesis–stress model serves to explore how biological or genetic traits (diatheses) interact with environmental influences (stressors) to produce disorders, such as depression, anxiety, or schizophrenia.

TERMS

- genotypeThat part (DNA sequence) of the genetic makeup of a cell, and therefore of an organism or individual, which determines a specific characteristic (phenotype) of that cell/organism/individual.
- heritabilityThe ratio of the genetic variance of a population to its phenotypic variance; i.e., the proportion of variability that is genetic in origin.
- geneA unit of heredity; a segment of DNA or RNA that is transmitted from one generation to the next and carries genetic information such as the sequence of amino acids for a protein.
- traitAn identifying characteristic, habit, or trend.
- innateInborn; native; natural.

Developmental Psychology

Developmental psychology is the scientific study of changes that occur in human beings over the course of their lives. This field examines change and development across a broad range of topics, such as motor skills and other psycho-physiological processes; cognitive development involving areas

like problem solving, moral and conceptual understanding; language acquisition; social, personality, and emotional development; and self-concept and identity formation. Developmental psychology explores the extent to which development is a result of gradual accumulation of knowledge or stage-like development, as well as the extent to which children are born with innate mental structures as opposed to learning through experience.

Nature Versus Nurture

A significant issue in developmental psychology is the relationship between the innateness of an attribute (whether it is part of our *nature*) and the environmental effects on that attribute (whether it is influenced by our environment, or *nurture*). This is often referred to as the *nature vs. nurture* debate, or *nativism vs. empiricism.*

- A nativist ("nature") account of development would argue that the processes in question are innate and influenced by an organism's genes. Natural human behavior is seen as the result of already-present biological factors, such as genetic code.
- An empiricist ("nurture") perspective would argue that these processes are acquired through interaction with the environment. Nurtured human behavior is seen as the result of environmental interaction, which can provoke changes in brain structure and chemistry. For example, situations of extreme stress can cause problems like depression.

The nature vs. nurture debate seeks to understand how our personalities and traits are produced by our genetic makeup and biological factors, and how they are shaped by our environment, including our parents, peers, and culture. For instance, why do

biological children sometimes act like their parents? Is it because of genetic similarity, or the result of the early childhood environment and what children learn from their parents?

Interaction of Genes and the Environment

Today, developmental psychologists rarely take such polarized positions (either/or) with regard to most aspects of development; instead, they investigate the relationship between innate and environmental influences (both/and). Developmental psychologists will often use the biopsychosocial model to frame their research: this model states that biological, psychological, and social (socio-economical, socio-environmental, and cultural) factors all play a significant role in human development.

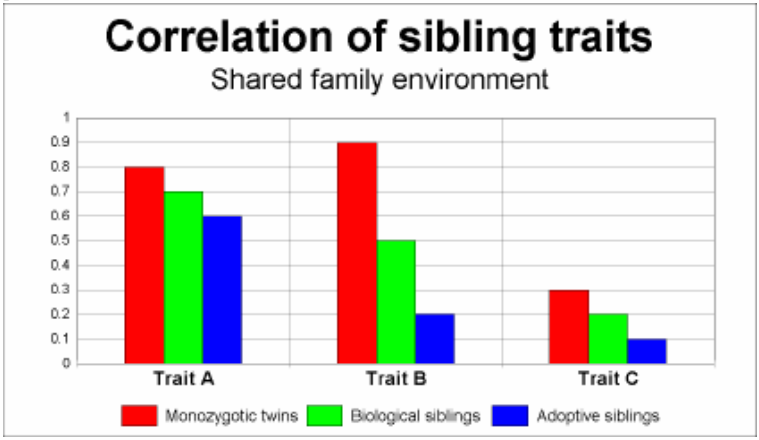
We are all born with specific genetic traits inherited from our parents, such as eye color, height, and certain personality traits. Beyond our basic genotype, however, there is a deep interaction between our genes and our environment: our unique experiences in our environment influence whether and how particular traits are expressed, and at the same time, our genes influence how we interact with our environment (Diamond, 2009; Lobo, 2008). There is a reciprocal interaction between nature and nurture as they both shape who we become, but the debate continues as to the relative contributions of each.

Heritability refers to the origin of differences among people; it is a concept in biology that describes how much of the variation of a trait in a population is due to genetic differences in that population. Individual development, even of highly heritable traits such as eye color, depends not only on heritability but on a range of environmental factors, such as the other genes present in the organism and the temperature and oxygen levels during development. Environmental inputs can affect the expression of genes, a relationship called *gene-environment interaction*. Genes

and the environment work together, communicating back and forth to create traits.

Some concrete behavioral traits are dependent upon one's environment, home, or culture, such as the language one speaks, the religion one practices, and the political party one supports. However, some traits which reflect underlying talents and temperaments—such as how proficient at a language, how religious, or how liberal or conservative—can be partially heritable.

This chart illustrates three patterns one might see when studying the influence of genes and environment on individual traits. Each of these traits is measured and compared between monozygotic (identical) twins, biological siblings who are not twins, and adopted siblings who are not genetically related. Trait A shows a high sibling correlation but little heritability (illustrating the importance of environment). Trait B shows a high heritability, since the correlation of the trait rises sharply with the degree of genetic similarity. Trait C shows low heritability as well as low correlation generally, suggesting that the degree to which individuals display trait C has little to do with either genes or predictable environmental factors.



Heritability Estimates

This chart illustrates three patterns one might see when studying the influence of genes and environment on individual traits. Typically, monozygotic twins will have a high correlation of sibling traits, while biological siblings will have less in common, and adoptive siblings will have less than that. However, this can vary widely by trait.

Diathesis-Stress Model

The diathesis–stress model is a psychological theory that attempts to explain behavior as a predispositional vulnerability together with stress from life experiences. The term *diathesis* derives from the Greek term for disposition, or vulnerability, and it can take the form of genetic, psychological, biological, or situational factors. The diathesis, or predisposition, interacts with the subsequent stress response of an individual. Stress refers to a life event or series of events that disrupt a person's psychological equilibrium and potentially serve as a catalyst to the development of a disorder. Thus, the diathesis–stress model serves to explore how biological or genetic traits (diatheses) interact with environmental influences (stressors) to produce disorders, such as depression, anxiety, or schizophrenia.

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6. Development of the Human Brain

The mental processes and behaviors studied by psychology are directly controlled by the brain, one of the most complex systems in nature.

LEARNING OBJECTIVE

- Explain the structure of the major layers of the brain

KEY POINTS

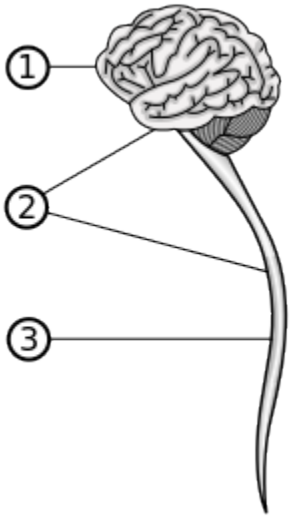
- The study of psychology focuses on the interaction of mental processes and behavior on a systemic level, and therefore is intimately related to understanding the brain.
- One of the most complex systems in nature, the brain is composed of systems that must all work together to keep the human body functioning.
- The brain is split up into three major layers: the hindbrain, the midbrain, and the forebrain.

TERM

- neural tubeAn embryo's predecessor to the central nervous system.

FULL TEXT

The human brain is one of the most complex systems on earth. Every component of the brain must work together in order to keep its body functioning. The brain and the spinal cord make up the central nervous system, which alongside the peripheral nervous system is responsible for regulating all bodily functions.



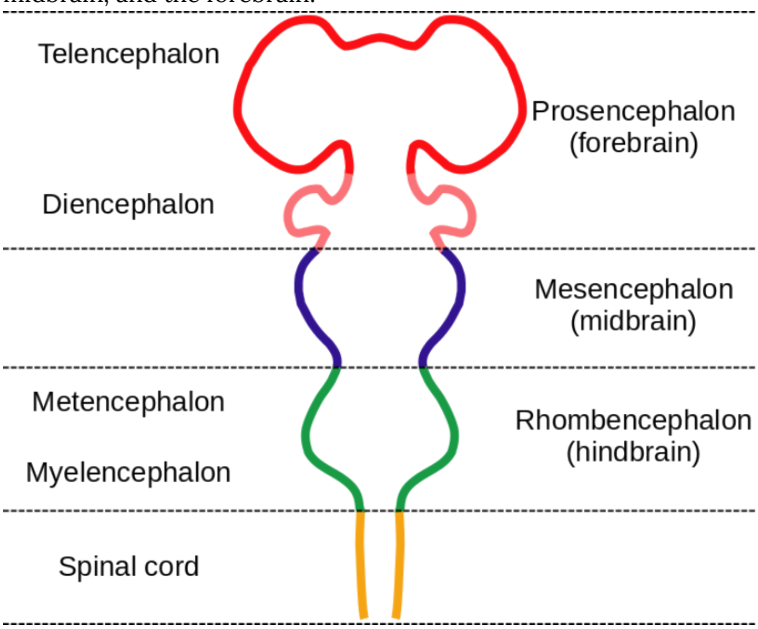
The central nervous system

1. Brain 2. Brain stem 3. Spinal cord

Psychology seeks to explain the mental processes and behavior of individuals by studying the interaction between mental processes and behavior on a systemic level. Therefore, the field of psychology is tightly intertwined with the study of the brain.

The Structure of the Brain

The developing brain goes through many stages. In the embryos of vertebrates, the predecessor to the brain and spinal cord is the neural tube. As the fetus develops, the grooves and folds in the neural tube deepen, giving rise to different layers of the brain. The human brain is split up into three major layers: the hindbrain, the midbrain, and the forebrain.



The embryonic brain

The layers of the embryonic brain. The telencephalon and diencephalon give rise to the forebrain, while the metencephalon and myelencephalon give rise to the hindbrain.

Hindbrain

The hindbrain is the well-protected central core of the brain. It includes the cerebellum, reticular formation, and brain stem, which are responsible for some of the most basic autonomic functions of life, such as breathing and movement. The brain stem contains the pons and medulla oblongata. Evolutionarily speaking, the hindbrain contains the oldest parts of the brain, which all vertebrates possess, though they may look different from species to species.

Midbrain

The midbrain makes up part of the brain stem. It is located between the hindbrain and forebrain. All sensory and motor information that travels between the forebrain and the spinal cord passes through the midbrain, making it a relay station for the central nervous system.

Forebrain

The forebrain is the most anterior division of the developing vertebrate brain, containing the most complex networks in the central nervous system. The forebrain has two major divisions: the

diencephalon and the telencephalon. The diencephalon is lower, containing the thalamus and hypothalamus (which together form the limbic system); the telencephalon is on top of the diencephalon and contains the cerebrum, the home of the highest-level cognitive processing in the brain. It is the large and complicated forebrain that distinguishes the human brain from other vertebrate brains.

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7. Introduction to Life Span, Growth and Development

Learning Objectives

At the end of this lesson, you should be able to:

1. Explain the study of human development.
2. Define physical, cognitive, and psychosocial development.
3. Differentiate periods of human development.
4. Analyze your own location in the life span.
5. Judge the most and least preferable age groups with which to work.
6. Contrast social classes with respect to life chances.
7. Explain the meaning of social cohort.
8. Critique stage theory models of human development.
9. Define culture and ethnocentrism and describe ways that culture impacts development.
10. Explain the reasons scientific methods are more objective than personal knowledge.
11. Contrast qualitative and quantitative approaches to research.
12. Compare research methods noting the advantages and disadvantages of each.
13. Differentiate between independent and dependent variables.

Welcome to life span, growth and development. This is the study of how and why people change or remain the same over time.

This course is commonly referred to as the "womb to tomb" course because it is the story of our journeys from conception to death. Human development is the study of how we change over time. Although this course is often offered in psychology, this is a very interdisciplinary course. Psychologists, nutritionists, sociologists, anthropologists, educators, and health care professionals all contribute to our knowledge of the life span.

We will look at how we change physically over time from early development through aging and death. We examine cognitive change, or how our ability to think and remember changes over time. We look at how our concerns and psychological state is influenced by age and finally, how our social relationships change throughout life.

There are several goals of those involved in this discipline:

1. **Describing change**-many of the studies we will examine simply involve the first step in investigation, which is description. Arnold Gesell's study on infant motor skills, for example.

2. **Explaining changes** is another goal. Theories provide explanations for why we change over time. For example, Erikson offers an explanation about why our two-year-old is temperamental.

Think about how you were 5, 10, or even 15 years ago. In what ways have you changed? In what ways have you remained the same? You have probably changed physically; perhaps you've grown taller and become heavier. But you may have also experienced changes in the way you think and solve problems. Cognitive change is noticeable when we compare how 6 year olds, 16 year olds, and 46 year olds think and reason, for example. Their thoughts about others and the world are probably quite different. Consider friendship for instance. The 6 year old may think that a friend is someone with whom you can play and have fun. A 16 year old may seek friends who can help them gain status or popularity. And the 46 year old may have acquaintances, but rely more on family members to do things with and confide in. You may have also experienced psychosocial change. This refers emotions and psychological concerns as well as social relationships. Psychologist Erik Erikson suggests that we struggle with issues of independence, trust, and intimacy at various points in our lives. (We will explore this thoroughly throughout the course.)

Our journeys through life are more than biological; they are shaped by culture, history, economic and political realities as much as they are influenced by physical change. This is a very interesting and practical course because it is about us and those with whom we live and work. One of the best ways to gain perspective on our own lives is to compare our experiences with that of others. By periodically making cross-cultural and historical comparisons and by presenting a variety of views on issues such as healthcare, aging, education, gender and family roles, I hope to give you many eyes with which to see your own development. This occurs frequently in the classroom as students from a variety of cultural backgrounds discuss their interpretations of developmental tasks and concerns. I hope to recreate this rich experience as much as possible in this

text. So, for example, we will discuss current concerns about the nutrition of children in the United States (for a middle-class boy of 11 years who is 130 pounds overweight and suffering with Pediatric Type II diabetes) as well as malnutrition experienced by children in Ethiopia as a result of drought. Being self-conscious can enhance our ability to think critically about the systems we live in and open our eyes to new courses of action to benefit the quality of life. And knowing about other people and their circumstances can help us live and work with them more effectively. An appreciation of diversity enhances the social skills needed in nursing, education, or any other field.

New Assumptions and Understandings

I took my first graduate course in life span over 20 years ago. Much time was spent on the period of childhood, less on adolescence, and very little attention was given to adulthood. The message was clear: once you are 25, your development is essentially completed. Our academic knowledge of the life span has changed and although there is still less research on adulthood than on childhood, adulthood is gaining increasing attention. This is particularly true now that the large cohort known as the baby boomers are beginning to enter late adulthood. There is so much we need to find out about love, housing, health, nutrition, exercise, social, and emotional development with this large group. (Visit your local bookstore or search the internet and you will find many new titles in the self-help and psychology sections that address this population.)

I was also introduced to the theories of Freud, Erikson, and Piaget, the classic stage theorists whose models depict development as occurring in a series of predictable stages. Stage theories had a certain appeal to an American culture experiencing dramatic change in the early part of the 20th century. But that sense of security was not without its costs; those who did not develop in

predictable ways were often thought of as delayed or abnormal. And Freudian interpretations of problems in childhood development, such as autism, held that such difficulties were in response to poor parenting. Imagine the despair experienced by mothers accused of causing their child's autism by being cold and unloving. It was not until the 1960s that more medical explanations of autism began to replace Freudian assumptions.

Freud and Piaget present a series of stages that essentially end during adolescence. For Freud, we enter the genital stage in which much of our motivation is focused on sex and reproduction and this stage continues through adulthood. Piaget's fourth stage, formal operational thought, begins in adolescence and continues through adulthood. Again, neither of these theories highlights developmental changes during adulthood. Erikson, however, presents eight developmental stages that encompass the entire lifespan. For that reason, Erikson is known as the "father" of developmental psychology and his psychosocial theory will form the foundation for much of our discussion of psychosocial development.

Today we are more aware of the variations in development and the impact that culture and the environment have on shaping our lives. We no longer assume that those who develop in predictable ways are normal and those who do not are abnormal. And the assumption that early childhood experiences dictate our future is also being called into question. Rather, we have come to appreciate that growth and change continues throughout life and experience continues to have an impact on who we are and how we relate to others. And we recognize that adulthood is a dynamic period of life marked by continued cognitive, social, and psychological development.

Who Studies Human Development?

Many academic disciplines contribute to the study of life span and

this course is offered in some schools as psychology; in other schools it is taught under sociology or human development. This multidisciplinary course is made up of contributions from researchers in the areas of health care, anthropology, nutrition, child development, biology, gerontology, psychology, and sociology among others. Consequently, the stories provided are rich and well-rounded and the theories and findings can be part of a collaborative effort to understand human lives.

Many Contexts

People are best understood in context. What is meant by the word "context"? It means that we are influenced by when and where we live and our actions, beliefs, and values are a response to circumstances surrounding us. Sternberg describes a type of intelligence known as "contextual" intelligence as the ability to understand what is called for in a situation (Sternberg, 1996). The key here is to understand that behaviors, motivations, emotions, and choices are all part of a bigger picture. Our concerns are such because of who we are socially, where we live, and when we live; they are part of a social climate and set of realities that surround us. Our social locations include cohort, social class, gender, race, ethnicity, and age. Let's explore two of these: cohort and social class.

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8. Lecture: Introduction to Life Span, Growth and Development

A YouTube element has been excluded from this version of the text. You can view it online here: https://library.achievingthedream.org/hostoschilddevelopmenteducation/?p=26

Lecture Transcript

Welcome to life span, growth and development. This is the study of how and why people change or remain the same over time.

Although this course is offered in psychology, this is a very interdisciplinary course. Psychologists, nutritionists, sociologists, anthropologists, educators, and health care professionals all contribute to our knowledge of life span. We will look at how we change physically over time from early development through aging and death. We examine cognitive change-or how our ability to think and remember changes over time. We look at how our concerns and psychological state is influenced by age and finally, how our social relationships change throughout life.

There are several goals of those involved in this discipline:

1. **Describe change**-many of the studies we will examine simply involve the first step in investigation, which is description. Arnold Gesell's study on infant motor skills, for example.
   2. **Explaining changes**is another goal. Theories provide explanations for why we change over time. For example, Erikson offers an explanation about why our two-year-old is temperamental. Levinson offers an explanation about why a 45 year old husband is so concerned with buying a sports car. Freud offers an explanation of why films with sex and violence are such moneymakers.
   3. **Predict**-science offers us the ability to make predictions about what the future holds. In some areas, we can make predictions about the future. For example, we know some about how smoking and drinking can affect prenatal development.
   4. **Influence change**-ultimately, practitioners want to help people lead better, healthier and happier lives.

What is a **context**? You may think of it as the background or setting in which a person exists. Our lives are impacted by a variety of contexts. We may have different world views depending on life circumstances. For example, people who grew up during the Great Depression of the 1930s in the U. S. suffered economically and

sometimes carried that idea of thrift with them throughout their lives.

When and where we live creates this context. Some examples of contexts include cohort, social class, and culture.

A **cohort** is a group of people born within the same generation in a geographic location. A **social class** is a category of people who share similar levels of education, income, occupational status, and consumption patterns. **Culture** refers to a way of life of a group of people. Through culture, we learn what to strive for, what to eat, what to think, how to behave, and so many other things. An interesting story in the news last week was an interview of an Asian student who is studying children's interpretations of art and how this is influenced by culture. In middle class America, children are taught to look at detail and function. "This is a sturdy car that rides fast." But in Asia, children are taught to think more abstractly about images. The ways in which our own culture affects us is often hard to see.

We grow used to our own views and ways of doing things and assume that our ways are best. Ethnocentrism is the belief in the superiority of one's own culture and is a natural outcome from being raised in a particular culture. However, it can get in the way of understanding other cultural beliefs and practices. Cultural relativity is the ability to appreciate how another culture's practices may be best within that culture rather than judging a practice from one's own viewpoint.

Let me tell you a story to illustrate these concepts. Once upon a time, a long time ago, there were two creatures: a monkey and a fish. Along came a great flood. The monkey, being strong and agile, quickly climbed to the top of a tree to escape the raging waters. He looked down from his safe place and saw his friend the fish, struggling in the water. With the very best of intentions, the monkey climbed down from the tree and pulled the fish out of the water. The result was inevitable. The message is this: understanding and ultimately being able to help others requires that we also understand the contexts for development and take these into

consideration when making decisions or judgments. This is particularly important if we are in a role of delivering care.

All cultures have some system of stratification. This means that categories of people are ranked in a hierarchy within society and that more wealth, status, and privilege are found when moving up. Systems can be based on social class as is the case in the United States. One profile of social class is presented in this slide. A more thorough description of each class is provided in your reading.

The **upper class** is the smallest category and represents the highest amounts of wealth and power.

The **upper middle class** is larger and consists of more highly paid professionals who have higher levels of education, status, and wealth.

The **middle class** is larger still and is comprised of people who hold professional jobs that pay less and have less status.

The **working class** is also a large category consisting of people who are more likely to hold jobs in vocational skills or trade occupations.

The **working poor** have seasonal, inconsistent, and low-paying occupations and all of the difficulties associated with financial insecurity.

The **underclass** is the most impoverished and the least powerful group.

Exercises

With which social classes are you most likely to be involved? With whom would you feel most comfortable? Why? How might you become more effective when working with someone of a social class that differs from your own? What kinds of difficulties would people of a certain social class experience and how would these impact education, health care, nutrition, and stress levels?

Many early theories of human development were created and popularized in the early 1900s. These are referred to as stage theories because they present development as occurring in stages. The assumption is that once one stage is completed, a person moves into the next stage and that stages tend to occur only once. Some examples of stage theories that we will be studying include Freud's

psychosexual stages, Erikson's psychosocial stages, and Piaget's stages of cognitive development, to name a few.

These theories are appealing in a way because they provide the ability to predict what will happen next and they allow us to attribute behavior to a person's being 'in a stage'. These theories offered the security of understanding human behavior in a time of rapid change during industrialization in the early 1900s. Science seemed to be laying a predictable groundwork we could rely upon. But these early theories also implied that those who did not progress through stages in the predictable way were delayed somehow and this led to the idea that development had to occur in a patterned way.

Today we understand that development does not occur in a straight line. Sometimes we change in many directions depending on our experiences and surroundings. For example, there can be growth and decline in cognitive functioning at any age depending on nutrition, health, activity, and stimulation. And that both nature (heredity) and nurture (the environment) shape our abilities throughout life. Some things about us are continuous such as our temperament or sense of self, perhaps. And we may revisit a stage of life more than once. For instance, Erikson suggests that we struggle with trust as infants and then begin to focus more on independence or autonomy. But if we are in circumstances in which our independence is jeopardized, such as becoming physically dependent, we may struggle with trust again. Keep these thoughts in mind as we explore stage theories in our next lesson.

The study of human development is based on research. Let's look at the methods used to understand development. In other words, how do we know what we know?

All of us know some things about human development. But how do we know these things? Very often, it's a matter of personal knowledge. I have ideas about children, largely based on my experiences with my own two daughters. I know about myself because of what I've been through. So it's based on what I know directly, personally. But there are problems with personal

knowledge. Ever hear the expression, "Seeing is believing"? It suggests that in order to know something, I have to see it.

But social psychologists tell us that this is not how the mind works. Typically, we have a belief about something and that belief guides what we perceive. (So for example, if I believe that teenagers are argumentative, I'm more likely to notice when my teenaged daughter is in a bad mood or is argumentative than when she's compliant and happy.) Science is designed to get us to be more objective in what we observe to get out of the 'believing is seeing' trap.

Confirmation bias is the tendency to look for evidence that we are right. This bias can keep us from seeing what is really going on when working with patients, or students, or anyone else. Practitioners, for example, can get used to seeing a certain kind of cases and assume that anyone with the same set of symptoms must also have the same illness. Sometimes this can get in the way of delivering an accurate diagnosis. An example that comes to mind is one in which a 40 year old woman who was very thin wasn't diagnosed as anorexic for some time because of her age. But, in fact, anorexia was the problem. The clinician assumed that anorexia was only found in younger women.

Sampling bias is the tendency to get information from people who are accessible or close to us when trying to find out about how the world works. If I ask those who live and work with me about parenting, or health, or love, I'm going to find out about their situations but not about the views of those unlike me who live and work outside my boundaries. As a result, my knowledge is biased and incomplete.

Have you ever heard of the "scientific method"? Chances are, if you have, you've heard of the quantitative method. It involves a set of procedures ultimately designed to give numeric expression to a phenomenon or to quantify what is happening and perhaps, to test whether or not what is happening could be due to chance.

Quantitative methods involve beginning with a research question, reviewing the literature to see what others have found in their

research of the topic, determining specifically what aspect of the topic to explore in your research and determining the most appropriate method to use for your purposes, conducting the study, which means finding your sample, administering your survey or conducting your experiments, interpreting the results by analyzing your data, drawing conclusions about what you have found, and finally sharing your findings with others in the scientific community by publishing your research. This method has been favored in the scientific community for some time. It has been viewed as the most scientifically rigorous.

Qualitative methods of research involve using a more open, evolving approach to finding out about the world. There is less emphasis on quantifying what is known and more emphasis on tapping into the experiences, assumptions, and meanings subjects give to their situations. Qualitative methods can be used to explore an area about which little is known or to get a fresh look at a situation that has been studied before. The use of narratives in which the researcher tries to find out what is going on by using the subjects' own words is one approach. Qualitative methods are used in anthropology, education, nursing, and other areas where the researcher wishes to be led by the participants into seeing what they deem as important.

The researcher begins with a broad interest and gains entrance into a setting in which to explore. Information is gathered using a variety of techniques such as observation, documenting the physical space and surroundings of that setting, recording interviews, etc. After gathering general information, the researcher may decide to focus more closely on specific research questions. Patterns may become apparent as the researcher revisits their field notes and spends more time in a setting. These prompt the researcher to explore new ideas until they feel they reach a point of saturation, or a feeling that they've thoroughly explored the situation. Patterns and answers to research questions are noted in a report of the findings.

Let's explore types of research or research designs. These are

several ways in which researchers gather information. All have advantages and disadvantages.

Some advantages of this method include:

- You observe behavior in the natural environment. Our surroundings often shape our behavior.
- You can see what people do rather than relying on them to tell you what they do.
- You can generate hypotheses that can guide future research.

Disadvantages include:

- Because you have not randomly selected your sample to observe, you cannot make general statements from your findings. In other words, if I observe children on a playground in a small community in the Pacific Northwest, I can't assume that all children will behave in a similar manner.
- Observational studies are often descriptive only. They allow us to describe behavior, but not to explain why something has occurred.

In research, concepts or ideas take the form of variables. Variables are factors that change in value.

An **independent variable** is one that is controlled by or introduced by the researcher. In experimental research, it is a potential causal variable. In other words, it introduced to see if it brings about a change or effect. (Keep in mind that not all independent variables are causal. Some are correlational meaning they are related to another factor, but haven't been established as the cause of change in the other factor.)

Dependent variables are outcomes. They tend to be what the research is all about. They are called dependent because their value depends on what has been introduced.

The primary advantage of the experimental design is its ability to isolate cause and effect relationships. In order to establish a cause

and effect relationship between variables, three conditions have to be met. First, the independent and dependent variable have to be related in some way. For example, if the independent variable is increased or decreased, the dependent variable must change in some way. Correlational studies focus on these relationships. Second, the independent variable must come before the dependent variable. What aspect of experimental design tells us that the independent variable had to be introduced before the dependent variable could change? Finally, we have to know that there is no outside cause creating the change that we see. What aspect of experimental design helps us to eliminate outside or unknown causes? The disadvantages of experimental design include the **Hawthorne Effect** and the potential difficulty in creating real life situations in an artificial, laboratory environment. For example, can we recreate in a laboratory setting the altruism that people exhibit toward one another after a natural disaster?

Case studies involve focusing attention on a single person or situation. The researcher gathers information in a variety of ways to find out as much as possible about the case. Clinicians, whether they are physicians, nurses, social workers, or psychotherapists often use a modified case study approach when finding out about a patient or client. They observe behavior, administer tests, and interview the person to gather information. The case study method of research is often used by clinicians too.

Case studies are a good way to explore unusual situations and can provide a basis for hypotheses that can be tested in other research. Confirmation bias can occur when clinicians trained to see a particular problem see it even when it isn't there. For example, psychotherapists are often trained to see psychopathology in those they serve. As a result, they may miss seeing what's right with a person. Surveys involve asking a standard or consistent set of questions with a sample of people from the population of interest. Those who answer the survey are often given a set of responses from which to choose.

Surveys are used a lot because they allow you to reach a large

number of people in a limited amount of time. The use of internet, telephone, and mail allow the researcher to gather information from people far and near. Disadvantages of surveys include their reliance on self-report. In other words, the people answering the survey are reporting on their behavior and sometimes what we say we do is not the same as what we actually do. It's difficult to survey people about sensitive topics. Participants may be reluctant to give honest answers about activities that are stigmatized. And survey questions have to be worded carefully in order to not bias the answers given. These questions need to be worded in a neutral way to give 'permission' to answer candidly. The responses available must be thorough as well so that participants feel comfortable in choosing a response.

Secondary or content analysis involves analyzing information that has already been collected whether that is in the media or through another agency that gathers data, such as the census.

One of the clearest advantages is the time saved from not having to recruit participants and gather information from them. But if the data that has been gathered by someone else is faulty in some way, for example inaccurate, the results drawn through secondary analysis will also be faulty. And an analysis of media may not accurately reflect people's actual behavior or attitudes.

Some research designs that are especially useful in studying human development include cross-sectional, longitudinal, and cross-sequential designs. Cross-sectional research involves looking at a varied group (representing gender, race, age groups, etc.) at one point in time. Longitudinal research involves following a particular group over a long period of time. Cross-sequential research involves following a varied group over a long period of time. What would be the advantages and disadvantages of each?

9. Culture

Culture is often referred to as a blueprint or guideline shared by a group of people that specifies how to live. It includes ideas about what is right and wrong, what to strive for, what to eat, how to speak, what is valued, as well as what kinds of emotions are called for in certain situations. Culture teaches us how to live in a society and allows us to advance because each new generation can benefit from the solutions found and passed down from previous generations.

What, and how, we eat is often determined by our culture.

Culture is learned from parents, schools, churches, media, friends and others throughout a lifetime. The kinds of traditions and values that evolve in a particular culture serve to help members function in their own society and to value their own society. We tend to believe that our own culture's practices and expectations are the right ones. (This belief that our own culture is superior is called **ethnocentrism** and is a normal by-product of growing up in a culture. It becomes a roadblock, however, when it inhibits understanding of cultural practices from other societies.) Cultural relativity is an appreciation for cultural differences and the understanding that cultural practices are best understood from the standpoint of that particular culture.

Culture is an extremely important context for human development and understanding development requires being able to identify which features of development are culturally based. This understanding is somewhat new and still being explored. So much of what developmental theorists have described in the past has

been culturally bound and difficult to apply to various cultural contexts. The reader should keep this in mind and realize that there is still much that is unknown when comparing development across cultures. (For example, consider Erikson's assumption that teenagers struggle with identity assumes that all teenagers live in a society in which they have many options and must make an individual choice about their future. In many parts of the world, one's identity is determined by family status or society's dictates. In other words, there is no choice to make.)

Even the most biological of events can be viewed in cultural contexts that vary extremely. Consider two very different cultural responses to menstruation in young girls. In the United States, girls in public school often receive information on menstruation in around 5th grade. The extent to which they are also taught about sexual intercourse, reproduction, or sexually transmitted infections depends on the policy of the school district guided by state and local community standards and sentiments. But menstruation is addressed and girls receive information and a kit containing feminine hygiene products, brochures, and other items. For example, menstruation is interpreted as an event that can affect the mood of a young girl and temporarily render her difficult, hostile, or simply hard to be around. But, she is encouraged to have a "happy" period with this product and is also encouraged to wish her friends a happy period as well through a product-sponsored website (www.beinggirl.com/happy).

Contrast this with the concern that a lack of sanitary "towels" or feminine napkins causes many girls across Africa to miss more than a month of school each year during menstruation. Education is essential in these countries for moving ahead and the lack of sanitary towels places these girls at a tremendous educational disadvantage. The one-dollar price tag on towels is prohibitive in countries such as Kenya where most families earn about 54 cents per day. The lack of towels also results in unsanitary practices such as the use of blankets or old cloths to manage the menstrual flow. In some parts of Africa, reusable or washable sanitary towels are used,

but in countries such as Kenya where there is little water, this would not be a solution. And in instances where towels were donated and given out without educating girls on how to use them, girls have folded them up and used them as tampons, a practice that can lead to serious infection (Mawathe, 2006). (Find out more about this at the Girl Child Network at http://www.girlchildnetwork.org/sanitary-towels-campaign-programme.html).

Exercise

Think of other ways culture may have affected your development. How might cultural differences influence interactions between teachers and students, nurses and patients, or other relationships?

10. Cultural and Societal Influences on Child Development

Culture plays an important role in influencing childhood development, and what is considered "normal" varies greatly from one culture to the next.

LEARNING OBJECTIVE

- Examine the influence of culture on childhood development

KEY POINTS

- The society and culture in which one grows up influence everything from developmental milestones and parenting styles to what kinds of hardship one is more likely to face.
- While biological milestones such as puberty tend to be universal across cultures, social milestones, such as the age at which children begin formal schooling or individuate from their parents, can differ greatly from one culture to the next.
- Effective parenting styles also vary as a function of culture. While the authoritative parenting style is the style that is most encouraged in modern American society, other cultures value more authoritarian styles.

- Race and racial stereotypes can have detrimental effects on a child's development. Children are taught the stereotypes that go along with their race(s) and the races of others, and these stereotypes can have a strong influence on their development.
- Race is also closely linked to class, and children of color are still statistically much more likely to lack access to basic resources and to experience economic hardship.
- The concept of intersectionality is important to keep in mind when examining the cultural influences of various forms of discrimination on child development.

TERMS

- racializedCategorized or treated in a particular way based on race.
- milestoneAn important event in a person's life or career, in the history of a nation, in the life of some project, etc.
- stereotypeA conventional, formulaic, and oversimplified conception, opinion, or image.

Child development refers to the biological, psychological, and emotional changes that occur in humans between birth and the end of adolescence, as the individual progresses from dependency to increasing autonomy. Culture plays an important role in influencing this development, and what is considered "normal" development varies greatly from one culture to the next. The society and culture in which one grows up influence everything from developmental milestones and parenting styles to what kinds of hardship one is more likely to face.

Developmental Milestones

The normative approach to development examines the question "What is normal development?" In the early decades of the 20th century, normative psychologists studied large numbers of children at various ages to determine the average ages at which most children reach specific physical, cognitive, and psychosocial milestones in development (Gesell, 1933, 1939, 1940; Gesell & Ilg, 1946; Hall, 1904). Not all of the milestones were universal, meaning they are not experienced by all individuals across all cultures. Biological milestones such as puberty tend to be universal, while social milestones, such as the age at which children begin formal schooling or individuate from their parents, can differ greatly across cultures (Gesell & Ilg, 1946).

Parenting Styles

Effective parenting styles also vary as a function of culture. While the authoritative parenting style (characterized by the parent giving reasonable demands, setting consistent limits, expressing warmth and affection, and listening to the child's point of view) is the style that is most encouraged in modern American society, this is not necessarily the case in other cultures. American children raised by authoritative parents tend to have high self-esteem and social skills. In contrast, authoritarian parenting (characterized by parents placing high value on conformity and obedience, tightly monitoring their children, and expressing less warmth) is seen as more beneficial in other cultures. For instance, first-generation Chinese American children raised by authoritarian parents did just as well in school as their peers who were raised by authoritative parents (Russell et al., 2010).

The effects of parenting style: different parenting styles influence children differently depending on cultural norms and standards.

Race, Class, and Intersecting Identities

Race and other identities are often sites of discrimination and oppression in societies; as such, they can have a tremendous impact on childhood development. The United States is a very racialized society, and children—especially children of color—often become aware of the dynamics of racism at a very young age. Children are taught the stereotypes that go along with their particular race(s), as well as the races of others, and these stereotypes can have a strong influence on their development.

Stereotype Threat

Stereotypes and racialized expectations often contribute to *stereotype threat*, in which a child experiences anxiety or concern in a situation that has the potential to confirm a negative stereotype about his or her social group. For example, if an African-American child is given the message that black people are not as "smart" as white people, she may worry if she is not doing well in school because it will, she fears, confirm the negative stereotype.

Importantly, stereotype threat has been shown to be something of a self-fulfilling prophecy—not because the negative stereotype is accurate, but because fear of fulfilling that stereotype can lead to additional anxiety, which in turn can reduce performance. For example, stereotype threat can lower the intellectual performance of black students taking the SAT, due to the stereotype that they are less intelligent than other groups, which may cause them to feel additional pressure and anxiety.

Examining Intersectionality

Intersectionality is the study of the intersections, or the relationships, between different forms or systems of discrimination or oppression. This theory suggests that—and seeks to examine how—various biological, social, and cultural categories such as gender, race, class, ability, sexual orientation, religion, caste, and other areas of identity interact and contribute to various forms of social inequality. Intersectionality holds that different forms of discrimination—such as racism, sexism, biphobia, ableism, transphobia, and classism—do not act independently of one another; instead, they interrelate and create a system based on multiple forms of discrimination.

All of these factors are important to keep in mind when examining the cultural influences of such discrimination on child development. For example, the experience of growing up as an African-American girl in the United States cannot be understood only in terms of being black *or* of being female; instead, the ways in which these identities interact and frequently reinforce each other must be examined. Race is also closely linked to class, and people of color are still statistically much more likely to lack access to basic resources and experience economic hardship. These resources include everything from proper nutrition and healthcare to good education systems and neighborhood parks. All of these societal factors

intersect and interact to influence a child's development, so much so that a child from a middle-class white family has many more opportunities than a child from a lower-income family of color.

11. Periods of Development

Think about the life span and make a list of what you would consider the periods of development. How many stages are on your list? Perhaps you have three: childhood, adulthood, and old age. Or maybe four: infancy, childhood, adolescence, and adulthood. Developmentalists break the life span into nine stages as follows:

- Prenatal Development
- Infancy and Toddlerhood
- Early Childhood
- Middle Childhood
- Adolescence
- Early Adulthood
- Middle Adulthood
- Late Adulthood
- Death and Dying

This list reflects unique aspects of the various stages of childhood and adulthood that will be explored in this book. So while both an 8 month old and an 8 year old are considered children, they have very different motor abilities, social relationships, and cognitive skills. Their nutritional needs are different and their primary psychological concerns are also distinctive. The same is true of an 18 year old and an 80 year old, both considered adults. We will discover the distinctions between being 28 or 48 as well. But first, here is a brief overview of the stages.

Prenatal Development

Conception occurs and development begins. All of the major structures of the body are forming and the health of the mother is of primary concern. Understanding nutrition, teratogens (or environmental factors that can lead to birth defects), and labor and delivery are primary concerns.

Infancy and Toddlerhood

Newborn photo courtesy Fenja2

The first year and a half to two years of life are ones of dramatic growth and change. A newborn, with a keen sense of hearing but very poor vision is transformed into a walking, talking toddler within a relatively short period of time. Caregivers are also transformed from someone who manages feeding and sleep schedules to a constantly moving guide and safety inspector for a mobile, energetic child.

Early Childhood

Photo Courtesy Walter de Maria

Early childhood is also referred to as the preschool years consisting of the years which follow toddlerhood and precede formal schooling. As a three to five-year-old, the child is busy learning language, is gaining a sense of self and greater independence, and is beginning to learn the workings of the physical world. This

knowledge does not come quickly, however, and preschoolers may have initially have interesting conceptions of size, time, space and distance such as fearing that they may go down the drain if they sit at the front of the bathtub or by demonstrating how long something will take by holding out their two index fingers several inches apart. A toddler's fierce determination to do something may give way to a four-year-old's sense of guilt for doing something that brings the disapproval of others.

Middle Childhood

Photo Courtesy Pink Sip

The ages of six through eleven comprise middle childhood and much of what children experience at this age is connected to their involvement in the early grades of school. Now the world becomes one of learning and testing new academic skills and by assessing one's abilities and accomplishments by making comparisons between self and others. Schools compare students and make these comparisons public through team sports, test scores, and other forms of recognition. Growth rates slow down and children are able

to refine their motor skills at this point in life. And children begin to learn about social relationships beyond the family through interaction with friends and fellow students.

Adolescence

Photo Courtesy Overstreet

Adolescence is a period of dramatic physical change marked by an overall physical growth spurt and sexual maturation, known as puberty. It is also a time of cognitive change as the adolescent begins to think of new possibilities and to consider abstract concepts such as love, fear, and freedom. Ironically, adolescents have a sense of invincibility that puts them at greater risk of dying from accidents or contracting sexually transmitted infections that can have lifelong consequences.

Early Adulthood

Photo Courtesy Josh Gray

The twenties and thirties are often thought of as early adulthood. (Students who are in their mid 30s tend to love to hear that they are a young adult!). It is a time when we are at our physiological peak but are most at risk for involvement in violent crimes and substance abuse. It is a time of focusing on the future and putting a lot of energy into making choices that will help one earn the status of a full adult in the eyes of others. Love and work are primary concerns at this stage of life.

Middle Adulthood

The late thirties through the mid-sixties is referred to as middle adulthood. This is a period in which aging, that began earlier, becomes more noticeable and a period at which many people are at their peak of productivity in love and work. It may be a period of gaining expertise in certain fields and being able to understand problems and find solutions with greater efficiency than before. It can also be a time of becoming more realistic about possibilities in life previously considered; of recognizing the difference between what is possible and what is likely. This is also the age group hardest hit by the AIDS epidemic in Africa resulting in a substantial decrease in the number of workers in those economies (Weitz, 2007).

Late Adulthood

Photo Courtesy Overstreet

This period of the life span has increased in the last 100 years, particularly in industrialized countries. Late adulthood is sometimes subdivided into two or three categories such as the "young old" and "old old" or the "young old", "old old", and "oldest old". We will follow the former categorization and make the distinction between the "young old" who are people between 65 and 79 and the "old old" or those who are 80 and older. One of the primary differences between these groups is that the young old are very similar to midlife adults; still working, still relatively healthy, and still interested in being productive and active. The "old old" remain productive and active and the majority continues to live independently, but risks of the diseases of old age such as

arteriosclerosis, cancer, and cerebral vascular disease increases substantially for this age group. Issues of housing, healthcare, and extending active life expectancy are only a few of the topics of concern for this age group. A better way to appreciate the diversity of people in late adulthood is to go beyond chronological age and examine whether a person is experiencing optimal aging (like the gentleman pictured above who is in very good health for his age and continues to have an active, stimulating life), normal aging (in which the changes are similar to most of those of the same age), or impaired aging (referring to someone who has more physical challenge and disease than others of the same age).

Death and Dying

Photo Courtesy Robert Paul Young

This topic is seldom given the amount of coverage it deserves. Of course, there is a certain discomfort in thinking about death but there is also a certain confidence and acceptance that can come from studying death and dying. We will be examining the physical, psychological and social aspects of death, exploring grief or bereavement, and addressing ways in which helping professionals work in death and dying. And we will discuss cultural variations in mourning, burial, and grief.

PART IV

MODULE 2: FOUNDATIONS OF GROWTH

12. Video: The Chemical Mind

What exactly happens when we get scared? How does our brain make our body react? Just what are Neurotransmitters? The video takes us to the simplest part of the complex system of our brains and nervous systems, the neuron.

https://www.youtube.com/watch?v=W4N-7AlzK7s

13. Growth Stages 1: Infancy and Early Childhood

http://www.oercommons.org/courses/growth-stages-1-infancy-and-early-childhood/view

14. Early adverse experiences: what does the latest brain research tell us?

http://earlychildhoodmagazine.org/early-adverse-experiences-what-does-the-latest-brain-research-tell-us/

15. Moral development: forming a sense of rights and responsibilities

Morality is a system of beliefs about what is right and good compared to what is wrong or bad. **Moral development** refers to changes in moral beliefs as a person grows older and gains maturity. Moral beliefs are related to, but not identical with, moral *behavior*: it is possible to know the right thing to do, but not actually do it. It is also not the same as knowledge of *social conventions*, which are arbitrary customs needed for the smooth operation of society. Social conventions may have a moral element, but they have a primarily practical purpose. Conventionally, for example, motor vehicles all keep to the same side of the street (to the right in the United States, to the left in Great Britain). The convention allows for smooth, accident-free flow of traffic. But following the convention also has a moral element, because an individual who chooses to drive on the wrong side of the street can cause injuries or even death. In this sense, choosing the wrong side of the street is wrong morally, though the choice is also unconventional.

When it comes to schooling and teaching, moral choices are not restricted to occasional dramatic incidents, but are woven into almost every aspect of classroom life. Imagine this simple example. Suppose that you are teaching, reading to a small group of second-graders, and the students are taking turns reading a story out loud. Should you give every student the same amount of time to read, even though some might benefit from having additional time? Or should you give more time to the students who need extra help, even if doing so bores classmates and deprives others of equal shares of "floor time"? Which option is more fair, and which is more considerate? Simple dilemmas like this happen every day at all grade

levels simply because students are diverse, and because class time and a teacher's energy are finite.

Embedded in this rather ordinary example are moral themes about fairness or justice, on the one hand, and about consideration or care on the other. It is important to keep both themes in mind when thinking about how students develop beliefs about right or wrong. A **morality of justice** is about human rights—or more specifically, about respect for fairness, impartiality, equality, and individuals' independence. A **morality of care**, on the other hand, is about human responsibilities—more specifically, about caring for others, showing consideration for individuals' needs, and interdependence among individuals. Students and teachers need both forms of morality. In the next sections therefore we explain a major example of each type of developmental theory, beginning with the morality of justice.

Kohlberg's morality of justice

One of the best-known explanations of how morality of justice develops was developed by Lawrence Kohlberg and his associates (Kohlberg, Levine, & Hewer, 1983; Power, Higgins, & Kohlberg, 1991). Using a stage model similar to Piaget's, Kohlberg proposed six stages of moral development, grouped into three levels. Individuals experience the stages universally and in sequence as they form beliefs about justice. He named the levels simply preconventional, conventional, and (you guessed it) postconventional. The levels and stages are summarized in Table 1.

Table 1: Moral stages according to Kohlberg	
Moral stage	**Definition of what is "good"**
Preconventional Level	
Stage 1: Obedience and punishment	Action that is rewarded and *not* punished
Stage 2: Market exchange	Action that is agreeable to the child and child's partner
Conventional Level	
Stage 3: Peer opinion	Action that wins approval from friends or peers
Stage 4: Law and order	Action that conforms to the community customs or laws
Postconventional Level	
Stage 5: Social contract	Action that follows socially accepted ways of making decisions
Stage 6: Universal principles	Action that is consistent with self-chosen, general principles

Preconventional justice: obedience and mutual advantage

The *preconventional* level of moral development coincides approximately with the preschool period of life and with Piaget's preoperational period of thinking. At this age the child is still relatively self-centered and insensitive to the moral effects of actions on others. The result is a somewhat short-sighted orientation to morality. Initially (Kohlberg's Stage 1), the child adopts an **ethics of obedience and punishment**—a sort of "morality of keeping out of trouble." The rightness and wrongness of actions is determined by whether actions are rewarded or punished by authorities such as parents or teachers. If helping yourself to a cookie brings affectionate smiles from adults, then taking the cookie is considered morally "good." If it brings scolding instead, then it is

morally "bad." The child does not think about why an action might be praised or scolded; in fact, says Kohlberg, he would be incapable at Stage 1 of considering the reasons even if adults offered them.

Eventually the child learns not only to respond to positive consequences, but also learns how to *produce* them by exchanging favors with others. The new ability creates Stage 2, an **ethics of market exchange**. At this stage the morally "good" action is one that favors not only the child, but another person directly involved. A "bad" action is one that lacks this reciprocity. If trading the sandwich from your lunch for the cookies in your friend's lunch is mutually agreeable, then the trade is morally good; otherwise it is not. This perspective introduces a type of fairness into the child's thinking for the first time. But it still ignores the larger context of actions—the effects on people not present or directly involved. In Stage 2, for example, it would also be considered morally "good" to pay a classmate to do another student's homework—or even to avoid bullying or to provide sexual favors—provided that both parties regard the arrangement as being fair.

Conventional justice: conformity to peers and society

As children move into the school years, their lives expand to include a larger number and range of peers and (eventually) of the community as a whole. The change leads to *conventional morality*, which are beliefs based on what this larger array of people agree on—hence Kohlberg's use of the term "conventional." At first, in Stage 3, the child's reference group are immediate peers, so Stage 3 is sometimes called the **ethics of peer opinion**. If peers believe, for example, that it is morally good to behave politely with as many people as possible, then the child is likely to agree with the group and to regard politeness as not merely an arbitrary social convention, but a moral "good." This approach to moral belief is a bit

more stable than the approach in Stage 2, because the child is taking into account the reactions not just of one other person, but of many. But it can still lead astray if the group settles on beliefs that adults consider morally wrong, like "Shop lifting for candy bars is fun and desirable."

Eventually, as the child becomes a youth and the social world expands even more, he or she acquires even larger numbers of peers and friends. He or she is therefore more likely to encounter disagreements about ethical issues and beliefs. Resolving the complexities lead to Stage 4, the **ethics of law and order**, in which the young person increasingly frames moral beliefs in terms of what the majority of society believes. Now, an action is morally good if it is legal or at least customarily approved by most people, including people whom the youth does not know personally. This attitude leads to an even more stable set of principles than in the previous stage, though it is still not immune from ethical mistakes. A community or society may agree, for example, that people of a certain race should be treated with deliberate disrespect, or that a factory owner is entitled to dump waste water into a commonly shared lake or river. To develop ethical principles that reliably avoid mistakes like these require further stages of moral development.

Postconventional justice: social contract and universal principles

As a person becomes able to think abstractly (or "formally," in Piaget's sense), ethical beliefs shift from acceptance of what the community *does* believe to the *process* by which community beliefs are formed. The new focus constitutes Stage 5, the **ethics of social contract**. Now an action, belief, or practice is morally good if it has been created through fair, democratic processes that respect the rights of the people affected. Consider, for example, the laws in some areas that require motorcyclists to wear helmets. In what

sense are the laws about this behavior ethical? Was it created by consulting with and gaining the consent of the relevant people? Were cyclists consulted and did they give consent? Or how about doctors or the cyclists' families? Reasonable, thoughtful individuals disagree about how thoroughly and fairly these *consultation* processes should be. In focusing on the processes by which the law was created, however, individuals are thinking according to Stage 5, the ethics of social contract, regardless of the position they take about wearing helmets. In this sense, beliefs on both sides of a debate about an issue can sometimes be morally sound even if they contradict each other.

Paying attention to due process certainly seems like it should help to avoid mindless conformity to conventional moral beliefs. As an ethical strategy, though, it too can sometimes fail. The problem is that an ethics of social contract places more faith in democratic process than the process sometimes deserves, and does not pay enough attention to the content of what gets decided. In principle (and occasionally in practice), a society could decide democratically to kill off every member of a racial minority, for example, but would deciding this by due process make it ethical? The realization that ethical means can sometimes serve unethical ends leads some individuals toward Stage 6, the **ethics of self-chosen, universal principles**. At this final stage, the morally good action is based on personally held principles that apply both to the person's immediate life as well as to the larger community and society. The universal principles may include a belief in democratic due process (Stage 5 ethics), but also other principles, such as a belief in the dignity of all human life or the sacredness of the natural environment. At Stage 6, the universal principles will guide a person's beliefs even if the principles mean disagreeing occasionally with what is customary (Stage 4) or even with what is legal (Stage 5).

Gilligan's morality of care

As logical as they sound, Kohlberg's stages of moral justice are not sufficient for understanding the development of moral beliefs. To see why, suppose that you have a student who asks for an extension of the deadline for an assignment. The justice orientation of Kohlberg's theory would prompt you to consider issues of whether granting the request is fair. Would the late student be able to put more effort into the assignment than other students? Would the extension place a difficult demand on you, since you would have less time to mark the assignments? These are important considerations related to the rights of students and the teacher. In addition to these, however, are considerations having to do with the responsibilities that you and the requesting student have for each other and for others. Does the student have a valid personal reason (illness, death in the family, etc.) for the assignment being late? Will the assignment lose its educational value if the student has to turn it in prematurely? These latter questions have less to do with fairness and rights, and more to do with taking care of and responsibility for students. They require a framework different from Kohlberg's to be understood fully.

One such framework has been developed by Carol Gilligan, whose ideas center on a **morality of care**, or system of beliefs about human responsibilities, care, and consideration for others. Gilligan proposed three moral positions that represent different extents or breadth of ethical care. Unlike Kohlberg, Piaget, or Erikson, she does not claim that the positions form a strictly developmental sequence, but only that they can be ranked hierarchically according to their depth or subtlety. In this respect her theory is "semi-developmental" in a way similar to Maslow's theory of motivation (Brown & Gilligan, 1992; Taylor, Gilligan, & Sullivan, 1995). Table 2 summarizes the three moral positions from Gilligan's theory

Table 2: Positions of moral development according to Gilligan	
Moral position	**Definition of what is morally good**
Position 1: Survival orientation	Action that considers one's personal needs only
Position 2: Conventional care	Action that considers others' needs or preferences, but not one's own
Position 3: Integrated care	Action that attempts to coordinate one's own personal needs with those of others

Position 1: caring as survival

The most basic kind of caring is a **survival orientation**, in which a person is concerned primarily with his or her own welfare. If a teenage girl with this ethical position is wondering whether to get an abortion, for example, she will be concerned entirely with the effects of the abortion on herself. The morally good choice will be whatever creates the least stress for herself and that disrupts her own life the least. Responsibilities to others (the baby, the father, or her family) play little or no part in her thinking.

As a moral position, a survival orientation is obviously not satisfactory for classrooms on a widespread scale. If every student only looked out for himself or herself, classroom life might become rather unpleasant! Nonetheless, there are situations in which focusing primarily on yourself is both a sign of good mental health and relevant to teachers. For a child who has been bullied at school or sexually abused at home, for example, it is both healthy and morally desirable to speak out about how bullying or abuse has affected the victim. Doing so means essentially looking out for the victim's own needs at the expense of others' needs, including the bully's or abuser's. Speaking out, in this case, requires a survival orientation and is healthy because the child is taking caring of herself.

Position 2: conventional caring

A more subtle moral position is **caring for others**, in which a person is concerned about others' happiness and welfare, and about reconciling or integrating others' needs where they conflict with each other. In considering an abortion, for example, the teenager at this position would think primarily about what other people prefer. Do the father, her parents, and/or her doctor want her to keep the child? The morally good choice becomes whatever will please others the best. This position is more demanding than Position 1, ethically and intellectually, because it requires coordinating several persons' needs and values. But it is often morally insufficient because it ignores one crucial person: the self.

In classrooms, students who operate from Position 2 can be very desirable in some ways; they can be eager to please, considerate, and good at fitting in and at working cooperatively with others. Because these qualities are usually welcome in a busy classroom, teachers can be tempted to reward students for developing and using them. The problem with rewarding Position 2 ethics, however, is that doing so neglects the student's development—his or her own academic and personal goals or values. Sooner or later, personal goals, values, and identity need attention and care, and educators have a responsibility for assisting students to discover and clarify them.

Position 3: integrated caring

The most developed form of moral caring in Gilligan's model is **integrated caring**, the coordination of personal needs and values with those of others. Now the morally good choice takes account of everyone *including* yourself, not everyone *except* yourself. In considering an abortion, a woman at Position 3 would think not

only about the consequences for the father, the unborn child, and her family, but also about the consequences for herself. How would bearing a child affect her own needs, values, and plans? This perspective leads to moral beliefs that are more comprehensive, but ironically are also more prone to dilemmas because the widest possible range of individuals are being considered.

In classrooms, integrated caring is most likely to surface whenever teachers give students wide, sustained freedom to make choices. If students have little flexibility about their actions, there is little room for considering *anyone's* needs or values, whether their own or others'. If the teacher says simply: "Do the homework on page 50 and turn it in tomorrow morning," then the main issue becomes compliance, not moral choice. But suppose instead that she says something like this: "Over the next two months, figure out an inquiry project about the use of water resources in our town. Organize it any way you want—talk to people, read widely about it, and share it with the class in a way that all of us, including yourself, will find meaningful." An assignment like this poses moral challenges that are not only educational, but also moral, since it requires students to make value judgments. Why? For one thing, students must decide what aspect of the topic really matters to them. Such a decision is partly a matter of personal values. For another thing, students have to consider how to make the topic meaningful or important to *others* in the class. Third, because the time line for completion is relatively far in the future, students may have to weigh personal priorities (like spending time with friends or family) against educational priorities (working on the assignment a bit more on the weekend). As you might suspect, some students might have trouble making good choices when given this sort of freedom—and their teachers might therefore be cautious about giving such an assignment. But the difficulties in making choices are part of Gilligan's point: integrated caring is indeed more demanding than the caring based only on survival or on consideration of others. Not all students may be ready for it.

Character development: Integrating ethical understanding, care, and action

The theories described so far all offer frameworks for understanding how children grow into youth and adults. Those by Maslow, Kohlberg, and Gilligan are more specific than the one by Erikson in that they focus on the development of understanding about ethics. From a teacher's point of view, though, the theories are all limited in two ways. One problem is that they focus primarily on cognition—on what children *think* about ethical issues—more than on emotions and actions. The other is that they say little about how to encourage ethical development. Encouragement is part of teachers' jobs, and doing it well requires understanding not only what students know about ethics, but also how they feel about it and what ethical actions they are actually prepared to take.

Many educators have recognized these educational needs, and a number of them have therefore developed practical programs that integrate ethical understanding, care, and action. As a group the programs are often called **character education**, though individual programs have a variety of specific names (for example, *moral dilemma education*, *integrative ethical education*, *social competence education*, and many more). Details of the programs vary, but they all combine a focus on ethical knowledge with attention to ethical feelings and actions (Elkind & Sweet, 2004; Berkowitz & Bier, 2006; Narvaez, 2010). Character education programs goes well beyond just teaching students to obey ethical rules, such as "Always tell the whole truth" or "Always do what the teacher tells you to do." Such rules require very little thinking on the part of the student, and there are usually occasions in which a rule that is supposedly universal needs to be modified, "bent," or even disobeyed. (For example, if telling the whole truth might hurt someone's feelings, it might sometimes be more considerate—and thus more ethical—to soften the truth a bit, or even to say nothing at all.)

Instead, character education is about inviting students to think

about the broad questions of his or her life, such as "What kind of person should I be?" or "How should I live my life?" Thoughtful answers to such broad questions help to answer a host of more specific questions that have ethical implications, such as "Should I listen to the teacher right now, even if she is a bit boring, or just tune out?" or "Should I offer to help my friend with the homework she is struggling with, or hold back so that learns to do it herself?" Most of the time, there is not enough time to reason about questions like these deliberately or consciously. Responses have to become intuitive, automatic, and *embodied*—meaning that they have to be based in fairly immediate emotional responses (Narvaez, 2009). The goal of character education is to develop students' capacities to respond to daily ethical choices not only consciously and cognitively, but also intuitively and emotionally. To the extent that this goal is met, students can indeed live a good, ethically responsible life.

Schoolwide programs of character education

In the most comprehensive approaches to character education, an entire school commits itself to developing students' ethical character, despite the immense diversity among students (Minow, Schweder, & Markus, 2008). All members of the staff—not just teachers and administrators, but also custodians, and educational assistants—focus on developing positive relationships with students. The underlying theme that develops is one of cooperation and mutual care, not competition. Fairness, respect and honesty pervade class and school activities; discipline, for example, focuses on solving conflicts between students and between students and teachers, rather than on rewarding obediance or punishing wrong-doers. The approach requires significant reliance on democratic meetings and discussions, both in classrooms and wherever else groups work together in school.

Classroom programs of character education

Even if a teacher is teaching character education simply within her own classroom, there are many strategies available. The goal in this case is to establish the classroom as a place where everyone feels included, and where everyone treats everyone else with civility and respect. Conflicts and disagreements may still occur, but in a caring community they can be resolved without undue anger or hostility. Here are a few ways to work toward this sort of classroom:

- Use class meetings to decide on as many important matters as possible—such as the expected rules of behavior, important classroom activities, or ongoing disagreements.
- Try arranging for students to collaborate on significant projects and tasks.
- Arrange a "Buddies" program in which students of different grade levels work together on a significant task. Older students can sometimes assist younger students by reading to them, by listening to them read, or both. If an older student is having trouble with reading himself or herself, furthermore, a reading buddies program can sometimes also be helpful to the older student.
- Familiarize students with conflict resolution strategies, and practice using them when needed.
- Many areas of curriculum lend themselves to discussions about ethical issues. Obvious examples are certain novels, short stories, and historical events. But ethical issues lurk elsewhere as well. Teaching nutrition, for example, can raise issues about the humane treatment of animals that will be slaughtered for food, and about the ethical acceptability of using large amount of grains to feed animals even though many people in the world do not have enough to eat.
- Service learning projects can be very helpful in highlighting issues of social justice. Planning, working at and reflecting

about a local soup kitchen, tutoring students from low-income families, performing simple repairs on homes in need: projects like these broaden knowledge of society and of the needs of its citizens.

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16. Socioemotional Development in Childhood

Childhood is a time of rapid emotional and social development, as children learn to regulate emotions and interact with others.

LEARNING OBJECTIVE

- Review the milestones of socioemotional development in childhood

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KEY POINTS

  - Emotional development is essentially the way emotions change or remain constant across the human lifespan. Social development is the way in which humans learn to interact with one another.
  - Emotional self-regulation refers to a child's ability to change his or her emotional state to either match that of others (social), or make the child more comfortable in a particular situation (social and personal).
  - The ability to empathize, or identify with the feelings of another person, helps aid in the development of prosocial (socially positive) and altruistic (helpful, beneficent, or unselfish) behavior.
  - Play is one way in which children develop relationships with others. Several types of play exist, and each type

builds upon the last in a three-step process.
  - Intersubjectivity refers to the psychological relation between people; in child development, it refers to the very rapid cultural development of newborn infants.
  - Between 3 and 5 years old, children come to understand that people have thoughts, feelings, and beliefs that are different from their own; this is known as theory of mind.

TERMS

- intersubjectivityThe state or condition of involving or occurring between separate conscious minds; a term used to represent the psychological relation between people.
- temperamentA person's normal manner of thinking, behaving, or reacting.
- empathyThe capacity to understand another person's point of view, or the result of such understanding.

Emotional development is essentially the way emotions change or remain constant across the human lifespan. Social development is the way in which humans learn to interact with one another. Together, the development of both of these factors reflects the changes in a child's emotions and relationships with others that occur throughout childhood.

Emotional Self-Regulation

During a child's life, he or she goes from looking at emotions from an external point of view to an internal point of view. As children develop advanced language skills, they develop the ability to

regulate emotions. Emotional self-regulation refers to children's ability to monitor, evaluate, and modify their emotional reactions in any given situation. It is a skill that develops over time, and involves both responding to situations with emotions that are socially acceptable and developing the ability to withhold emotions or delay spontaneous reactions when necessary. A child's temperament has a large impact on emotional self-regulation: children who are more negatively focused tend to have a more difficult time with regulation than those who are focused on the positive aspects of life.

Empathy

The development of empathy is a crucial part of emotional and social development in childhood. The ability to identify with the feelings of another person helps in the development of prosocial (socially positive) and altruistic (helpful, beneficent, or unselfish) behavior. Altruistic behavior occurs when a person does something in order to benefit another person without expecting anything in return. Empathy helps a child develop positive peer relationships; it is affected by a child's temperament, as well as by parenting style. Children raised in loving homes with affectionate parents are more likely to develop a sense of empathy and altruism, whereas those raised in harsh or neglectful homes tend to be more aggressive and less kind to others.

Developing Relationships

Play is one way in which children develop relationships with others. Several types of play exist, and each type builds upon the last in a three-step process. *Non-social* or *solitary* play occurs in the beginning of childhood, when children spend most time alone with

preferred playthings. It then shifts to *parallel play*, when children begin to take an interest in other children but prefer to play alone and side-by-side. Children engaged in parallel play will sit next to one another during a play session, but each will engage in his or her own activity. Finally, there is *associative and cooperative play* in which children begin to engage with one another, exchanging and sharing toys and creating games together.

Play and childhood relationships: Associative and cooperative play occurs when children learn to engage with one another, exchanging and sharing toys and creating games together.

Intersubjectivity

Intersubjectivity refers to the psychological relation between people; in child development, it refers to the very rapid cultural development of newborn infants. Research suggests that as babies, humans are biologically wired to coordinate their actions with others; this ability to sync with others facilitates cognitive and emotional learning through social interaction. Additionally, the most socially productive relationship between children and adults is bidirectional, where both parties actively define a shared culture. Emphasis is placed on the idea that children are actively involved in how they learn, using intersubjectivity.

Theory of Mind

Between 3 and 5 years old, children come to understand that people have thoughts, feelings, and beliefs that are different from their own. This is known as theory of mind. Children can use this skill to tease others, persuade their parents to purchase a candy bar for them, or understand why a sibling might be angry. When children develop theory of mind, they can recognize that others may have false beliefs (Dennett, 1987; Callaghan et al., 2005).

17. Small children, big cities

https://bernardvanleer.org/publications-reports/small-children-big-cities/

PART V

MODULE 3: RESEARCH STRATEGIES

18. Creating APA References Entries

A YouTube element has been excluded from this version of the text. You can view it online here: https://library.achievingthedream.org/hostoschilddevelopmenteducation/?p=38

Following is a list of sample citations for commonly used sources. Consult the current edition of the *Publication Manual of the American Psychological Association* (6th ed.) for a complete list of guidelines for formatting entries on the references page.

Print Examples

Single-Authored Book

Hoppensteadt, F. C. (1997). *An introduction to the mathematics of neurons: Modeling in the frequency domain.* New York, NY: Cambridge University Press.

Book with Multiple Authors

Two or more authors

Pandi-Perumal, S. R., Cardinali, D. P., & Chrousos, G. (2007).*Neuroimmunology of sleep*. New York, NY: Springer.

Seven or more authors

Krauss, H., Weber, A., Appel, M., Enders, B., Isenberg, H. D., Schiefer, H. G., . . . Zahner, H. (2003). *Zoonoses: Infectious diseases transmissible from animals to humans.* Washington, DC: ASM Press.

Book by an Association or Organization

American Psychological Association. (2010). *Publication manual of the American Psychological Association* (6th ed.). Washington, DC: Author.

Article or Chapter in an Edited Collection

Riding, R. (2001). The nature and effects of cognitive style. In Sternberg, R. J., & Zhang, L.-F. (Eds.), *Perspectives on thinking, learning, and cognitive styles* (pp. 47-72). Mahwah, NJ: Lawrence Erlbaum.

Collected Content in an Edited Book

Single editor

Gray, W. D. (Ed.). (2007). Integrated models of cognition systems. New York, NY: Oxford University Press.

Multiple editors

Reynolds, W. M., & Johnston, H. F. (Eds.). (1994). *Handbook of depression in children and adolescents*. New York, NY: Plenum Press.

Article in Print Periodical

With DOI

Marsh, J. K., & Ahn, W. (2012). Memory for patient information as a function of experience in mental health.*Journal of Applied Cognitive Psychology*, 26(3), 462-474. doi:10.1002/acp.2832

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Murphy, V. M. (1960). Anxiety: Common ground for psychology and sociology. *The American Catholic Sociological Review*, *21*(3), 213-220.

Electronic Examples

Book in Electronic Form

Levitin, D. J. (2002). *Foundations of cognitive psychology: Core readings*. Retrieved from http://ehis.ebscohost.com

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With DOI

Oruç, I., Krigolson, O., Dalrymple, K., Nagamatsu, L. S., Handy, T. C., & Barton, J. S. (2011). Bootstrap analysis of the single subject with event related potentials. *Journal of Cognitive Neuropsychology*, 28(5), 322-337. doi:10.1080/02643294.2011.648176

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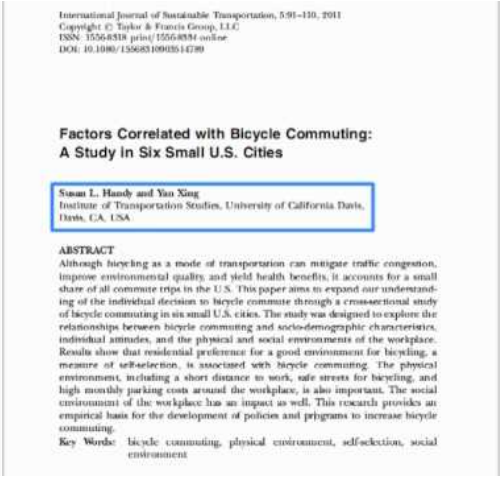

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Factors Correlated with Bicycle Commuting: A Study in Six Small U.S. Cities

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ABSTRACT
Although bicycling as a mode of transportation can mitigate traffic congestion, improve environmental quality, and yield health benefits, it accounts for a small share of all commute trips in the U.S. This paper aims to expand our understanding of the individual decision to bicycle commute through a cross-sectional study of bicycle commuting in six small U.S. cities. The study was designed to explore the relationships between bicycle commuting and socio-demographic characteristics, individual attitudes, and the physical and social environments of the workplace. Results show that residential preference for a good environment for bicycling, a measure of self-selection, is associated with bicycle commuting. The physical environment, including a short distance to work, safe streets for bicycling, and high monthly parking costs around the workplace, is also important. The social environment of the workplace has an impact as well. This research provides an empirical basis for the development of policies and programs to increase bicycle commuting.
Key Words: bicycle commuting, physical environment, self-selection, social environment

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20. Appendix C: The Reflective Practitioner

> The experience in reflective teaching is that you must plunge into the doing, and try to educate yourself before you know what it is you're trying to learn.
>
> —Donald Schön, 1987

Donald Schön, a philosopher and educational researcher, makes an important observation: learning to teach often means making choices and taking actions without knowing in advance quite what you need to learn or what the consequences will be. The problem, as we have pointed out more than once, is that classroom events are often ambiguous and ambivalent, in that they usually serve more than one purpose. A teacher compliments a student's contribution to a discussion: at that moment she may be motivating the student, but also focusing classmates' thinking on key ideas. Her comment functions simultaneously as behavioral reinforcement, information, and expression of caring. At that moment complimenting the student may be exactly the right thing to do. Or not: perhaps the praise causes the teacher to neglect the contributions of others, or focuses attention on factors that students cannot control, like their ability instead of their effort. In teaching, it seems, everything cuts more than one way, signifies more than one thing. The complications can make it difficult to prepare for teaching in advance, though they also make teaching itself interesting and challenging.

The complications also mean that teachers need to learn from their own teaching by reflecting (or thinking about the significance of) their experiences. In the classrooms, students are not the only people who need to learn. So do teachers, though what teachers need to learn is less about curriculum and more about students'

behavior and motivation, about how to assess their learning well, and about how to shape the class into a mutually supportive community.

Thinking about these matters begins to make a teacher a reflective practitioner (Schön, 1983), a professional who learns both *from* experience and *about* experience. Becoming thoughtful helps you in all the areas discussed in this text: it helps in understanding better how students' learning occurs, what motivates students, how you might differentiate your instruction more fully, and how you can make assessments of learning more valid and fair.

Learning to reflect on practice is so important, in fact, that we have referred to and illustrated its value throughout this book. In addition we devote this entire appendix to how you, like other professional teachers, can develop habits of reflective practice in yourself. First, we describe what reflective practice feels like as an experience, and offer examples of places, people, and activities that can support your own reflection on practice. Then we discuss how teachers can also learn simply by observing and reflecting on their own teaching systematically, and by sharing the results with other teachers and professionals. This is an activity we mentioned in this book previously; we call it *teacher research* or *action research*. As you will see, reflective practice not only contributes to teachers' ability to make wise decisions, but also allows them to serve as effective, principled advocates on behalf of students.

Resources for professional development and learning

At some level reflection on practice is something you must do for yourself, since only you have had your particular teaching experiences, and only you can choose how to interpret and make use of them. But this rather individual activity also benefits from the stimulus and challenge offered by fellow professionals. Others'

ideas may differ from your own, and they can therefore help in working out your own thoughts and in alerting you to ideas that you may otherwise take for granted. These benefits of reflection can happen in any number of ways, but most fall into one of four general categories:

- talking and collaborating with colleagues
- participating in professional associations
- attending professional development workshops and conferences
- reading professional literature

In the next sections we explore what each of these activities has to offer.

Colleagues as a resource

Perhaps the simplest way to stimulate reflections about your own teaching is to engage fellow teachers or other colleagues in dialogue (or thoughtful conversation) about teaching and learning: What do you think of this kind of experience? Have you ever had one like it yourself, and what did you make of it? Note that to be helpful in stimulating reflection, these conversations need to be largely about educational matters, not about personal ones ("What movie did you see last night?"). Dialogues with individual colleagues have certain advantages to more complex or formal professional experiences. Talking with an individual generally allows more participation for both of you, since only two people may need to express their views. It also can provide a measure of safety or confidentiality if your conversation partner is a trusted colleague; sometimes, therefore, you can share ideas of which you are not sure, or that may be controversial.

A somewhat more complex way of stimulating reflection is group

study. Several teachers at a school gather regularly to bring themselves up to date on a new curriculum, for example, or to plan activities or policies related to a school-wide theme (e.g. "the environment"). Group meetings often result in considerable dialog among the members about the best ways to teach and to manage classrooms, as well as stories about students' behavior and learning experiences. For a beginning teacher, group study can be a particularly good way to learn from experienced, veteran teachers.

Sharing of ideas becomes even more intense if teachers collaborate with each other about their work on an extended basis. Collaboration can take many forms; in one form it might be "team teaching" by two or more teachers working with one group of students, and in another form it might be two or more teachers consulting regularly to coordinate the content of their courses. Collaborations work best when each member of the team brings responsibilities and expertise that are unique, but also related to the other members' responsibilities. Imagine, for example, a collaboration between Sharon, who is a middle-years classroom teacher, and Pat, who is a resource teacher—one whose job is to assist classroom teachers in working with students with educational disabilities or special needs. If Pat spends time in Sharon's classroom, then not only will the students benefit, but they both may learn from each other's presence. Potentially, Pat can learn the details of the middle-years curriculum and learn more about the full range of students' skills—not just those of students having difficulties. Sharon can get ideas about how to help individuals who, in a classroom context, seem especially difficult to help. Achieving these benefits, of course, comes at a cost: the two teachers may need to take time not only for the students, but also to talk with each other. Sometimes the time-cost can be reduced somewhat if their school administrators can arrange for a bit of extra planning and sharing time. But even if this does not happen, the benefits of collaboration will be very real, and often make the investment of time worthwhile.

Professional associations and professional development activities

Another way to stimulate reflection about teaching is by joining and participating in professional associations— organizations focused on supporting the work of teachers and on upholding high standards of teaching practice. Exhibit 1 lists several major professional associations related to education and their Internet addresses. Most of them are composed of local branches or chapters serving the needs of a particular city, state, or region.

Exhibit 1: A selection of professional associations related to education

- American Association for the Mentally Retarded (AAMR)
- Association for Health, Physical Education, Recreation, & Dance (AAHPERD)
- Association for Experiential Education (AEE)
- Association for Retarded Citizens (ARC)
- ENC Online Resources for Math and Science Education
- National Association for Bilingual Education (NABE)
- National Association for the Education of Young Children (NAEYC)
- National Council for Teachers of Mathematics (NCTM)
- National Council for the Social Studies (NCSS)
- National Council for Teachers of English (NCTE)
- National Science Teachers Association

- Organization of American Historians (OAH)

To achieve their purposes, a professional association provides a mixture of publications, meetings, and conferences intended for the professional development of educators, including classroom teachers. Typically the publications include either a relatively frequent newsletter or a less frequent journal focused on issues of practice or research. Very large associations often publish more than one newsletter or journal, each of which is focused on a particular topic or type of news (for example, the National Education Association in the United States publishes eight separate periodicals). Some also publish online journals (there are several listed as part of Exhibit 2 or online versions of print journals. Whatever format they take, professionally sponsored publications stimulate thinking by discussing issues and dilemmas faced by professional educators, and sometimes also by presenting recent educational research and the recommendations for teaching that flow from that research. We discuss ways of using these publications further in the next section of this chapter

Exhibit 2: A sampling of journals related to professional education

- CSS Journal: Computers in the Social Studies—dedicated to the encouragement of the use of computers and related technology in K-12 social studies classrooms.
- Education Policy and Evaluation—published by the

College of Education at Arizona State University

- Educational Theory—publishes work in the philosophy of education and other disciplines.
- Harvard Educational Review—quarterly journal that provides an inter-disciplinary forum for innovative thinking and research in education.
- Journal of Computing in Higher Education—publishes articles that contribute to our understanding of the issues, problems, and research associated with instructional technology
- Revista Iberoamericana de Educacion—Revista de la OEI.
- Scholarly Electronic Journals—Trends and Attitudes: A Research Proposal

Meetings and conferences sponsored by a professional association also take a variety of forms. Depending on the size of the association and on the importance of the topic, a meeting could be as short as a one half-day workshop or as long as a full week with many sessions occurring simultaneously. Sometimes, too, an association might sponsor a more extended course—a series of meetings focused on one topic or problem of concern to teachers, such as classroom management or curriculum planning. In some cases, the course might carry university credit, though not always.

As you might expect, the size of a professional association makes a difference in kinds of professional development experiences it can provide. In general, the smaller the association, the more exclusively it focuses on local news and educational needs, both in its publications and in its meetings or other activities. At a professional development workshop sponsored by a local teachers' association, for example, you are relatively likely to see colleagues and acquaintances not only from your own school, but from other

neighboring schools. Locally sponsored events are also more likely to focus on local issues, such as implementing a new system for assessing students' learning within the local schools. In general, too, local events tend to cost less to attend, in both time and money.

By the same token, the larger the association, the more its professional development opportunities are likely to focus on large-scale trends in education, such as the impact of the *No Child Left Behind* legislation we discussed in Chapter 1 or the latest trends in using computer technology for teaching. Conferences or other professional development events are more likely to span several days and to be located outside the immediate town or region whether you live and work. You may therefore see fewer of your everyday colleagues and acquaintances, but you may also have a greater incentive to make new acquaintances whose interests or concerns are similar to your own. The event is more likely to feature educators who are well-known nationally or internationally, and to call attention to educational trends or issues that are new or unfamiliar.

Whether large or small, the activities of professional associations can stimulate thinking and reflecting about teaching. By meeting and talking with others at a meeting of an association, teachers learn new ideas for teaching, become aware of emerging trends and issues about education, and confront assumptions that they may have made about their own practices with students. Professional meetings, conferences, and workshops can provide these benefits because they draw on the expertise and experience of a wide range of professionals—usually wider than is possible within a single school building. But compared simply to talking with your immediate colleagues, they have a distinct disadvantage: they take effort and a bit of money to attend, and sometimes they are available at convenient times. Well-balanced professional development should therefore also include activities that are available frequently, but that also draw on a wide range of expertise. Fortunately, an activity with these features is often easily at hand: the reading of professional publications about educational research and practice.

Reading and understanding professional articles

Although publications about educational issues and research can take many forms, they tend to serve three major purposes in some sort of combination. A publication could either (1) provide a framework for understanding teaching and learning, (2) offer advice about how to teach, or (3) advocate particular ideas or practices about education. Benefiting from a professional publication depends partly on understanding which of these purposes a particular article or book is emphasizing.

Three purposes of educational publications

Consider the first purpose, to provide a framework for understanding teaching and learning (Hittleman and Simon, 2005). A "framework" in this context means a perspective or general viewpoint for understanding specific events and actions. They are much like the theories described earlier in this book, though not always as formal or broad. A published article might propose, for example, a way of understanding why certain students are disrespectful in spite of teachers' efforts to prevent such behavior (perhaps they are reinforced by peers for being disrespectful). It might offer evidence supporting this perspective. In doing so, the author provides a sort of "theory of disrespectful behavior," though he or she may not call it a theory explicitly.

A second purpose is to offer advice about appropriate teaching practices. An article intended for this purpose, for example, might suggest how to introduce reading instruction to first graders, or how to use fiction to teach high school history, or how to organize a class to include a student with a disability. Often giving such advice overlaps with the first purpose, providing a framework for

understanding, since thinking about an educational issue in a particular way may imply certain ways of dealing with it in practice.

A third purpose of a published article is to advocate ideas and persuade others to take actions benefiting students and society. It might take a position about important issues in education: Is it a good idea or not to retain (or hold back) a student in grade level for another year if the student fails the curriculum the first time? Should schools teach about sexuality? Should girls learn science in classrooms separate from boys? In advocating for ideas or policies about such matters, the article may express concern about what is good, ethical or desirable in education, not just about what is factually true or practical. The author may seek explicitly to persuade readers of the author's point of view. These features do not mean, however, that you need to give up thinking for yourself. On the contrary, when reading an advocacy-oriented article, reflection may be especially important.

Whatever its purpose—understanding, advice, or advocacy—an article or book about a professional issue can stimulate thinking about what you know and believe about teaching and learning. It should therefore create, rather than undermine, your individuality as a teacher. Think of professional reading as a dialogue or conversation about education: some of the comments in the conversation will probably be more helpful than others, but each participant contributes somehow, even if none can give a final answer or everlasting truth. It is the same with publications; some may be more helpful than others, but none will be so perfect that you can afford to cease further reading or further thinking. If you are about to begin a teaching career, for example, you may be especially interested in anything published about classroom management, but less interested in the problems of administering schools or in the political issues that usually accompany educational systems. Yet some publications may discuss these latter issues anyway, and eventually you may find yourself more concerned about them than at the start of a career. Your job, as a reflective

teacher, will be sort out the currently useful articles (or parts of articles) from ones you cannot use immediately.

To experience educational publications in this way, however, you must think of the authors as your collaborators as well as general authorities. As a reader, you need to assume that you are entitled to consider an author's ideas, but not obligated to accept it without journals related to professional education question. There are several strategies for developing this attitude, but to keep the discussion focused, we will look at just two. We have already discussed the first strategy, which is to understand the purposes of any particular piece of research which you encounter, in order to assess its current usefulness to your daily work and your long-term professional goals. We have already indicated several general purposes of educational research publications, but we will go into more detail about this in the next section. The second strategy for relating to authors as collaborators is to think about how you yourself might contribute to professional knowledge by engaging in research of your own, even as a classroom teacher—an activity often called action research (Mills, 2006; Stringer, 2007). At the end of this chapter we discuss what action research involves, and how you might consider using it.

Authors' assumptions about readers

Authors of professional articles and books also make assumptions about their readers, and it helps to be aware of these while you read. The assumptions affect the style, content, and significance of the author's ideas in ways that are both obvious and subtle.

One assumption is about the response which an author expects from you, the reader: does he or she expect you actually to do something new, or simply to consider doing something new? Or does the author just want you to be aware of a new idea? Consider, for example, an article reviewing best practices about inclusion of

students with special needs. The author may imply, or even urge you to take a moral position: you should include these students, the author may seem to say. But in a different article—one recommending particular teaching practices—the author may merely ask you to think about alternatives to your normal ways of teaching. Certain strategies worked under certain teaching conditions, the author says, so simply consider whether they might work for you as well.

A second, less obvious difference among professional publications is in their un-stated assumptions about prior experiences and attitudes of readers. This assumption may be either helpful or frustrating, depending on you actual prior background. A piece intended as a "framework for understanding" may assume, for example, that you are familiar with basic theories of learning already. If you have read and understood what we outlined in Chapter 2 of this book, the article may turn out to be relatively accessible or understandable to you even if you have relatively little experience in actual classroom teaching, and even if you have never studied learning theories in detail. The article might seem more accessible than you expect because, for example, it focuses primarily on how teacher's praise affects students' learning, an idea with which you may be somewhat familiar already.

On the other hand, a professional publication may assume that you have taught school for a number of years already, or that you are at least familiar with classroom life from the point of view not of students, but of a teacher. An author writing about "withitness" (discussed in Chapter 7), for example, may make this assumption, since the concept originated by observing teachers managing large group classroom activities. If you yourself are experienced at actual teaching, reading about withitness may trigger a lot of questions about just how withit teachers are able to be in practice, and about whether in fact they always need to be withit. You can also ask yourself these questions even if you have not yet been a teacher yourself, of course, but they may seem less immediate or urgent.

A professional article intended to advocate for a particular

educational policy or practice may make very different assumptions about you as a reader. It may assume, for example, that you do in fact enjoy persuading others of your point of view, even when others initially disagree or react indifferently. This sort of assumption may show up as much in what the writing omits, as in what it includes: if the term cooperative learning activity is used without explanation, for example, the researcher may be assuming not only that you are the sort of person— perhaps a teacher—who knows what that term means already, but also that you already believe in the value of cooperative learning and are motivated to explain its value to others.

In making these distinctions among published articles, keep in mind a point we made at the outset: that an individual article usually serves more than one purpose at a time and makes more than one assumption about your prior knowledge and about how you are supposed to respond to the article. The differences are only about emphasis. To illustrate these ideas about the purposes and effects of research, look in the next section at three examples of actual published articles relevant to education. The studies are not a full cross-section of educational research or publications, but they do suggest some of the variety possible (and necessary) among them. Each example serves a mixture of purposes, but also emphasizes one purpose in particular (perspective-taking, teaching recommendations, or advocacy) described earlier. The authors of each example also make particular assumptions about you, the reader—about the intellectual work which the authors expect you to do and about the motivations which they assume you have or hope that you will acquire. For each example, we describe the reactions of one of us (Kelvin Seifert) as he read the article.

Example #1: How do children acquire moral

commitments?

In 1997, Herbert Saltzstein and several colleagues published a research-oriented article about how children acquire moral beliefs (Saltzstein, et al., 1997). The group of researchers were all graduate students and professors of psychology, working mostly at the City University of New York. When Kelvin read of their affiliation with psychology, he suspected that they would talk about moral beliefs in general, and not necessarily about moral issues in classrooms, such as cheating or treating classmates with care and respect. Still, the article interested Kelvin as a former teacher and current university professor, because he had long been concerned with fostering qualities like integrity, honesty, cooperation, and loyalty in students. If Kelvin could find out about the mechanism or process by which children acquire mature moral beliefs, he reasoned, maybe he could modify his teaching to take advantage of that knowledge.

So Kelvin began reading the article. He discovered some parts were challenging and required careful reflection, whereas others were easier to read. One of the most challenging passages came almost immediately, in the second and third paragraphs; these paragraphs, it seemed, required a bit of prior knowledge about theories of moral development. But Kelvin was willing to concentrate more fully on these paragraphs, because he expected that they might clarify the rest of the study. Here are the paragraphs, and some of Kelvin's thoughts as he read them:

Initial problem: We began by re-examining the phenomenon of heteronomy, Piaget's assertion (1932/1965) following Kant (1785/1959) that young children equate moral obligation with deference to authority when justifying their moral judgments. The concept is important because it is central to the organismic account of moral development as a series of differentiations and integrations.... [p. 37]	This was one of the difficult paragraphs, perhaps especially because Kelvin had never read the specific book by Piaget or by the philosopher Kant. But Kelvin did recall reading, at various times over the years, about Piaget's views on moral development. Piaget believed that at first, children define morality in terms of what adults think: an action is "good" if and only if adults (e.g. parents) consider it good, and "bad" if and only if adults consider it bad. This is the idea of "heteronomy" to which Saltzstein is referring. Children, in this view, take quite awhile to develop or "grow" into truly autonomous moral beliefs. Autonomous beliefs form slowly out of earlier beliefs, in the way that a young plant or animal might grow. This is the "organismic account of moral development" that Saltzstein is talking about.
...This account has been challenged by Turiel's domain theory (Turiel, 1983). According to Turiel and his colleagues, even young children intuitively distinguish moral from conventional rules. [p. 37]	Here was an idea that was intriguing! Saltzstein and his colleagues were pointing to research (by the person cited, named Turiel) that suggests that even preschoolers know the difference between truly moral rules and merely conventional rules. Apparently they believe, for example, that it would be wrong to steal toys or to hit someone, even if adults gave you permission to do so. But apparently they also know that it would be OK for traffic lights to use different colors—for red to mean "go" and green to mean "stop"—provided that everyone agreed on changing the rule. That is what the researcher named Turiel apparently meant by distinguishing convention from morality.

The introduction continued in this challenging style for about two pages, requiring Kelvin to read slowly and carefully in order to understand its points. Kelvin was not discouraged from continuing,

though, because he wanted to find out more about how, in general, children acquire moral beliefs. Did moral beliefs take time to develop—did they "grow" on children slowly after initially being borrowed from parents or other adults? In this case, then maybe Kelvin owed it to his students to adopt and express desirable moral attitudes myself, so as to provide a good model for their developing beliefs. Or were students' key moral beliefs already in place when they entered school—almost as if "hard wired" in their minds, or at least already learned during infancy and the preschool years? In this second case, it might still be desirable for Kelvin to adopt positive moral attitudes, but not for the purpose of modeling them for students. Students already "hard wired" for key moral beliefs might not need a model so much as an enforcer of desirable moral behaviors. Concerning the issue of cheating, for example, the students might already understand the undesirable nature and implications of this behavior. As a result they might not need demonstrations of honest integrity from their teacher as much as affirmations from the teacher of the importance of honesty and integrity, along with consistent enforcement of appropriate sanctions against cheating when it did occur.

For Kelvin, therefore, the outcomes of research on moral development—including Saltzstein's that he was currently reading—posed issues of classroom management, both in university classrooms and in public school classrooms. So Kelvin read on. Saltzstein proposed resolving the issues about the origins of moral development by distinguishing between moral conflicts and moral dilemmas:

Moral conflicts are conflicts between moral duty or right and a non-moral desire. An example might be the conflict between whether to return a wallet to its rightful owner or keep the coveted wallet with its extra cash. In contrast, moral dilemmas are conflicts involving two moral rights or duties. For example, [a person might feel a dilemma between] whether to steal a drug to save a spouse's life. [p. 38]	The distinction between conflicts and dilemmas looked promising to Kelvin. Moral conflicts looked fairly simple in cognitive terms, even if they were sometimes difficult emotionally. The "right" action was obvious. Moral dilemmas were more complex cognitively as well as emotionally, because two "goods" were being weighed against each other. The moral alternatives might both be right and wrong at the same time, and their relative "rightness" might not be immediately obvious.

Saltzstein and his colleagues proposed that when young children show awareness of moral rules, they may be doing so in the simpler context of moral conflicts. A young child might believe that you should return a dollar to its owner, even if the child has trouble in practice overcoming a selfish impulse to keep the dollar. The same child might have trouble deciding, however, whether it is "right" to inform his teacher if a best friend has cheated on a test. In that case two moral principles compete for attention—honesty and loyalty to a friend. To sort out the implications of choosing between these principles, a young child might need to rely on older, wiser minds, such as parents or other adults. The minute that he or she does so, the child is showing the moral heteronomy that Piaget used to write about and that Saltzstein referred to early in the article

Understanding these ideas took effort, but once Kelvin began figuring them out, the rest of the article was easier to follow. In reading the remaining pages, he noted in passing that the researchers used several techniques common in educational research. For example, they interviewed participants, a common way of gathering systematic information about individuals' thinking. They also imposed controls on their procedures and on the selection of participants. Procedures were controlled, for example, by posing the same three moral dilemmas and to all participants, so that individuals' responses could be compared meaningfully. The selection of participants was controlled by selecting two age groups

for deliberate comparison with each other—one that was seven years old and the other that was eleven. Since the researchers wanted to generalize about moral development as much as possible, but they obviously could not interview every child in the world, they sampled participants: they selected a manageable number (sixty-five, to be exact) from the larger student population of one particular school. In a second part of the investigation, they also selected a comparable number of children of the same two ages (7 and 11) from the city of Recife, located in Brazil. The Brazilian group's responses were compared deliberately with the American group's responses, in order to allow for the impact of cultural beliefs on moral development in general. Kelvin recognized this research strategy as an example of using control groups. In research terms, the Brazilian group "controlled for" the impact of American culture on children's moral beliefs, and vice versa, the American group controlled for the impact of Brazilian culture on children's moral beliefs. Altogether, these techniques helped insure that the interviews of children's moral beliefs really illustrated what they were supposed to illustrate—that they were reliable and valid, in the senses that we discussed in earlier chapters. As Kelvin noticed Saltzstein's attention to good research techniques, he gained confidence in Saltzstein's observations and in the interpretations that the authors made from them.

What did Saltzstein and his colleagues find out—or more to the point, what did Kelvin Seifert learn from what Saltzstein and his colleagues wrote about? There were three ideas that occurred to Kelvin. One was that in everyday life, children probably deal with moral beliefs of all levels of cognitive complexity, and not just "simple" moral conflicts and "complex" moral dilemmas. Saltzstein found that children's solutions to moral dilemmas depended a lot on the content of the dilemma. Children advocated strongly for truthfulness in some situations (for example, in deciding whether to tell the teacher about a friend's cheating), but not in other situations (like in deciding whether to back up a friend who is being teased and who has lied in an effort to stop the teasing). But it was rare for all

children to support any one moral principle completely; they usually supported a mix

Another idea that Kelvin learned from Saltzstein's research was about how children expressed moral heteronomy versus moral autonomy. Age, it seemed, did not affect the beliefs that children stated; younger and older children took similar positions on all dilemmas initially. But age did affect how steadfastly children held to initial beliefs. Younger children were more easily influenced to switch opinions when an adult "cross-examined" with probing questions; older children were more likely to keep to their initial position. Moral heteronomy was revealed not by a child's views as such, but by the kind of dialogue a child has with adults.

A third idea that Kelvin learned was about children's perceptions of adults' moral beliefs. Saltzstein found that even though older children (the 11-year-olds) showed more moral autonomy (were more steadfast) than younger children, they tended to believe that adults thought about moral issues in ways similar to children who were younger. In the "teasing" dilemma mentioned above, for example, the 11-year-olds opted much more often than 7- year-olds for remaining loyal to a friend, even though doing so meant further untruthfulness with peers. Yet the 11- year-olds also more often stated a belief that adults would resolve the same dilemma in a way characteristic of 7- year-olds—that is, by telling the truth to peers and thus betraying loyalty to a friend. This finding puzzled Kelvin. Why should older, and presumably more insightful, children think that adults are more like younger children than like themselves? Saltzstein suggested an interpretation, however, that helped him make sense of the apparent inconsistency:

...Consistent with our past research, children attributed the kinds of moral choices made by younger children to adults. In our view, this finding tends to support a constructivist rather than a [social modeling] view of morality, which would predict that the child's judgments mirror (or develop toward) their representation of adult judgments. [p. 41]	In other words, thought Kelvin, if children learned moral beliefs by imitating (or modeling themselves after) parents or other adults, then they ought to see themselves as resembling adults more and more as they get older. Instead, they see themselves as resembling adults less, at least during middle childhood. This would happen only if they were preoccupied with "constructing" their own beliefs on the basis of their experiences, and therefore failed to notice that adults might also have constructed beliefs similar to their own.

Relevance: a framework for understanding moral development

The article by Saltzstein offered a way to understand how children develop moral beliefs, and especially to understand the change from moral heteronomy to moral autonomy. By imposing controls on the procedures (uniform interviews) and on the selection of participants (particular ages, particular societies or cultures), the researchers eliminated certain sources of ambiguity or variability in children's responses. By framing their project in terms of previous theories of moral development (Piaget's, Turiel's), furthermore, they made it easier to interpret their new results in the general terms of these theories as well. In these ways the investigation aspired to provide a general perspective about children's moral development. Providing a framework for understanding, you recall, is one of the major purposes of many professional publications.

But note that the authors paid a price for emphasizing this purpose. By organizing their work around existing general theory and research, they had to assume that readers already had some knowledge of that theory and research. This is not an unreasonable assumption if the readers are expected to be fellow researchers; after all, many of them make a living by "knowing the literature" of psychology. But assuming such knowledge can be an obstacle if

the authors intend to communicate with non-psychologists: in that case, either the authors must make more of an effort to explain the relevant background research, or readers must educate themselves about the research. The latter activity is not necessarily difficult (the background knowledge for Saltzstein's work, for example, took me only a few paragraphs to explain in writing), but it must be done to make full sense of research that tries to provide a universal framework of psychological knowledge.

The reader's role: interested observer of children

In conducting and reporting their research, Saltzstein and his colleagues were not presenting themselves as school teachers, nor were they expecting readers necessarily to respond as teachers. As they put it in the first paragraph of the article, they sought to offer "a more contextualized perspective for understanding the development of moral judgments" [p. 37]. Unlike most teachers, they seemed indifferent to recommending how children's moral judgements ought to be fostered. Observation of children was their purpose, not intervention. The meaning of the term "contextualized perspective" was not obvious to Kelvin when he first read it, but eventually it became clearer: they were talking about the importance of distinguishing among types of moral decisions and moral beliefs. They did sometimes note information relevant to teaching—for example, they pointed out that for cultural reasons, teachers in Brazil do not command high respect and therefore compared to American children, Brazilian children may feel less compelled to tell the truth to their teachers. But this comment was not the primary focus of their research, nor did the authors discuss what (if anything) it might imply about teaching in the United States.

Yet the non-teaching perspective of the article did not keep Kelvin, a long-time school teacher and current university teacher, from reflecting on the article in terms of its educational relevance. As we mentioned already, Kelvin was attracted to the article because

of his own concerns about character development in students—how do they acquire moral beliefs and commitments, and how should he help them in doing so? Kelvin did not really expect to find an answer to the second of these questions, given the "observation" orientation of the authors. He did hope to find an answer to the first, although even here he also expected that to make allowances for the fact that research interviews are not usually identical to classroom situations. Children might respond differently when interviewed individually by a researcher, compared to how they might respond to a teacher in class. Or perhaps not. So in reflecting on the article, Kelvin had to note the context and purposes of Saltzstein's study, and to remind himself that once a teacher went beyond simply observing children to intervening on their behalf, the teacher might be led to different conclusions about children's moral development. But in spite of these cautions—or maybe because of them—Kelvin found much food for thought in the article related to teaching.

Example #2: Learning disability as a misleading label

In 2006, Ray McDermott, Shelley Goldman, and Hervé Varenne published an article that discussed the use of disability categories in education. The article attracted Kelvin's attention because he had been concerned for a long time about the ambiguities of disability categories (see Chapter 5 of this book) as well as about their potential for stigmatizing individuals. He expected the article to document additional problems with labeling when a student is from a non-white ethnic group. Kelvin's expectation was fulfilled partially, but he was surprised also

to encounter an additional and tougher message in the article. Here is how the study began:

Since about 1850 . . . classifying human beings by mental ability, accurately or not, has been a politically rewarded activity. Those with power have placed others, usually the downtrodden, into ability and disposition groups that they cannot escape. . . . People who live together in a culture must struggle constantly with the constraints…of systems of classification and interpretation used in the culture.	Kelvin had a mixed reaction to this opening. In one way it seemed to say something familiar—that classification systems (such as categories for disabilities) may create problems for individuals. But the tone of the paragraph sounded more severely critical than Kelvin had expected: it was saying that power governed all classifications, implying that misclassifications may be widespread or even universal.

Kelvin's initial hunch was therefore that the article would express a radically critical view of disability classifications—particularly as they affect the "downtrodden," which presumably included children from minority ethnic groups. His expectation proved correct as the authors explained their point of view, which they called a *cultural approach* to understanding disability. Using learning disabilities (LD) as an example, here is how they explained their position:

We are not as interested in LD behavior as in the preoccupations—as seen from the level of classroom organization—of all those adults who are professionally poised to discover LD behavior. We are less interested in the characteristics of LD children than in the cultural arrangements that make an LD label relevant.	At this point Kelvin was not sure if he wanted to continue reading the article because it seemed like it might not be relevant to classroom life specifically. It also implied a severe criticism of professional educators —implied that they are too eager to find examples of LD and for this reason may misclassify students. On the other hand, Kelvin was already aware that LD are an especially ambiguous category of disability; maybe the article would help to show why. So he kept reading.

The authors continued by outlining the history of LD as a category of disability, describing this category as an outgrowth of the general intelligence testing movement during the twentieth century. By the 1970s, they argued, the concept of LD offered a way to classify children with academic difficulties without having to call the children mentally disabled. Because of this fact, the LD category was needed—literally—by well-off parents who did not want their children treated or educated as children with mental disabilities. LD as a concept and category came to be applied primarily to children from the white middle-class, and mental disability became, by default, the equivalent category for the non-white and poor.

To support this assertion, the authors reported a classroom observation of three non-white boys—Hector, Ricardo, and Boomer—while they worked together to design an imaginary research station in Antarctica. Citing actual transcripts of conversation while the boys worked, the authors concluded that all three boys showed intelligence and insight about the assignment, but that the teacher was only aware of the contributions of one of the boys. Hector systematically hid his knowledge from the

teacher's view by getting Boomer to speak for their group; Ricardo participated well in the group work but was rarely acknowledged by the other two boys. Boomer received considerable praise from the teacher, thanks to his speaking for the group. Yet the teacher was never aware of these subtleties. The authors blamed her oversight not on the teacher herself, but on an educational and cultural system that leads educators to classify or typify students too quickly or easily. Here is how they put it:

The American classroom is well organized for the production of display of failure, one child at a time if possible, but group by group if necessary…Even if the teacher manages to treat every child as capable, the children can hammer each other into negative status; and even if both…resist dropping everyone into predefined categories, the children's parents can take over, demanding more and more boxes with which to specify kinds of kids doing better than other kinds of kids. In such a classroom, if there were no LD categories, someone would have to invent them.	When Kelvin read this conclusion, he did not really disagree, but he did feel that it was beside the point for most teachers. Maybe children do get classified too easily, he thought, but a teacher's job is not just to lament this possibility, as the authors seemed to be doing. Instead their job is to help the real, live children for whom they have daily responsibility. What teachers need are therefore suggestions to avoid misclassifying students by overlooking key information about them. Kelvin wished, at the end, that the authors had made some of these suggestions.

Relevance: a critical framework

In this study the authors offered a sort of backhanded framework of thinking about categories of disability; or more precisely they offered a framework for understanding what the categories are not. In essence they said that disability categories describe qualities "in" students only in the sense that educators and others happen to think of disability categories in this way. An equally reasonable way to think about disabilities, they argued, is that modern society is organized so that its citizens have to be classified for many different reasons. Educators are simply helping to implement this society-wide expectation. A frequent result in classrooms is that teachers

classify students too easily and that key evidence of students' capacity is overlooked.

In making this argument, the authors implied an indirect recommendation about how to teach, though the recommendation actually focused on what teachers should not do. Instead of (mis)identifying children with learning difficulties, the authors implied, teachers and other educators should stop concerning themselves with classifying children, and seek to reorganize classrooms and schools so that classification is less important. "Change the school," they wrote, "and LD becomes less relevant." This conclusion may be an important reminder, but it is not especially helpful as a recommendation to practicing teachers, who usually need to know about more than what to avoid.

The readers' role: concerned advocate for social justice

It is not surprising that the article lacked concrete recommendations for teaching, given that the authors seemed to speak to readers not as classroom teachers, but as general critics of society who are concerned about fairness or social justice. Their comments made two assumptions: first, that readers will want to minimize unfair stereotypes of students, and second, that readers will seek greater fairness in how teachers treat students. For readers who happen to be teachers themselves, the first of these assumptions is a reasonable one; most of us would indeed like to minimize unfair stereotyping of students. The second is also reasonable, but perhaps not in a way that the authors intended. Teachers probably do try their best to treat students fairly and respectfully. Their responsibilities usually mean, however, that they can only do this conveniently with their own students; the time available to work toward general social justice is often limited. (As you might suspect, Kelvin was not fully satisfied after he finished reading this article!)

Example #3: The impact of bilingualism on reading

In 1995, three education professors—Robert Jiménez, Georgia García, and David Pearson—published a study about the impact of bilingualism on children's ability to read English (1995). The three specialized in curriculum studies, literacy acquisition, and bilingual language development, and were therefore motivated by a concern for the academic success of bilingual children and especially by concern for identifying why bilingual children sometimes have difficulty learning to read English. Too much research on bilingualism, they argued, was based on what they called a "deficit" framework: it focused on what bilingual children lacked compared to monolinguals. They sought an alternative framework, one focused on bilingual students' competence, and especially on their competence to read a second language.

To search for this alternative, the researchers mounted a large research program, and the article published in 1995 was one of the studies resulting from this research. It caught Kelvin's interest not only because of its topic, but because of its approach. Instead of surveying dozens of students with a questionnaire, as researchers sometimes do, these investigators relied on just three students studied intensively. Each student became a case study and included detailed, lengthy observations and interviews of that particular student. Each student was chosen deliberately for a particular purpose. One was a highly proficient reader who was also bilingual (Spanish and English); a second was a marginally proficient reader who was bilingual (Spanish and English); and a third was a

highly proficient reader who was monolingual in English. To qualify for the study, furthermore, each student had to be comfortable reflecting on and talking about their own reading processes, so that the authors could interview them at length on this topic. The researchers asked each student to read six one-page passages in English and (where relevant) in Spanish. They invited all three to think aloud about their reading as they went along, commenting on how they figured out particular words or passages. The oral readings and think-aloud commentaries were taped and transcribed, and became the information on which the authors based their conclusions and recommendations.

Using these procedures, Jiménez, García, and Pearson discovered important differences among the three girls. The proficient bilingual, Pamela, used her growing knowledge of each language to help in learning vocabulary from the other language. When she encountered the English word "species" , for example, she guessed correctly that it meant the same as the similar Spanish word "especies"; and when she encountered the Spanish "liquído," she guessed correctly that it meant the English "liquid." Her focus on learning vocabulary was stronger than for the proficient monolingual, Michelle, who commented less on specific words than how the overall reading passages related to her prior general knowledge. The difference presumably stemmed from Michelle's greater familiarity with English vocabulary—so much greater, in fact, that Michelle did not need to think about individual words deliberately. Both Michelle and Pamela differed, however, from the less-proficient bilingual reader, Christine. Like Pamela, Christine focused on vocabulary, but she did not think of her native Spanish as a resource for this task. When reading a Spanish word, she was sometimes reminded of English equivalents ("cognates," as language teachers call them), but she did not use her much greater knowledge of Spanish to assist with her more limited English. She did not search for equivalent words deliberately, as Pamela did.

Relevance: recommendations for teaching english as an additional language

The authors of this article focused more directly on particular learning behaviors than did the authors of the two articles described earlier. Jimenez and his colleagues emphasized the importance of regarding a child's native language as a strength in the process, not a liability, and they then pointed out the importance of facilitating vocabulary development. But they did not claim this recommendation to be appropriate for all children or for all forms of bilingualism. They only focused on a particular pair of languages (Spanish and English in the USA), and on three combinations of skill level in these two languages. These are common bilingual experiences in the United States, but they are not the only ones, either in the United States or elsewhere in the world.

For other bilingual situations, their conclusions might not hold true. For some students (e.g. Chinese Americans), the native language and the second language are much more different in vocabulary, pronunciation, and grammar than Spanish is to English, and therefore may provide less of a resource to a child learning to read. In some settings, relationships between languages are more equal than in the United States. In Canada, for example, both the numbers and the overall social status of English speakers and French speakers are more equal than in the United States. In both of these situations, if a child fails to learn to read the second language, it may not be for the reasons suggested by Robert Jiménez, but for other reasons, ranging from difficulties with reading per se to cultural differences in how a child expects to be taught (Johnson, 2004).

The reader's role: both teacher and researcher

In the published article describing their research, Jiménez, García,

and Pearson assumed that readers have some familiarity with bilingual students and with issues related to teaching reading. They began their article by describing previous research studies in these areas—more than a dozen of them, in fact. In the middle they described numerous responses of the three bilingual students to the passages they were asked to read. At the end of the article they made specific suggestions for teaching, such as "focus more on vocabulary development". When Kelvin read these various sections, he found that his prior knowledge of and reflections about teaching helped to make sense of them. But he also found that did not need to be an expert in bilingualism order to understand the authors' messages—he had never, in fact, taught English as a Second Language, nor had he ever conducted research on reading or bilingual language development.

Action research: hearing from teachers about improving practice

Each of the professional articles just described offers ideas and recommendations that can stimulate reflection about teaching and learning. But they all suffer from a particular limitation: Although they often relate to teachers and classrooms, teachers' role in influencing in designing and interpreting a study is minimal. In the world of educational research, persons other than teachers—typically professors, educational administrators, or other professional researchers—tend to speak on behalf of teachers. All three of the articles described earlier in this chapter had this feature. Persons other than teachers chose the research topics.

The information that emerges from this arrangement often still relates to teaching and learning, and may contain useful insights for classroom work. But by definition, it is framed by people whose interests and fundamental commitments may not be identical with classroom teachers. As a result, the studies are somewhat more

likely to attend to problems posed by academic disciplines or by educational administrators. Two of the studies which we described earlier—the ones about moral development and about labels for disabilities—showed this quality. Classroom teachers are concerned, of course, about both moral development and categorizing of students. But if teachers had designed the two projects themselves, they might have re-framed both of them to focus more explicitly on the challenges of classroom teaching. In studying moral beliefs, for example, teachers might have focused more squarely on how to foster moral beliefs in their students. In studying inclusive education, they might have focused more fully on the practical difficulties faced by teachers in assessing students' learning disabilities with validity.

The nature of action research

In view of these issues, a particularly important kind of investigation for teachers is action research (sometimes also teacher research), an activity referring to systematic, intentional inquiry by teachers for the purpose of improving their own practice (Stenhouse, 1985; Brydon-Miller, Greenwood, & Maguire, 2003; Russell, T. & Loughran, J. 2005). Action research is not to be confused with research about teaching and learning, which are investigations by professional researchers on topics of teachers, teaching, or learning.

Action research has several defining characteristics, in addition to being planned and conducted by teachers. First, it originates in the problems and dilemmas of classroom practice, or in chronic problems with certain students, materials, or activities. Second, its outcomes offer information focused on particular teachers and classrooms, rather than about teachers in general or students in general. Although this feature might make action research seem less useful as a source of advice or knowledge that is truly general, supporters argue that focusing on specific learning contexts makes

action research more credible or valid as a source of practical information and ideas. It is, they argue, simply more attuned to the context of real classrooms (St. Clair, 2005). Third, while the audience for action research can certainly include professors and educational administrators, the audience tends to be other teachers (Fenstermacher, 1994; Ackerman & MacKenzie, 2007). Action research is therefore in an especially strong position to provide "insider" perspectives on educational problems.

Action research in practice

Action research makes a number of assumptions as a result of its nature and purposes (Richardson, 1994; Schmuck, 2006). To varying degrees, most such studies support some combination of these ideas:

- that teaching is itself really a form of research
- that action research, like teaching itself, requires substantial reflection
- that collaboration among teachers is crucial for making teacher research meaningful, and for the improvement of teaching
- that teachers' knowledge of teaching has to be shared publicly, especially when gained systematically through action research

To see how these features look in practice, look at several examples of action research studies.

Example #1: Focusing on motivating students

A number of years ago, Patricia Clifford and Sharon Friesen published an account of their effort to develop a classroom program based on students' out-of-school interests and experiences (1993). Clifford and Friesen were co-teachers in a double-sized classroom which deliberately included children from first, second and third grades. Their interest in students' out-of-school experiences grew out of three more basic questions about teaching, which they phrased like this:

- How can curriculum remain open to children's unique experiences and connect with the world they know outside the school? Too often, the official school curriculum lacked meaning for children because it seemed cut off from the rest of the world. The result was unmotivated students and poor learning.
- Why is imaginative experience the best starting place for planning? The teachers felt that imaginative experiences—make-believe play, stories, poems—provided access to children's lives outside school—their make-believe play, or their stories or poems. Perhaps somehow these could be connected to the goals of the official curriculum.
- What happens when teachers break down the barriers between school knowledge and real knowledge? In drawing on children's outside experiences, would children actually become more motivated or not? Would they take over the program,

and fail to learn the official curriculum goals?

To answer these questions, the teachers kept extensive diaries or journals for one entire school year. These became the "data" for the research. In the journals, they described and reflected on their daily teaching experiences. The teachers also talked with each other extensively about classroom events and their significance, and the results of the conversations often entered the journals eventually during the research. In their journal, for example, the teachers recorded an experience with students about ways of telling time. In preliminary discussions the students became interested in how a sundial worked. So the teachers and students went outside, where they created a human sundial, using the students themselves. The teachers' journal kept a chronicle of these events, and noted the comments and questions which students developed as a result:

- If you stood in the same place for a whole day you would see your shadow change places because the earth changes position.
- Why is my shadow longer than I am in the evening, but shorter at noon?
- Clouds can block the sun's rays so sundials won't work on rainy days.
- How did people start to tell time?

As the year evolved and observations accumulated and were recorded, the teachers gradually began to answer their own three questions. They found, for example, that connecting the curriculum with children's interests and motives was most effective when they could establish a

personal bond with a child. They also found that imaginative expression helped certain children to feel safe to explore ideas. They found that blending school-based and personal knowledge caused children to learn much more than before—although much of the additional knowledge was not part of an official curriculum. With these conclusions in mind, and with numerous examples to support them, Clifford and Friesen published their study so that others could share what they had learned about teaching, learning, and students.

The study by Clifford and Friesen is interesting in its own right, but for our purposes think for a moment about their work as an example of action research. One of its features is that it formed part of the normal course of teaching: the authors were simply more systematic about how they observed the students and recorded information about classroom events. Another feature is that the research required conscious reflection over an extended time: their journals and conversations contained not only descriptions of events, but also interpretations of the events. A third feature is that the study involved collaboration: it was not just one teacher studying the major questions, but two. Th fourth feature is that the teachers not only developed their results and conclusions for themselves, but also shared them with others. These four qualities make the study by Clifford and Friesen a clear example of teacher research. Note, though, that sometimes studies conducted by teachers may not show all of these features so clearly; instead they may show some of the key features, but not all of them, as in the next two examples.

Example #2: Focusing on development

Since 1981, Vivian Paley has published a series of short books documenting and interpreting her observations of young children in classrooms (1981, 1986, 1991, 1998, 2000, 2005). Paley was interested in how young children develop or change over the long term, and in particular how the development looks from the point of view of a classroom teacher. In one of these books, for example, she observed one child in particular, Mollie, from the time she entered nursery school just after her third birthday until after the child turned four years old (Paley, 1986). Her interest was not focused on curriculum, as Clifford and Friesen's had done, but on Mollie as a growing human being; "the subject which I most wished to learn," she wrote, "is children" (p. xiv). Paley therefore wrote extended narrative (or story-like) observations about the whole range of activities of this one child, and wove in periodic brief reflections on the observations. Because the observations took story-like form, her books read a bit like novels: themes are sometimes simply suggested by the story line, rather than stated explicitly. Using this approach, Paley demonstrated (but occasionally also stated) several important developmental changes. In Mollie at Three (1988), for example, she describes examples of Mollie's language development. At three years, the language was often disconnected from Mollie's actions—she would talk about one thing, but do another. By four, she was much more likely to tie language to her current activities, and in this sense she more often "said what she meant." A result of the change was that Mollie also began understanding and

following classroom rules as the year went on, because the language of rules became more connected in her mind to the actions to which they referred.

Vivian Paley's book had some of the characteristics of action research—but with differences from Clifford and Friesen's. Like their research, Paley's "data" was based on her own teaching, while her teaching was influenced in turn by her systematic observations. Like Clifford and Friesen's, Paley's research involved numerous reflections on teaching, and it led to a public sharing of the reflections—in this case in the form of several small books. Unlike Clifford and Friesen, though, Paley worked independently, without collaboration. Unlike Clifford and Friesen, she deliberately integrated observation and interpretation as they might be integrated in a piece of fiction, so that the resulting "story" often implied or showed its message without stating it in so may words. In this regard her work had qualities of what some educators call arts-based research, which are studies that take advantage of an artistic medium (in this case, narrative or story-like writing) to heighten readers' understanding and response to research findings (Barone and Eisner, 2006). If you are studying the use of space in the classroom, for example, then aesthetically organized visual depictions (photos, drawings) of the room may be more helpful and create more understanding than verbal descriptions. If you are studying children's musical knowledge, on the other hand, recordings of performances by the children may be more helpful and informative than discussions of performances.

Example #3: Focusing on collaboration

In 1996, an example of action research was published that was intended simultaneously for classroom teachers and for university researchers, and which focused on the challenges of collaboration among educators (Ulichny & Schoener, 1996). A teacher (Wendy Schoener) and a university researcher (Polly Ulichny) explored how, or even whether, teachers and university researchers could participate as equals in the study of teaching. Wendy (the two used first names throughout when they published their experiences) was a teacher of adults learning English as a Second Language (ESL); Polly was a specialist in multicultural education and wanted to observe a teacher who was successful at reaching the ethnically diverse students who normally study ESL. Polly therefore asked Wendy for permission to study her teaching for an extended period of time—to visit her class, videotape it, interview her about it, and the like.

What followed is best described as an extended negotiation between teacher and professor for access to Wendy's class, on the one hand, and for mutual respect for each other's work, on the other. In the published article, the negotiations are described separately by each participant, in order to honor the differences in their concerns and perspectives. Before, during, and after the observations, it was necessary for Polly and Wendy each to adjust expectations of what the other person could do and was willing to do. As the authors put it, some things were "easy to hear" from the other and some things were "hard to hear". Wendy, as a teacher, found it easier to hear criticisms

of her teaching if they came from herself, rather than from the higher-status university professor, Polly. Polly, for her part, found it easier to hear Wendy's comments if she matched Wendy's self-criticisms and evaluations with some of her own experiences. Polly therefore made sure to tell Wendy about dilemmas and problems she experienced in her own (university) teaching. Because they needed to adjust to hearing and talking with each other, the two educators eventually focused less on Polly's original purpose—studying multicultural teaching—and more on the problem of how teachers and university researchers might collaborate effectively.

Overall, this study qualifies as a piece of action research, though it is not fully focused on classroom teaching. For example, the teachers did collaborate and reflect on their experiences, but not all of the reflection was about teaching in classrooms. The rest was about the relationship between Wendy and Polly. While the problem selected was originally about classroom teaching—Wendy's—it did not originate with the classroom teacher (Wendy) or concerns she had about her own classroom; instead it was chosen by the university researcher (Polly) and her desire to study multicultural teaching. The researchers did share what they learned by publishing their observations and ideas, but their published report speaks only partly to classroom teachers as such; in addition it speaks to academic researchers and educators of future teachers.

By pointing out differences among these examples of action research, we do not mean to imply that one is "better" than another. The point is simply to show how diverse studies by teachers can be and to appreciate their differences. Whatever their specific features, classroom studies by teachers hold in common the commitment to giving a voice to teachers as they reflect on problems and challenges intrinsic to classroom life. This goal can

be accomplished in more than one way: through journals and other record-keeping methods, through oral discussions with colleagues, and through written reflections created either for themselves or for others concerned about teaching and learning. Diversity among topics and methods in action research studies should not surprise us, in fact, since classrooms are themselves so diverse.

The challenges of action research

Well and good, you may say. Action research offers teachers a way to hear each other, to learn from their own and other's experience. But there are also a few cautions to keep in mind, both ethical and practical. Look briefly at each of these areas.

Ethical cautions about action research

One caution is the possibility of conflict of interest between the roles of teaching and conducting action research (Hammack, 1997). A teacher's first priorities should be the welfare of his or her students: first and foremost, you want students to learn, to be motivated, to feel accepted by their peers, and the like. A researcher's first priorities, however, are to the field or topic being studied. The two kinds of priorities may often overlap and support each other. Vivian Paley's observations of children in her classes, described earlier, not only supported her children's learning, but also her studies of the children.

But situations can also occur in which action research and teaching are less compatible, and can create ethical dilemmas. The problems usually relate to one of three issues: privacy, informed consent, or freedom to participate. Each of these becomes an issue only if the results of a research project are made public, either in a

journal or book, as with the examples we have given in this chapter, or simply by being described or shared outside the classroom. (Sharing, you may recall, is one of the defining features of action research.) Look briefly at each of the issues.

Insuring privacy of the student

Teachers often learn information about students that the students or their families may not want publicized. Suppose, for example, you have a student with an intellectual disability in your class, and you wish to study how the student learns. Observing the student work on (and possibly struggle with) academic activities may be quite consistent with a teacher's responsibilities; after all, teachers normally should pay attention to their students' academic efforts. But the student or his family may not want such observations publicized or even shared informally with other parents or teachers. They may feel that doing so would risk stigmatizing the student publicly.

To respect the student's privacy and still study his learning behavior, the teacher (alias the "action researcher") therefore needs to disguise the student's identity whenever the research results are made public. In any written or oral report, or even in any hallway conversation about the project, the teacher/researcher would use a pseudonym for the student, and change other identifying information such as the physical description of the student or even the student's gender. There are limits, however, to how much can be disguised without changing essential information. The teacher could not, for example, hide the fact of the intellectual disability without compromising the point of the study; yet the intellectual disability might be unusual enough that it would effectively identify the student being studied.

Gaining informed consent

Students may not understand what is being studied about them, or even realize that they are being studied at all, unless the teacher/researcher makes an explicit effort to inform them about the action research and how she will use the results from it. The same is true for the students' parents; unless the teacher-researcher makes an effort to contact parents, they simply will not know that their child's activities are being observed or may eventually be made public. Students' ignorance is especially likely if the students are very young (kindergarten) or have intellectual or reading difficulties, as in the example we described above. As an action researcher, therefore, a teacher is obliged to explain the nature of a research project clearly, either in a letter written in simple language or in a face-to-face conversation, or both. Parents and students need to give clear indications that they actually understand what class activities or materials will constitute data that could be made public. In most cases, indicating informed consent means asking students' parents signing a letter giving permission for the study. Sometimes, in addition, it is a good idea to recheck with students or parents periodically as the project unfolds, to make sure that they still support participation.

Insuring freedom to participate

When a student fails to participate in an ordinary class activity, most teachers consider it legitimate to insist on the student's participation—either by persuading, demanding, or (perhaps) tricking the student to join. Doing so is ethical for teachers in their roles as teachers, because teachers are primarily responsible for insuring that students learn, and students' participation presumably facilitates learning. If a teacher designates an activity as part of an action research project, however, and later shares the results with

them, the teacher then also becomes partly responsible for how other teachers use knowledge of the research study. (Remember: sharing results is intrinsically part of the research process.) The resulting dual commitment means that "forcing" a student to participate in an action research activity can no longer be justified solely as being for the student's own educational good.

Much of the time, a simultaneous commitment to both teachers and students presents no real dilemma: what is good for the action research project may also be good for the students. But not always. Suppose, for example, that a teacher wants to do research about students' beliefs about war and global conflict, and doing so requires that students participate in numerous extended group discussions on this topic. Even though the group discussions might resemble a social studies lesson and in this sense be generally acceptable as a class activity, some parents (or students) may object because they take too much class time away from the normal curriculum topics. Yet the research project necessitates giving it lots of discussion time in class. To respond ethically to this dilemma, therefore, the teacher may need to allow students to opt out of the discussions if they or their parents choose. She may therefore need to find ways for them to cover an alternate set of activities from the curriculum. (One way to do this, for example, is to hold the special group discussions outside regular class times—though this obviously also increases the amount of work for both the teacher and students.)

Practical issues about action research

Is action research practical? From one perspective the answer has to be "Of course not!" Action research is not practical because it may take teachers' time and effort which they could sometimes use in other ways. Keep in mind, though, that a major part of the effort needed for action research involves the same sort of

work—observing, recording information, reflecting—that is needed for any teaching that is done well. A better way to assess practicality may therefore be to recognize that teaching students always takes a lot of work, and to ask whether the additional thoughtfulness brought on by action research will make the teaching more successful.

Looked at in this way, action research is indeed practical, though probably not equally so on every occasion. If you choose to learn about the quality of conversational exchanges between yourself and students, for example, you will need some way to record these dialogues, or at least to keep accurate, detailed notes on them. Recording the dialogues may be practical and beneficial—or not, depending on your circumstances. On the other hand, if you choose to study how and why certain students remain on the margins of your class socially, this problem too may be practical as action research. Or it may not, depending on whether you can find a way to observe and reflect on students' social interactions, or lack thereof. Much depends on your circumstances—on the attention you can afford to give to your research problem while teaching, in relation to the benefits that solutions to the problems will bring students later. In general any action research project may require certain choices about how to teach, though it should not interfere with basic instructional goals or prevent coverage of an important curriculum. The main point to remember is that action research is more than passive observation of students and classrooms; it also includes educational interventions, efforts to stimulate students to new thinking and new responses. Those are features of regular teaching; the difference is primarily in how systematically and reflectively you do them.

Benefiting from all kinds of research

Although we authors both feel a degree of sympathy for the nature

and purposes of action research, we are not trying to advocate for it at the expense of other forms of educational research or at the expense of simply reading and understanding professional publications in general. The challenge for you, as a classroom teacher, is to find the value in all forms of professional development, whether it be participation in a professional association, reading general articles about research, or engaging in your own action research. To the extent that you draw on them all, your ways of learning about teaching will be enriched. You will acquire more ways to understand classroom life, while at the same time acquiring perspective on that life. You will learn ways to grasp the individuality of particular students, but also to see what they need in common. You will have more ways to interpret your own experiences as a professional teacher, but also be able to learn from the professional experience of others. Realizing these benefits fully is a challenge, because the very diversity of classrooms renders problems about teaching and learning complex and diverse as well. But you will also gain good, professional company in searching for better understanding of your work—company that includes both educational researchers, other professional teachers, and of course your students.

Appendix summary

The complexities of teaching require teachers to continue learning throughout their teaching careers. To become a lifelong reflective practitioner, teachers can rely on colleagues as a resource, on professional associations and their activities, and on professional publications related to educational issues and needs. Understanding the latter, in turn, requires understanding the purposes of the published material—whether it is offering a general framework, recommending desirable teaching practices, or advocating for a particular educational policy or need. Interpreting published

material also requires understanding the assumptions that authors make about readers' prior knowledge and beliefs.

An important additional strategy for becoming a reflective practitioner is action research—studies of teaching and learning designed and carried out by teachers in order to improve their own practice. By nature, action research studies are highly relevant to classroom practice, but there are also cautions about it to keep in mind, both ethically and practically.

Further Resources

The two following websites belong to professional organizations dedicated to action research.

- The first belongs to the Society for Community Research and Action, a division of the American Psychological Association. It promotes and publishes action research in many professions, one of which is education.
- The second website belongs to the Action Research Special Interest Group of the American Educational Research Association; as you might suspect from its name, it focuses exclusively on action research by educators.

This website offers the lectures notes and videos of class sessions in a course about reflective practice offered at the Massachusetts Institute of Technology (MIT) in Cambridge, Massachusetts. The materials are of high quality, and go into much more detail about the concept than is possible in this appendix.

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21. APA References Page Formatting

Placement

The References page is located at the end of the main body of the paper and begins at the top of a new page. Appendices, footnotes, and additional materials should follow after the References page.

General Format

Like the rest of the paper, the References page should be double-spaced and typed in Times New Roman, 12 pt. The running head should appear flush with the upper left-hand corner of the page, and the page number should appear at the upper right-hand corner of the page.

The title of the References page is capitalized and centered at the top of the page without any formatting, including bold, italics, underlining, or quotation marks. Avoid mislabeling the References page as "Works Cited," "Sources," or "Bibliography."

Entries

Each entry should be formatted as a hanging indentation: the first line of each citation should be flush with the left margin while each subsequent line of the citation is indented five spaces from the left margin. Alphabetize the entries in the References page based on the

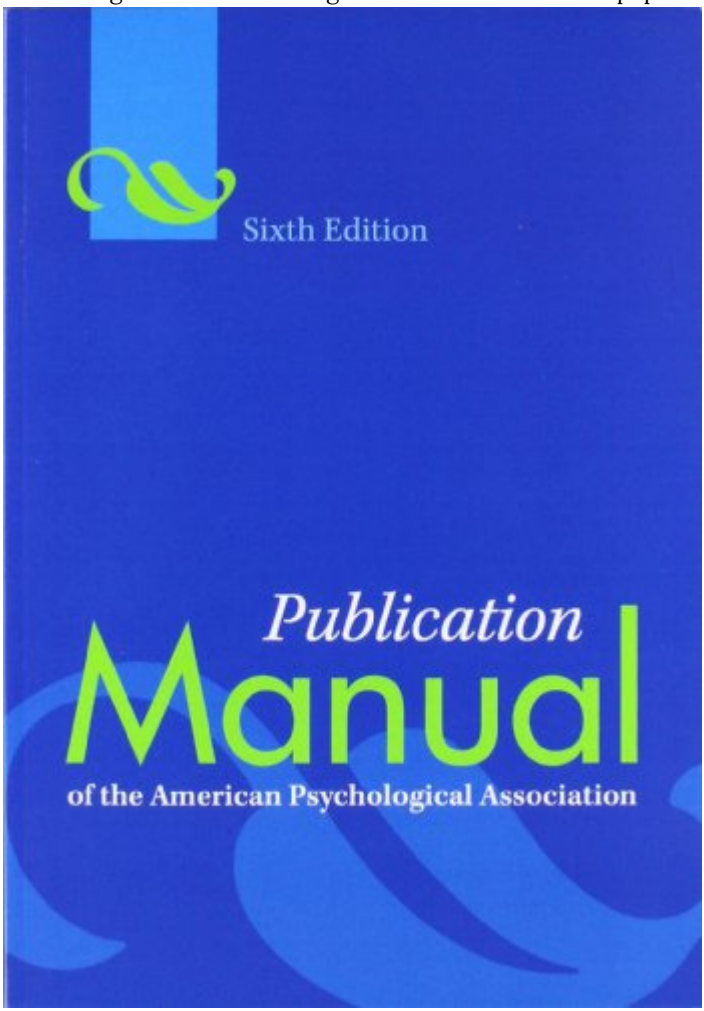
authors' last names (or the first word of a work's title, if a work does not name any authors). Though it will vary from source to source, the general structure of a print book citation is as follows:

Author Last Name, Initials. (Year of publication). *Title of the work.* Publication city: Publishing Company.

Electronic sources generally require more information than print sources, such as a uniform resource locator (URL), a digital object identifier (DOI), or the date the source material was accessed.

22. Why Is APA Documentation Important?

American Psychological Association (APA) Style is a method of formatting and referencing works in research papers and



manuscripts. This style is most commonly practiced by academics within the social sciences, including the fields of nursing, psychology, and political science, and economics. APA style provides writers with a consistent formula for acknowledging the works of others using parenthetical in-text citations and a page listing all references. Additionally, APA style makes use of specific guidelines concerning the structure, content, and order of each page of a research paper or manuscript. Adhering to the uniform standards of APA style will enhance your paper's organization and allow readers to review your work with greater clarity.

The APA articles and templates on this website were developed in accordance with the 6th edition of the *Publication Manual of the American Psychological Association*. Consult the *Publication Manual* (6th ed.) for more details about formatting and organizing your document.

23. APA Order of Major Sections

Careful adherence to these conventions is likely to make a good initial impression on the reader, while carelessness may have the opposite effect. When the major sections of a paper are carefully arranged in the appropriate order, the reader may be more inclined to show an interest in the paper's ideas.

How should the major sections of an APA-style paper be arranged?

- **Title Page**: acts as the first major section of the document
  - Presents a running head and begins the document's pagination
  - Includes the paper's full title centered in the upper half of the page
  - Contains the name(s) of the writer(s) and their institutional affiliation
- **Abstract**: acts as the second major section of the document
  - Presents a single-paragraph summary of the paper's contents
  - Contains approximately 150 to 250 words
  - Includes select keywords for easy access by researchers
- **Main Body**: acts as the third major section of the document
  - Presents a report of the writer(s)' research and findings
  - Includes four sections (typically): the introduction, method, results, and discussion
  - Provides the reader with pertinent information about the paper's topic
- **References page**: acts as the fourth major section of the document

- Presents a compilation of the sources cited in the paper
- Provides a comprehensive list of works that appear as in-text citations in the paper
- Details the full source information for each entry

24. APA First Main Body Page Formatting

Beginning at the top of a new page, the main body of the research paper follows the abstract and precedes the References page. Comprised of the introduction, method, results, and discussion subsections, the main body acts as the third major section of the document and typically begins on the third page of the paper.

General Format

Like the rest of the paper, the pages of the main body should be double-spaced and typed in Times New Roman, 12 pt. The margins are set at 1" on all sides. While the running head is flush with the upper left-hand corner of every page, the page number is flush with the upper right-hand corner of every page. Note that all letters of the running head should be capitalized and should not exceed 50 characters, including punctuation, letters, and spaces.

A YouTube element has been excluded from this version of the text. You can view it online here: https://library.achievingthedream.org/hostoschilddevelopmenteducation/?p=44

The full title of the paper is centered directly above the introduction with no extra space between the title and the first paragraph. Avoid formatting the title with bold, italics, underlining, or quotation marks. The first letter of each major word in the title should be capitalized. Unlike other sections of the main body, the introduction does not require a heading or label.

When writing each paragraph, note that the APA recommends using two spaces after sentences that end in a period; however, sentences that end in other punctuation marks may be followed by a single space.

25. APA In-Text Citations

An essential component of a research paper, in-text citations are a way of acknowledging the ideas of the author(s) of a particular work.

Each source that appears as an in-text citation should have a corresponding detailed entry in the References list at the end of the paper. Including the required elements in every citation allows other researchers to easily track the references used in a paper and locate those resources themselves.

There are three pieces of information that should be included in a citation after quoting another writer's work: the author's last name, the year of publication, and the page number(s) of the quoted material, all of which are separated by commas. The page number should follow a lower-case letter '*p*' and a period.

- Basic structure: (Author, Year of Publication, p. 142)
    - **Example: (Kutner, 2003, p. 451) [1]**

If the quoted material was taken from more than one page, use two lower-case letter '*p*' s.

- Basic structure: (Author, Year, of Publication, pp. 194-196)
    - **Example: (Kutner, 2003, pp. 451-452) [1]**

How should multiple authors of a single source be cited?

There are a few guidelines to follow when citing multiple authors for a single source. Separate the names of the source's authors by using commas. Depending on the location and instance of the citation, an

ampersand(&), the word *and*, or the term *et al.* may also need to be used.

When should an ampersand be used?

Ampersands (&) should only be used in parenthetical in-text citations. An ampersand separates the last and second to last author of a cited work.

- **Example: Research has demonstrated that "synesthesia appears quite stable over time, and synesthetes are typically surprised to discover that other people do not share their experiences" (Niccolai, Jennes, Stoerig, & Van Leeuwen, 2012, p. 81). [1]**

When should the word *and* be used?

The word and should only be used in a sentence or paragraph; do not use it in a parenthetical in-text citation. The last and second to last author of a cited work are separated by the word *and*.

- **Example: Niccolai, Jennes, Stoerig, and Van Leeuwen (2012) observed that "synesthesia appears quite stable over time, and synesthetes are typically surprised to discover that other people do not share their experiences" (p. 81). [1]**

When should the term *et al.* be used?

When citing a single work with many authors, you may need to substitute some of the authors' names with the term *et al.* The

term*et al.* should not be italicized in your paper, and a period should be placed after the word *al* as it is an abbreviated term. Follow these guidelines regarding the usage of *et al.*:

Use *et al.*:

- The first time and every time you cite a source with at least six authors.
    - **Example: The in-text citation of *Zoonoses: Infectious diseases transmissible from animals to humans*, a book authored by Krauss, Weber, Appel, Enders, Isenberg, Schiefer, Slenczka, von Graevenitz, and Zahner, would appear as follows: [2]**
      (Krauss et al., 2003, p. 91)
    - As Krauss et al. (2003) observed, …

- Every following time (after the first instance) that you cite a source with at least three authors.
    - **Example: Citing the article "Modality and variability of synesthetic experience" by Niccolai, Jennes, Stoerig, & Van Leeuwen would appear as follows: [1]**
      The first instance: (Niccolai, Jennes, Stoerig, & Van Leeuwen, 2012, p. 81)
    - Every following instance: (Niccolai et al., 2012)

Avoid using *et al.*:

- The first time you cite a source with up to five authors.
    - Instead, list all of the authors at their first mentioning.
- To cite a work that only has two authors.

- Instead, always list the two authors' names in every citation (separated by either an ampersand or the word and, depending on the location)

26. APA Title Page Formatting

Placement

As the first major section of the document, the title page appears at the top of the first page.

Components

The title page is comprised of a few key elements:

- Running head (or shortened title) and label
- Page number
- Full title of the paper
- Author byline: first name(s), middle initial(s), and last name(s)
- Affiliated Institution(s) or Organization(s)
- Author note (optional)

Follow your instructor's directives regarding additional lines on the title page. Some professors require further information, including the date of submission, course number or title, or name of the professor.

General Format

Like the rest of the paper, the title page should be double-spaced

and typed in Times New Roman, 12 pt. The margins are set at 1" on all sides.

https://youtu.be/tNuYwptSzP8

How should the running head be formatted on the title page?

The running head and label is flush with the upper left-hand corner of the title page, while the page number is flush with the upper right-hand corner of the page. The label "Running head" should only appear on the title page; on all other pages, simply include the shortened title of the paper. All letters of the running head should be capitalized and should not exceed 50 characters, including punctuation, letters, and spaces.

Example of a correctly formatted running head on the title page:

Running head: EFFECTS OF NUTRITION ON MEMORY

Note: The title page is distinct in that the shortened title of this page is preceded by the label "Running head" followed by a colon; ***no other page****of the document features this label.*

How should the full title of the paper be formatted?

The full title of the paper is centered in the upper half of the page, and the first letter of each major word is capitalized. The paper's title should be a maximum of 12 words and fill one or two lines; avoid using abbreviations and unnecessary words. Do not format the title with bold, italics, underlining, or quotation marks.

How should the author byline be formatted?

The author byline is comprised of the author(s)' first name(s), middle initial(s), and last name(s); this line follows after the full title of the research paper. Note that two authors are separated by the word and, but more than two authors' names are separated by commas.

What should the institutional affiliation include?

Following the author byline is the institutional affiliation of the author(s) involved with the research paper. Include the name of the college or university you attend, or the name of the organization(s) that provided support for your research.

Any additional lines of information requested by your professor may be situated after the institutional affiliation. If your instructor requires you to include an author's note, position it in the lower half of the title page.

27. APA Formatting: The Basics

Click the following to watch the video: https://youtu.be/pdAfIqRt60c

PART VI

MODULE 4: THEORIES (PART I)

28. Cognitive Development: The Theory of Jean Piaget

Cognition refers to thinking and memory processes, and **cognitive development** refers to long-term changes in these processes. One of the most widely known perspectives about cognitive development is the cognitive stage theory of a Swiss psychologist named **Jean Piaget**. Piaget created and studied an account of how children and youth gradually become able to think logically and scientifically. Because his theory is especially popular among educators, we focus on it in this chapter.

Piaget was a **psychological constructivist**: in his view, learning proceeded by the interplay of assimilation (adjusting new experiences to fit prior concepts) and accommodation (adjusting concepts to fit new experiences). The to-and-fro of these two processes leads not only to short-term learning, but also to long-term **developmental change**. The long-term developments are really the main focus of Piaget's cognitive theory.

After observing children closely, Piaget proposed that cognition developed through distinct stages from birth through the end of adolescence. By stages he meant a sequence of thinking patterns with four key features:

1. They always happen in the same order.
2. No stage is ever skipped.
3. Each stage is a significant transformation of the stage before it.
4. Each later stage incorporated the earlier stages into itself.

Basically this is the "staircase" model of development mentioned at the beginning of this chapter. Piaget proposed four major stages of cognitive development, and called them (1) sensorimotor intelligence, (2) preoperational thinking, (3) concrete operational

thinking, and (4) formal operational thinking. Each stage is correlated with an age period of childhood, but only approximately.

The sensorimotor stage: birth to age 2

In Piaget's theory, the sensorimotor stage is first, and is defined as the period when infants "think" by means of their senses and motor actions. As every new parent will attest, infants continually touch, manipulate, look, listen to, and even bite and chew objects. According to Piaget, these actions allow them to learn about the world and are crucial to their early cognitive development.

The infant's actions allow the child to represent (or construct simple concepts of) objects and events. A toy animal may be just a confusing array of sensations at first, but by looking, feeling, and manipulating it repeatedly, the child gradually organizes her sensations and actions into a stable concept, *toy animal*. The representation acquires a permanence lacking in the individual experiences of the object, which are constantly changing. Because the representation is stable, the child "knows," or at least believes, that toy animal exists even if the actual *toy animal* is temporarily out of sight. Piaget called this sense of stability **object permanence**, a belief that objects exist whether or not they are actually present. It is a major achievement of sensorimotor development, and marks a qualitative transformation in how older infants (24 months) think about experience compared to younger infants (6 months).

During much of infancy, of course, a child can only barely talk, so sensorimotor development initially happens without the support of language. It might therefore seem hard to know what infants are thinking, but Piaget devised several simple, but clever experiments to get around their lack of language, and that suggest that infants do indeed represent objects even without being able to talk (Piaget, 1952). In one, for example, he simply hid an object (like a toy animal) under a blanket. He found that doing so consistently prompts older

infants (18–24 months) to search for the object, but fails to prompt younger infants (less than six months) to do so. (You can try this experiment yourself if you happen to have access to young infant.) "Something" motivates the search by the older infant even without the benefit of much language, and the "something" is presumed to be a permanent concept or representation of the object.

The preoperational stage: age 2 to 7

In the **preoperational stage**, children use their new ability to represent objects in a wide variety of activities, but they do not yet do it in ways that are organized or fully logical. One of the most obvious examples of this kind of cognition is **dramatic play**, the improvised make-believe of preschool children. If you have ever had responsibility for children of this age, you have likely witnessed such play. Ashley holds a plastic banana to her ear and says: "Hello, Mom? Can you be sure to bring me my baby doll? OK!" Then she hangs up the banana and pours tea for Jeremy into an invisible cup. Jeremy giggles at the sight of all of this and exclaims: "Rinnng! Oh Ashley, the phone is ringing again! You better answer it." And on it goes.

In a way, children immersed in make-believe seem "mentally insane," in that they do not think realistically. But they are not truly insane because they have not really taken leave of their senses. At some level, Ashley and Jeremy always know that the banana is still a banana and not *really* a telephone; they are merely *representing* it as a telephone. They are thinking on two levels at once—one imaginative and the other realistic. This dual processing of experience makes dramatic play an early example of **metacognition**, or reflecting on and monitoring of thinking itself. Metacognition is a highly desirable skill for success in school, one that teachers often encourage (Bredekamp & Copple, 1997; Paley, 2005). Partly for this reason, teachers of young children (preschool, kindergarten, and even first or second grade) often make time and space in their

classrooms for dramatic play, and sometimes even participate in it themselves to help develop the play further.

The concrete operational stage: age 7 to 11

As children continue into elementary school, they become able to represent ideas and events more flexibly and logically. Their rules of thinking still seem very basic by adult standards and usually operate unconsciously, but they allow children to solve problems more systematically than before, and therefore to be successful with many academic tasks. In the concrete operational stage, for example, a child may unconsciously follow the rule: "If nothing is added or taken away, then the amount of something stays the same." This simple principle helps children to understand certain arithmetic tasks, such as in adding or subtracting zero from a number, as well as to do certain classroom science experiments, such as ones involving judgments of the amounts of liquids when mixed. Piaget called this period the **concrete operational stage** because children mentally "operate" on concrete objects and events. They are not yet able, however, to operate (or think) systematically about *representations* of objects or events. Manipulating representations is a more abstract skill that develops later, during adolescence.

Concrete operational thinking differs from preoperational thinking in two ways, each of which renders children more skilled as students. One difference is **reversibility**, or the ability to think about the steps of a process in any order. Imagine a simple science experiment, for example, such as one that explores why objects sink or float by having a child place an assortment of objects in a basin of water. Both the preoperational and concrete operational child can recall and describe the steps in this experiment, but only the concrete operational child can recall them *in any order*. This skill is very helpful on any task involving multiple steps—a common feature

of tasks in the classroom. In teaching new vocabulary from a story, for another example, a teacher might tell students: "First make a list of words in the story that you do not know, then find and write down their definitions, and finally get a friend to test you on your list." These directions involve repeatedly remembering to move back and forth between a second step and a first—a task that concrete operational students—and most adults—find easy, but that preoperational children often forget to do or find confusing. If the younger children are to do this task reliably, they may need external prompts, such as having the teacher remind them periodically to go back to the story to look for more unknown words

The other new feature of thinking during the concrete operational stage is the child's ability to **decenter**, or focus on more than one feature of a problem at a time. There are hints of decentration in preschool children's dramatic play, which requires being aware on two levels at once—knowing that a banana can be both a banana and a "telephone." But the decentration of the concrete operational stage is more deliberate and conscious than preschoolers' make-believe. Now the child can attend to two things at once quite purposely. Suppose you give students a sheet with an assortment of subtraction problems on it, and ask them to do this: "Find all of the problems that involve two-digit subtraction *and* that involve borrowing from the next column. Circle and solve *only* those problems." Following these instructions is quite possible for a concrete operational student (as long as they have been listening!) because the student can attend to the two subtasks simultaneously—finding the two-digit problems *and* identifying which actually involve borrowing. (Whether the student actually knows how to "borrow" however, is a separate question.)

In real classroom tasks, reversibility and decentration often happen together. A well-known example of joint presence is Piaget's experiments with **conservation**, the belief that an amount or quantity stays the same even if it changes apparent size or shape (Piaget, 2001; Matthews, 1998). Imagine two identical balls made of clay. Any child, whether preoperational or concrete operational,

will agree that the two indeed have the same amount of clay in them simply because they look the same. But if you now squish one ball into a long, thin "hot dog," the preoperational child is likely to say that the amount of that ball has changed—either because it is longer or because it is thinner, but at any rate because it now looks different. The concrete operational child will not make this mistake, thanks to new cognitive skills of reversibility and decentration: for him or her, the amount is the same because "you could squish it back into a ball again" (reversibility) and because "it may be longer, but it is also thinner" (decentration). Piaget would say the concrete operational child "has conservation of quantity."

The classroom examples described above also involve reversibility and decentration. As already mentioned, the vocabulary activity described earlier requires reversibility (going back and forth between identifying words and looking up their meanings); but it can also be construed as an example of decentration (keeping in mind two tasks at once—word identification *and* dictionary search). And as mentioned, the arithmetic activity requires decentration (looking for problems that meet two criteria *and* also solving them), but it can also be construed as an example of reversibility (going back and forth between subtasks, as with the vocabulary activity). Either way, the development of concrete operational skills support students in doing many basic academic tasks; in a sense they make ordinary schoolwork possible

The formal operational stage: age 11 and beyond

In the last of the Piagetian stages, the child becomes able to reason not only about tangible objects and events, but also about hypothetical or abstract ones. Hence it has the name **formal operational stage**—the period when the individual can "operate" on "forms" or representations. With students at this level, the teacher can pose hypothetical (or contrary-to-fact) problems: "What *if* the

world had never discovered oil?" or "What *if* the first European explorers had settled first in California instead of on the East Coast of the United States?" To answer such questions, students must use **hypothetical reasoning**, meaning that they must manipulate ideas that vary in several ways at once, and do so entirely in their minds

The hypothetical reasoning that concerned Piaget primarily involved scientific problems. His studies of formal operational thinking therefore often look like problems that middle or high school teachers pose in science classes. In one problem, for example, a young person is presented with a simple pendulum, to which different amounts of weight can be hung (Inhelder & Piaget, 1958). The experimenter asks: "What determines how fast the pendulum swings: the length of the string holding it, the weight attached to it, or the distance that it is pulled to the side?" The young person is not allowed to solve this problem by trial-and-error with the materials themselves, but must reason a way to the solution mentally. To do so systematically, he or she must imagine varying each factor separately, while also imagining the other factors that are held constant. This kind of thinking requires facility at manipulating mental representations of the relevant objects and actions—precisely the skill that defines formal operations.

As you might suspect, students with an ability to think hypothetically have an advantage in many kinds of school work: by definition, they require relatively few "props" to solve problems. In this sense they can in principle be more self-directed than students who rely only on concrete operations—certainly a desirable quality in the opinion of most teachers. Note, though, that formal operational thinking is desirable but not sufficient for school success, and that it is far from being the only way that students achieve educational success. Formal thinking skills do not insure that a student is motivated or well-behaved, for example, nor does it guarantee other desirable skills, such as ability at sports, music, or art. The fourth stage in Piaget's theory is really about a particular kind of formal thinking, the kind needed to solve scientific problems and devise scientific experiments. Since many people do not

normally deal with such problems in the normal course of their lives, it should be no surprise that research finds that many people never achieve or use formal thinking fully or consistently, or that they use it only in selected areas with which they are very familiar (Case & Okomato, 1996). For teachers, the limitations of Piaget's ideas suggest a need for additional theories about development—ones that focus more directly on the social and interpersonal issues of childhood and adolescence. The next sections describe some of these.

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29. Social development: relationships,personal motives, and morality

Social development refers to the long-term changes in relationships and interactions involving self, peers, and family. It includes both positive changes, such as how friendships develop, and negative changes, such as aggression or bullying. The social developments that are the most obviously relevant to classroom life fall into three main areas: (1) changes in self-concept and in relationships among students and teachers, (2) changes in basic needs or personal motives, and (3) changes in sense of rights and responsibilities. As with cognitive development, each of these areas has a broad, well-known theory (and theorist) that provides a framework for thinking about how the area relates to teaching. For development of self-concept and relationships, it is the theory of **Erik Erikson**; for development of personal motives, it is the theory of **Abraham Maslow**; and for development of ethical knowledge and beliefs, it is the work of **Lawrence Kohlberg** and his critic, **Carol Gilligan**. Their theories are definitely not the only ones related to social development of students, and their ideas are often debated by other researchers. But their accounts do explain much about social development that is relevant to teaching and education.

Erik Erikson: eight psychosocial crises of development

Like Piaget, Erik Erikson developed a theory of social development that relies on stages, except that Erikson thought of stages as a

series of psychological or social (or **psychosocial**) **crises**—turning points in a person's relationships and feelings about himself or herself (Erikson, 1963, 1980). Each crisis consists of a dilemma or choice that carries both advantages and risks, but in which one choice or alternative is normally considered more desirable or "healthy." How one crisis is resolved affects how later crises are resolved. The resolution also helps to create an individual's developing personality. Erikson proposed eight crises that extend from birth through old age; they are summarized in Table 1. Four of the stages occur during the school years, so we give these special attention here, but it is helpful also to know what crises are thought to come both before and after those in the school years.

Table 1: Eight psychosocial crises according to Erikson

Psychosocial crisis	Approximate age	Description
Trust and mistrust	Birth to one year	Development of trust between caregiver and child
Autonomy and shame	Age 1–3	Development of control over bodily functions and activities
Initiative and guilt	Age 3–6	Testing limits of self-assertion and purposefulness
Industry and inferiority	Age 6–12	Development of sense of mastery and competence
Identity and role confusion	Age 12–19	Development of identity and acknowledge of identity by others
Intimacy and isolation	Age 19–25+	Formation of intimate relationships and commitments
Generativity and stagnation	Age 25–50+	Development of creative or productive activities that contribute to future generations
Integrity and despair	Age 50+	Acceptance of personal life history and forgiveness of self and others

Crises of infants and preschoolers: trust,

autonomy, and initiative

Almost from the day they are born, infants face a crisis (in Erikson's sense) about **trust and mistrust**. They are happiest if they can eat, sleep, and excrete according to their own physiological schedules, regardless of whether their schedules are convenient for the caregiver (often the mother). Unfortunately, though, a young infant is in no position to control or influence a mother's care giving or scheduling needs; so the baby faces a dilemma about how much to *trust* or *mistrust* the mother's helpfulness. It is as if the baby asks, "If I demand food (or sleep or a clean diaper) *now*, will my mother actually be able to help me meet this need?" Hopefully, between the two of them, mother and child resolve this choice in favor of the baby's trust: the mother proves herself at least "good enough" in her attentiveness, and the baby risks trusting mother's motivation and skill at care giving.

Almost as soon as this crisis is resolved, however, a new one develops over the issue of **autonomy and shame**. The child (who is now a toddler) may now trust his or her caregiver (mother), but the very trust contributes to a desire to assert *autonomy* by taking care of basic personal needs, such as feeding, toileting, or dressing. Given the child's lack of experience in these activities, however, self-care is risky at first—the toddler may feed (or toilet or dress) clumsily and ineffectively. The child's caregiver, for her part, risks overprotecting the child and criticizing his early efforts unnecessarily and thus causing the child to feel *shame* for even trying. Hopefully, as with the earlier crisis of trust, the new crisis gets resolved in favor of autonomy through the combined efforts of the child to exercise autonomy and of the caregiver to support the child's efforts.

Eventually, about the time a child is of preschool age, the autonomy exercised during the previous period becomes more elaborate, extended, and focused on objects and people other than the child and basic physical needs. The child at a day care center may now undertake, for example, to build the "biggest city in the

world" out of all available unit blocks—even if other children want some of the blocks for themselves. The child's projects and desires create a new crisis of **initiative and guilt**, because the child soon realizes that acting on impulses or desires can sometimes have negative effects on others—more blocks for the child may mean fewer for someone else. As with the crisis over autonomy, caregivers have to support the child's initiatives where possible, but also not make the child feel guilty just for *desiring* to have or to do something that affects others' welfare. By limiting behavior where necessary but not limiting internal feelings, the child can develop a lasting ability to take initiative. Expressed in Erikson's terms, the crisis is then resolved in favor of initiative.

Even though only the last of these three crises overlaps with the school years, all three relate to issues faced by students of any age, and even by their teachers. A child or youth who is fundamentally mistrustful, for example, has a serious problem in coping with school life. If you are a student, it is essential for your long-term survival to believe that teachers and school officials have your best interests at heart, and that they are not imposing assignments or making rules, for example, "just for the heck of it." Even though students are not infants any more, teachers function like Erikson's caregiving parents in that they need to prove worthy of students' trust through their initial flexibility and attentiveness.

Parallels from the classroom also exist for the crises of autonomy and of initiative. To learn effectively, students need to make choices and undertake academic initiatives at least some of the time, even though not every choice or initiative may be practical or desirable. Teachers, for their part, need to make true choices and initiatives possible, and refrain from criticizing, even accidentally, a choice or intention behind an initiative even if the teacher privately believes that it is "bound to fail." Support for choices and initiative should be focused on providing resources and on guiding the student's efforts toward more likely success. In these ways teachers function like parents of toddlers and preschoolers in Erikson's theory of development, regardless of the age of their students

The crisis of childhood: industry and inferiority

Once into elementary school, the child is faced for the first time with becoming competent and worthy in the eyes of the world at large, or more precisely in the eyes of classmates and teachers. To achieve their esteem, he or she must develop skills that require effort that is sustained and somewhat focused. The challenge creates the crisis of **industry and inferiority**. To be respected by teachers, for example, the child must learn to read and to behave like a "true student." To be respected by peers, he or she must learn to cooperate and to be friendly, among other things. There are risks involved in working on these skills and qualities, because there can be no guarantee of success with them in advance. If the child does succeed, therefore, he or she experiences the satisfaction of a job well done and of skills well learned—a feeling that Eriks0n called *industry*. If not, however, the child risks feeling lasting *inferiority* compared to others. Teachers therefore have a direct, explicit role in helping students to resolve this crisis in favor of *industry* or success. They can set realistic academic goals for students—ones that tend to lead to success—and then provide materials and assistance for students to reach their goals. Teachers can also express their confidence that students can in fact meet their goals if and when the students get discouraged, and avoid hinting (even accidentally) that a student is simply a "loser." Paradoxically, these strategies will work best if the teacher is also tolerant of less-than-perfect performance by students. Too much emphasis on perfection can undermine some students' confidence—foster Erikson's *inferiority*—by making academic goals seem beyond reach.

The crisis of adolescence: identity and role confusion

As the child develops lasting talents and attitudes as a result of the crisis of industry, he begins to face a new question: what do all the talents and attitudes add up to be? Who is the "me" embedded in this profile of qualities? These questions are the crisis of **identity and role confusion**. Defining identity is riskier than it may appear for a person simply because some talents and attitudes may be poorly developed, and some even may be undesirable in the eyes of others. (If you are poor at math, how do you live with family and friends if they think you should be good at this skill?) Still others may be valuable but fail to be noticed by other people. The result is that who a person wants to be may not be the same as who he or she is in actual fact, nor the same as who other people want the person to be. In Erikson's terms, *role confusion* is the result.

Teachers can minimize role confusion in a number of ways. One is to offer students lots of diverse role models— by identifying models in students' reading materials, for example, or by inviting diverse guests to school. The point of these strategies would be to express a key idea: that there are many ways to be respected, successful, and satisfied with life. Another way to support students' identity development is to be alert to students' confusions about their futures, and refer them to counselors or other services outside school that can help sort these out. Still another strategy is to tolerate changes in students' goals and priorities—sudden changes in extra-curricular activities or in personal plans after graduation. Since students are still trying roles out, discouraging experimentation may not be in students' best interests.

The crises of adulthood: intimacy, generativity, and integrity

Beyond the school years, according to Erikson, individuals continue psychosocial development by facing additional crises. Young adults, for example, face a crisis of **intimacy and isolation**. This crisis is about the risk of establishing close relationships with a select number of others. Whether the relationships are heterosexual, homosexual, or not sexual at all, their defining qualities are depth and sustainability. Without them, an individual risks feeling isolated. Assuming that a person resolves this crisis in favor of intimacy, however, he or she then faces a crisis about **generativity and stagnation**. This crisis is characteristic of most of adulthood, and not surprisingly therefore is about caring for or making a contribution to society, and especially to its younger generation. Generativity is about making life productive and creative so that it matters to others. One obvious way for some to achieve this feeling is by raising children, but there are also many other ways to contribute to the welfare of others. The final crisis is about **integrity and despair**, and is characteristically felt during the final years of life. At the end of life, a person is likely to review the past and to ask whether it has been lived as well as possible, even if it was clearly not lived perfectly. Since personal history can no longer be altered at the end of life, it is important to make peace with what actually happened and to forgive oneself and others for mistakes that may have been made. The alternative is *despair*, or depression from believing not only that one's life was lived badly, but also that there is no longer any hope of correcting past mistakes.

Even though Erikson conceives of these crises as primarily concerns of adulthood, there are precursors of them during the school years. Intimacy, for example, is a concern of many children and youth in that they often desire, but do not always find, lasting relationships with others (Beidel, 2005; Zimbardo & Radl, 1999). Personal isolation is a particular risk for students with disabilities,

as well as for students whose cultural or racial backgrounds differ from classmates' or the teacher's. Generativity—feeling helpful to others and to the young—is needed not only by many adults, but also by many children and youth; when given the opportunity as part of their school program, they frequently welcome a chance to be of authentic service to others as part of their school programs (Eyler & Giles, 1999; Kay, 2003). Integrity—taking responsibility for your personal past, "warts and all," is often a felt need for anyone, young or old, who has lived long enough to have a past on which to look. Even children and youth have a past in this sense, though their pasts are of course shorter than persons who are older.

Abraham Maslow: a hierarchy of motives and needs

Abraham Maslow's theory frames personal needs or motives as a hierarchy, meaning that basic or "lower-level" needs have to be satisfied before higher-level needs become important or motivating (1976, 1987). Compared to the stage models of Piaget and Erikson, Maslow's hierarchy is only loosely "developmental," in that Maslow was not concerned with tracking universal, irreversible changes across the lifespan. Maslow's stages are universal, but they are not irreversible; earlier stages sometimes reappear later in life, in which case they must be satisfied again before later stages can redevelop. Like the theories of Piaget and Erikson, Maslow's is a rather broad "story," one that has less to say about the effects of a person's culture, language, or economic level, than about what we all have in common.

In its original version, Maslow's theory distinguishes two types of needs, called **deficit needs** and **being needs** (or sometimes **deficiency needs** and **growth needs**). Table 2 summarizes the two levels and their sublevels. Deficit needs are prior to being needs, not in the sense of happening earlier in life, but in that deficit

needs must be satisfied before being needs can be addressed. As pointed out, deficit needs can reappear at any age, depending on circumstances. If that happens, they must be satisfied again before a person's attention can shift back to "higher" needs. Among students, in fact, deficit needs are likely to return chronically to those whose families lack economic or social resources or who live with the stresses associated with poverty (Payne, 2005).

Table 2: Maslow's hierarchy of motives and needs

Deficit needs	**Being Needs**
Physiological needs	Cognitive needs
Safety and security needs	Aesthetic needs
Love and belonging needs	Self-actualization needs

Deficit needs: getting the basic necessities of life

Deficit needs are the basic requirements of physical and emotional well-being. First are **physiological needs**—food, sleep, clothing, and the like. Without these, nothing else matters, and especially nothing very "elevated" or self-fulfilling. A student who is not getting enough to eat is not going to feel much interest in learning! Once physiological needs are met, however, **safety and security needs** become important. The person looks for stability and protection, and welcomes a bit of structure and limits if they provide these conditions. A child from an abusive family, for example, may be getting enough to eat, but may worry chronically about personal safety. In school, the student may appreciate a well-organized classroom with rules that insures personal safety and predictability, whether or not the classroom provides much in the way of real learning.

After physiological and safety needs are met, **love and belonging needs** emerge. The person turns attention to making friends, being

a friend, and cultivating positive personal relationships in general. In the classroom, a student motivated at this level may make approval from peers or teachers into a top priority. He or she may be provided for materially and find the classroom and family life safe enough, but still miss a key ingredient in life— love. If such a student (or anyone else) eventually does find love and belonging, however, then his or her motivation shifts again, this time to **esteem needs**. Now the concern is with gaining recognition and respect—and even more importantly, gaining self-respect. A student at this level may be unusually concerned with achievement, for example, though only if the achievement is visible or public enough to earn public recognition.

Being needs: becoming the best that you can be

Being needs are desires to become fulfilled as a person, or to be the best person that you can possibly be. They include **cognitive needs** (a desire for knowledge and understanding), **aesthetic needs** (an appreciation of beauty and order), and most importantly, **self-actualization needs** (a desire for fulfillment of one's potential). Being needs emerge only after all of a person's deficit needs have been largely met. Unlike deficit needs, being needs beget more being needs; they do not disappear once they are met, but create a desire for even more satisfaction of the same type. A thirst for knowledge, for example, leads to further thirst for knowledge, and aesthetic appreciation leads to more aesthetic appreciation. Partly because being needs are lasting and permanent once they appear, Maslow sometimes treated them as less hierarchical than deficit needs, and instead grouped cognitive, aesthetic, and self-actualization needs into the single category **self-actualization needs**.

People who are motivated by self-actualization have a variety of positive qualities, which Maslow went to some lengths to identify and describe (Maslow, 1976). Self-actualizing individuals, he argued,

value deep personal relationships with others, but also value solitude; they have a sense of humor, but do not use it against others; they accept themselves as well as others; they are spontaneous, humble, creative, and ethical. In short, the self-actualizing person has just about every good quality imaginable! Not surprisingly, therefore, Maslow felt that true self-actualization is rare. It is especially unusual among young people, who have not yet lived long enough to satisfy earlier, deficit-based needs.

In a way this last point is discouraging news for teachers, who apparently must spend their lives providing as best they can for individuals—students—still immersed in deficit needs. Teachers, it seems, have little hope of ever meeting a student with fully fledged being needs. Taken less literally, though, Maslow's hierarchy is still useful for thinking about students' motives. Most teachers would argue that students—young though they are—*can* display positive qualities similar to the ones described in Maslow's self-actualizing person. However annoying students may sometimes be, there are also moments when they show care and respect for others, for example, and moments when they show spontaneity, humility, or a sound ethical sense. Self-actualization is an appropriate way to think about these moments—the times when students are at their best. At the same time, of course, students sometimes also have deficit needs. Keeping in mind the entire hierarchy outlined by Maslow can therefore deepen teachers' understanding of the full humanity of students

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30. Kohlberg's Stages of Moral Development

Moral Development: Forming a Sense of Rights and Responsibilities

Morality is a system of beliefs about what is right and good compared to what is wrong or bad. **Moral development** refers to changes in moral beliefs as a person grows older and gains maturity. Moral beliefs are related to, but not identical with, moral *behavior*: it is possible to know the right thing to do, but not actually do it. It is also not the same as knowledge of *social conventions*, which are arbitrary customs needed for the smooth operation of society. Social conventions may have a moral element, but they have a primarily practical purpose. Conventionally, for example, motor vehicles all keep to the same side of the street (to the right in the United States, to the left in Great Britain). The convention allows for smooth, accident-free flow of traffic. But following the convention also has a moral element, because an individual who chooses to drive on the wrong side of the street can cause injuries or even death. In this sense, choosing the wrong side of the street is wrong morally, though the choice is also unconventional.

When it comes to schooling and teaching, moral choices are not restricted to occasional dramatic incidents, but are woven into almost every aspect of classroom life. Imagine this simple example. Suppose that you are teaching, reading to a small group of second-graders, and the students are taking turns reading a story out loud. Should you give every student the same amount of time to read, even though some might benefit from having additional time? Or should you give more time to the students who need extra help, even if doing so bores classmates and deprives others of equal

shares of "floor time"? Which option is more fair, and which is more considerate? Simple dilemmas like this happen every day at all grade levels simply because students are diverse, and because class time and a teacher's energy are finite.

Embedded in this rather ordinary example are moral themes about fairness or justice, on the one hand, and about consideration or care on the other. It is important to keep both themes in mind when thinking about how students develop beliefs about right or wrong. A **morality of justice** is about human rights—or more specifically, about respect for fairness, impartiality, equality, and individuals' independence. A **morality of care**, on the other hand, is about human responsibilities—more specifically, about caring for others, showing consideration for individuals' needs, and interdependence among individuals. Students and teachers need both forms of morality. In the next sections therefore we explain a major example of each type of developmental theory, beginning with the morality of justice.

Kohlberg's morality of justice

One of the best-known explanations of how morality of justice develops was developed by Lawrence Kohlberg and his associates (Kohlberg, Levine, & Hewer, 1983; Power, Higgins, & Kohlberg, 1991). Using a stage model similar to Piaget's, Kohlberg proposed six stages of moral development, grouped into three levels. Individuals experience the stages universally and in sequence as they form beliefs about justice. He named the levels simply preconventional, conventional, and (you guessed it) postconventional. The levels and stages are summarized in Table 1.

Table 1: Moral stages according to Kohlberg	
Moral stage	**Definition of what is "good"**
Preconventional Level	
Stage 1: Obedience and punishment	Action that is rewarded and *not* punished
Stage 2: Market exchange	Action that is agreeable to the child and child's partner
Conventional Level	
Stage 3: Peer opinion	Action that wins approval from friends or peers
Stage 4: Law and order	Action that conforms to the community customs or laws
Postconventional Level	
Stage 5: Social contract	Action that follows socially accepted ways of making decisions
Stage 6: Universal principles	Action that is consistent with self-chosen, general principles

Preconventional justice: obedience and mutual advantage

The *preconventional* level of moral development coincides approximately with the preschool period of life and with Piaget's preoperational period of thinking. At this age the child is still relatively self-centered and insensitive to the moral effects of actions on others. The result is a somewhat short-sighted orientation to morality. Initially (Kohlberg's Stage 1), the child adopts an **ethics of obedience and punishment**—a sort of "morality of keeping out of trouble." The rightness and wrongness of actions is determined by whether actions are rewarded or punished by authorities such as parents or teachers. If helping yourself to a cookie brings affectionate smiles from adults, then taking the cookie is considered morally "good." If it brings scolding instead, then it is

morally "bad." The child does not think about why an action might be praised or scolded; in fact, says Kohlberg, he would be incapable at Stage 1 of considering the reasons even if adults offered them.

Eventually the child learns not only to respond to positive consequences, but also learns how to *produce* them by exchanging favors with others. The new ability creates Stage 2, an **ethics of market exchange**. At this stage the morally "good" action is one that favors not only the child, but another person directly involved. A "bad" action is one that lacks this reciprocity. If trading the sandwich from your lunch for the cookies in your friend's lunch is mutually agreeable, then the trade is morally good; otherwise it is not. This perspective introduces a type of fairness into the child's thinking for the first time. But it still ignores the larger context of actions—the effects on people not present or directly involved. In Stage 2, for example, it would also be considered morally "good" to pay a classmate to do another student's homework—or even to avoid bullying or to provide sexual favors—provided that both parties regard the arrangement as being fair.

Conventional justice: conformity to peers and society

As children move into the school years, their lives expand to include a larger number and range of peers and (eventually) of the community as a whole. The change leads to *conventional morality*, which are beliefs based on what this larger array of people agree on—hence Kohlberg's use of the term "conventional." At first, in Stage 3, the child's reference group are immediate peers, so Stage 3 is sometimes called the **ethics of peer opinion**. If peers believe, for example, that it is morally good to behave politely with as many people as possible, then the child is likely to agree with the group and to regard politeness as not merely an arbitrary social convention, but a moral "good." This approach to moral belief is a bit

more stable than the approach in Stage 2, because the child is taking into account the reactions not just of one other person, but of many. But it can still lead astray if the group settles on beliefs that adults consider morally wrong, like "Shop lifting for candy bars is fun and desirable."

Eventually, as the child becomes a youth and the social world expands even more, he or she acquires even larger numbers of peers and friends. He or she is therefore more likely to encounter disagreements about ethical issues and beliefs. Resolving the complexities lead to Stage 4, the **ethics of law and order**, in which the young person increasingly frames moral beliefs in terms of what the majority of society believes. Now, an action is morally good if it is legal or at least customarily approved by most people, including people whom the youth does not know personally. This attitude leads to an even more stable set of principles than in the previous stage, though it is still not immune from ethical mistakes. A community or society may agree, for example, that people of a certain race should be treated with deliberate disrespect, or that a factory owner is entitled to dump waste water into a commonly shared lake or river. To develop ethical principles that reliably avoid mistakes like these require further stages of moral development.

Postconventional justice: social contract and universal principles

As a person becomes able to think abstractly (or "formally," in Piaget's sense), ethical beliefs shift from acceptance of what the community *does* believe to the *process* by which community beliefs are formed. The new focus constitutes Stage 5, the **ethics of social contract**. Now an action, belief, or practice is morally good if it has been created through fair, democratic processes that respect the rights of the people affected. Consider, for example, the laws in some areas that require motorcyclists to wear helmets. In what

sense are the laws about this behavior ethical? Was it created by consulting with and gaining the consent of the relevant people? Were cyclists consulted and did they give consent? Or how about doctors or the cyclists' families? Reasonable, thoughtful individuals disagree about how thoroughly and fairly these *consultation* processes should be. In focusing on the processes by which the law was created, however, individuals are thinking according to Stage 5, the ethics of social contract, regardless of the position they take about wearing helmets. In this sense, beliefs on both sides of a debate about an issue can sometimes be morally sound even if they contradict each other.

Paying attention to due process certainly seems like it should help to avoid mindless conformity to conventional moral beliefs. As an ethical strategy, though, it too can sometimes fail. The problem is that an ethics of social contract places more faith in democratic process than the process sometimes deserves, and does not pay enough attention to the content of what gets decided. In principle (and occasionally in practice), a society could decide democratically to kill off every member of a racial minority, for example, but would deciding this by due process make it ethical? The realization that ethical means can sometimes serve unethical ends leads some individuals toward Stage 6, the **ethics of self-chosen, universal principles**. At this final stage, the morally good action is based on personally held principles that apply both to the person's immediate life as well as to the larger community and society. The universal principles may include a belief in democratic due process (Stage 5 ethics), but also other principles, such as a belief in the dignity of all human life or the sacredness of the natural environment. At Stage 6, the universal principles will guide a person's beliefs even if the principles mean disagreeing occasionally with what is customary (Stage 4) or even with what is legal (Stage 5).

Gilligan's morality of care

As logical as they sound, Kohlberg's stages of moral justice are not sufficient for understanding the development of moral beliefs. To see why, suppose that you have a student who asks for an extension of the deadline for an assignment. The justice orientation of Kohlberg's theory would prompt you to consider issues of whether granting the request is fair. Would the late student be able to put more effort into the assignment than other students? Would the extension place a difficult demand on you, since you would have less time to mark the assignments? These are important considerations related to the rights of students and the teacher. In addition to these, however, are considerations having to do with the responsibilities that you and the requesting student have for each other and for others. Does the student have a valid personal reason (illness, death in the family, etc.) for the assignment being late? Will the assignment lose its educational value if the student has to turn it in prematurely? These latter questions have less to do with fairness and rights, and more to do with taking care of and responsibility for students. They require a framework different from Kohlberg's to be understood fully.

One such framework has been developed by Carol Gilligan, whose ideas center on a **morality of care**, or system of beliefs about human responsibilities, care, and consideration for others. Gilligan proposed three moral positions that represent different extents or breadth of ethical care. Unlike Kohlberg, Piaget, or Erikson, she does not claim that the positions form a strictly developmental sequence, but only that they can be ranked hierarchically according to their depth or subtlety. In this respect her theory is "semi-developmental" in a way similar to Maslow's theory of motivation (Brown & Gilligan, 1992; Taylor, Gilligan, & Sullivan, 1995). Table 2 summarizes the three moral positions from Gilligan's theory

Table 2: Positions of moral development according to Gilligan	
Moral position	**Definition of what is morally good**
Position 1: Survival orientation	Action that considers one's personal needs only
Position 2: Conventional care	Action that considers others' needs or preferences, but not one's own
Position 3: Integrated care	Action that attempts to coordinate one's own personal needs with those of others

Position 1: caring as survival

The most basic kind of caring is a **survival orientation**, in which a person is concerned primarily with his or her own welfare. If a teenage girl with this ethical position is wondering whether to get an abortion, for example, she will be concerned entirely with the effects of the abortion on herself. The morally good choice will be whatever creates the least stress for herself and that disrupts her own life the least. Responsibilities to others (the baby, the father, or her family) play little or no part in her thinking.

As a moral position, a survival orientation is obviously not satisfactory for classrooms on a widespread scale. If every student only looked out for himself or herself, classroom life might become rather unpleasant! Nonetheless, there are situations in which focusing primarily on yourself is both a sign of good mental health and relevant to teachers. For a child who has been bullied at school or sexually abused at home, for example, it is both healthy and morally desirable to speak out about how bullying or abuse has affected the victim. Doing so means essentially looking out for the victim's own needs at the expense of others' needs, including the bully's or abuser's. Speaking out, in this case, requires a survival orientation and is healthy because the child is taking caring of herself.

Position 2: conventional caring

A more subtle moral position is **caring for others**, in which a person is concerned about others' happiness and welfare, and about reconciling or integrating others' needs where they conflict with each other. In considering an abortion, for example, the teenager at this position would think primarily about what other people prefer. Do the father, her parents, and/or her doctor want her to keep the child? The morally good choice becomes whatever will please others the best. This position is more demanding than Position 1, ethically and intellectually, because it requires coordinating several persons' needs and values. But it is often morally insufficient because it ignores one crucial person: the self.

In classrooms, students who operate from Position 2 can be very desirable in some ways; they can be eager to please, considerate, and good at fitting in and at working cooperatively with others. Because these qualities are usually welcome in a busy classroom, teachers can be tempted to reward students for developing and using them. The problem with rewarding Position 2 ethics, however, is that doing so neglects the student's development—his or her own academic and personal goals or values. Sooner or later, personal goals, values, and identity need attention and care, and educators have a responsibility for assisting students to discover and clarify them.

Position 3: integrated caring

The most developed form of moral caring in Gilligan's model is **integrated caring**, the coordination of personal needs and values with those of others. Now the morally good choice takes account of everyone *including* yourself, not everyone *except* yourself. In considering an abortion, a woman at Position 3 would think not

only about the consequences for the father, the unborn child, and her family, but also about the consequences for herself. How would bearing a child affect her own needs, values, and plans? This perspective leads to moral beliefs that are more comprehensive, but ironically are also more prone to dilemmas because the widest possible range of individuals are being considered.

In classrooms, integrated caring is most likely to surface whenever teachers give students wide, sustained freedom to make choices. If students have little flexibility about their actions, there is little room for considering *anyone's* needs or values, whether their own or others'. If the teacher says simply: "Do the homework on page 50 and turn it in tomorrow morning," then the main issue becomes compliance, not moral choice. But suppose instead that she says something like this: "Over the next two months, figure out an inquiry project about the use of water resources in our town. Organize it any way you want—talk to people, read widely about it, and share it with the class in a way that all of us, including yourself, will find meaningful." An assignment like this poses moral challenges that are not only educational, but also moral, since it requires students to make value judgments. Why? For one thing, students must decide what aspect of the topic really matters to them. Such a decision is partly a matter of personal values. For another thing, students have to consider how to make the topic meaningful or important to *others* in the class. Third, because the time line for completion is relatively far in the future, students may have to weigh personal priorities (like spending time with friends or family) against educational priorities (working on the assignment a bit more on the weekend). As you might suspect, some students might have trouble making good choices when given this sort of freedom—and their teachers might therefore be cautious about giving such an assignment. But the difficulties in making choices are part of Gilligan's point: integrated caring is indeed more demanding than the caring based only on survival or on consideration of others. Not all students may be ready for it.

Character development: Integrating ethical understanding, care, and action

The theories described so far all offer frameworks for understanding how children grow into youth and adults. Those by Maslow, Kohlberg, and Gilligan are more specific than the one by Erikson in that they focus on the development of understanding about ethics. From a teacher's point of view, though, the theories are all limited in two ways. One problem is that they focus primarily on cognition—on what children *think* about ethical issues—more than on emotions and actions. The other is that they say little about how to encourage ethical development. Encouragement is part of teachers' jobs, and doing it well requires understanding not only what students know about ethics, but also how they feel about it and what ethical actions they are actually prepared to take.

Many educators have recognized these educational needs, and a number of them have therefore developed practical programs that integrate ethical understanding, care, and action. As a group the programs are often called **character education**, though individual programs have a variety of specific names (for example, *moral dilemma education*, *integrative ethical education*, *social competence education*, and many more). Details of the programs vary, but they all combine a focus on ethical knowledge with attention to ethical feelings and actions (Elkind & Sweet, 2004; Berkowitz & Bier, 2006; Narvaez, 2010). Character education programs goes well beyond just teaching students to obey ethical rules, such as "Always tell the whole truth" or "Always do what the teacher tells you to do." Such rules require very little thinking on the part of the student, and there are usually occasions in which a rule that is supposedly universal needs to be modified, "bent," or even disobeyed. (For example, if telling the whole truth might hurt someone's feelings, it might sometimes be more considerate—and thus more ethical—to soften the truth a bit, or even to say nothing at all.)

Instead, character education is about inviting students to think

about the broad questions of his or her life, such as "What kind of person should I be?" or "How should I live my life?" Thoughtful answers to such broad questions help to answer a host of more specific questions that have ethical implications, such as "Should I listen to the teacher right now, even if she is a bit boring, or just tune out?" or "Should I offer to help my friend with the homework she is struggling with, or hold back so that learns to do it herself?" Most of the time, there is not enough time to reason about questions like these deliberately or consciously. Responses have to become intuitive, automatic, and *embodied*—meaning that they have to be based in fairly immediate emotional responses (Narvaez, 2009). The goal of character education is to develop students' capacities to respond to daily ethical choices not only consciously and cognitively, but also intuitively and emotionally. To the extent that this goal is met, students can indeed live a good, ethically responsible life.

Schoolwide programs of character education

In the most comprehensive approaches to character education, an entire school commits itself to developing students' ethical character, despite the immense diversity among students (Minow, Schweder, & Markus, 2008). All members of the staff—not just teachers and administrators, but also custodians, and educational assistants—focus on developing positive relationships with students. The underlying theme that develops is one of cooperation and mutual care, not competition. Fairness, respect and honesty pervade class and school activities; discipline, for example, focuses on solving conflicts between students and between students and teachers, rather than on rewarding obediance or punishing wrong-doers. The approach requires significant reliance on democratic meetings and discussions, both in classrooms and wherever else groups work together in school.

Classroom programs of character education

Even if a teacher is teaching character education simply within her own classroom, there are many strategies available. The goal in this case is to establish the classroom as a place where everyone feels included, and where everyone treats everyone else with civility and respect. Conflicts and disagreements may still occur, but in a caring community they can be resolved without undue anger or hostility. Here are a few ways to work toward this sort of classroom:

- Use class meetings to decide on as many important matters as possible—such as the expected rules of behavior, important classroom activities, or ongoing disagreements.
- Try arranging for students to collaborate on significant projects and tasks.
- Arrange a "Buddies" program in which students of different grade levels work together on a significant task. Older students can sometimes assist younger students by reading to them, by listening to them read, or both. If an older student is having trouble with reading himself or herself, furthermore, a reading buddies program can sometimes also be helpful to the older student.
- Familiarize students with conflict resolution strategies, and practice using them when needed.
- Many areas of curriculum lend themselves to discussions about ethical issues. Obvious examples are certain novels, short stories, and historical events. But ethical issues lurk elsewhere as well. Teaching nutrition, for example, can raise issues about the humane treatment of animals that will be slaughtered for food, and about the ethical acceptability of using large amount of grains to feed animals even though many people in the world do not have enough to eat.
- Service learning projects can be very helpful in highlighting issues of social justice. Planning, working at and reflecting

about a local soup kitchen, tutoring students from low-income families, performing simple repairs on homes in need: projects like these broaden knowledge of society and of the needs of its citizens.

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31. Major theories and models of learning

Several ideas and priorities, then, affect how we teachers think about learning, including the curriculum, the difference between teaching and learning, sequencing, readiness, and transfer. The ideas form a "screen" through which to understand and evaluate whatever psychology has to offer education. As it turns out, many theories, concepts, and ideas from educational psychology do make it through the "screen" of education, meaning that they are consistent with the professional priorities of teachers and helpful in solving important problems of classroom teaching. In the case of issues about classroom learning, for example, educational psychologists have developed a number of theories and concepts that are relevant to classrooms, in that they describe at least *some* of what usually happens there and offer guidance for assisting learning. It is helpful to group the theories according to whether they focus on changes in behavior or in thinking. The distinction is rough and inexact, but a good place to begin. For starters, therefore, consider two perspectives about learning, called behaviorism (learning as changes in overt behavior) and constructivism, (learning as changes in thinking). The second category can be further divided into psychological constructivism (changes in thinking resulting from individual experiences), and social constructivism, (changes in thinking due to assistance from others). The rest of this chapter describes key ideas from each of these viewpoints. As I hope you will see, each describes some aspects of learning not just in general, but as it happens in classrooms in particular. So each perspective suggests things that *you* might do in *your* classroom to make students' learning more productive.

Behaviorism: changes in what students do

Behaviorism is a perspective on learning that focuses on changes in individuals' observable behaviors— changes in what people say or do. At some point we all use this perspective, whether we call it "behaviorism" or something else. The first time that I drove a car, for example, I was concerned primarily with whether I could actually do the driving, not with whether I could describe or explain how to drive. For another example: when I reached the point in life where I began cooking meals for myself, I was more focused on whether I could actually produce edible food in a kitchen than with whether I could explain my recipes and cooking procedures to others. And still another example—one often relevant to new teachers: when I began my first year of teaching, I was more focused on doing the job of teaching—on day-to-day survival—than on pausing to reflect on what I was doing.

Note that in all of these examples, focusing attention on behavior instead of on "thoughts" may have been desirable at that moment, but not necessarily desirable indefinitely or all of the time. Even as a beginner, there are times when it is more important to be able to describe how to drive or to cook than to actually do these things. And there definitely are many times when reflecting on and thinking about teaching can improve teaching itself. (As a teacher-friend once said to me: "Don't just *do* something; *stand* there!") But neither is focusing on behavior which is not necessarily less desirable than focusing on students' "inner" changes, such as gains in their knowledge or their personal attitudes. If you are teaching, you will need to attend to all forms of learning in students, whether inner or outward.

In classrooms, behaviorism is most useful for identifying relationships between specific actions by a student and the immediate precursors and consequences of the actions. It is less useful for understanding changes in students' thinking; for this purpose we need theories that are more *cognitive* (or thinking-

oriented) or social, like the ones described later in this chapter. This fact is not a criticism of behaviorism as a perspective, but just a clarification of its particular strength or usefulness, which is to highlight observable relationships among actions, precursors and consequences. Behaviorists use particular terms (or "lingo," some might say) for these relationships. One variety of behaviorism that has proved especially useful to educators is operant conditioning, described in the next section.

Operant conditioning: new behaviors because of new consequences

Operant conditioning focuses on how the consequences of a behavior affect the behavior over time. It begins with the idea that certain consequences tend to make certain behaviors happen more frequently. If I compliment a student for a good comment made during discussion, there is more of a chance that I will hear further comments from the student in the future (and hopefully they too will be good ones!). If a student tells a joke to classmates and they laugh at it, then the student is likely to tell more jokes in the future and so on.

The original research about this model of learning was not done with people, but with animals. One of the pioneers in the field was a Harvard professor named B. F. Skinner, who published numerous books and articles about the details of the process and who pointed out many parallels between operant conditioning in animals and operant conditioning in humans (1938, 1948, 1988). Skinner observed the behavior of rather tame laboratory rats (not the unpleasant kind that sometimes live in garbage dumps). He or his assistants would put them in a cage that contained little except a lever and a small tray just big enough to hold a small amount of food. (Figure 1 shows the basic set-up, which is sometimes nicknamed a "Skinner box.") At first the rat would sniff and "putter around"

the cage at random, but sooner or later it would happen upon the lever and eventually happen to press it. Presto! The lever released a small pellet of food, which the rat would promptly eat. Gradually the rat would spend more time near the lever and press the lever more frequently, getting food more frequently. Eventually it would spend most of its time at the lever and eating its fill of food. The rat had "discovered" that the consequence of pressing the level was to receive food. Skinner called the changes in the rat's behavior an example of **operant conditioning**, and gave special names to the different parts of the process. He called the food pellets the **reinforcement** and the lever-pressing the **operant** (because it "operated" on the rat's environment). See below.

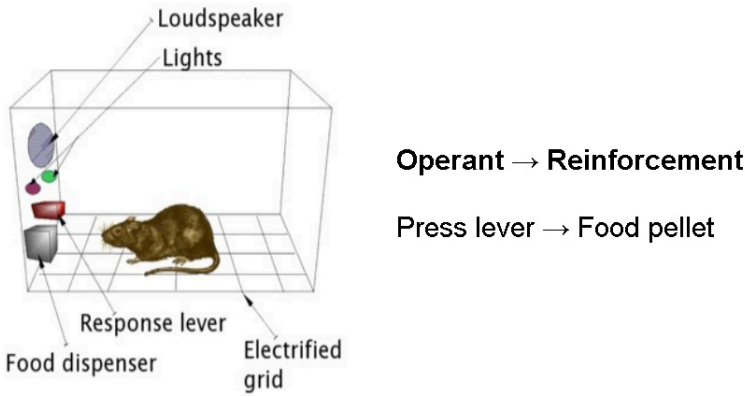

Figure 1: Operant conditioning with a laboratory rat

Skinner and other behavioral psychologists experimented with using various reinforcers and operants. They also experimented with various patterns of reinforcement (or **schedules of reinforcement**), as well as with various **cues** or signals to the animal about when reinforcement was available. It turned out that all of these factors—the operant, the reinforcement, the schedule, and the cues—affected how easily and thoroughly operant conditioning occurred. For example, reinforcement was more effective if it came

immediately after the crucial operant behavior, rather than being delayed, and reinforcements that happened intermittently (only part of the time) caused learning to take longer, but also caused it to last longer.

Operant conditioning and students' learning: Since the original research about operant conditioning used animals, it is important to ask whether operant conditioning also describes learning in human beings, and especially in students in classrooms. On this point the answer seems to be clearly "yes." There are countless classroom examples of consequences affecting students' behavior in ways that resemble operant conditioning, although the process certainly does not account for all forms of student learning (Alberto & Troutman, 2005). Consider the following examples. In most of them the operant behavior tends to become more frequent on repeated occasions:

- A seventh-grade boy makes a silly face (the operant) at the girl sitting next to him. Classmates sitting around them giggle in response (the reinforcement).
- A kindergarten child raises her hand in response to the teacher's question about a story (the operant). The teacher calls on her and she makes her comment (the reinforcement).
- Another kindergarten child blurts out her comment without being called on (the operant). The teacher frowns, ignores this behavior, but before the teacher calls on a different student, classmates are listening attentively (the reinforcement) to the student even though he did not raise his hand as he should have.
- A twelfth-grade student—a member of the track team—runs one mile during practice (the operant). He notes the time it takes him as well as his increase in speed since joining the team (the reinforcement).
- A child who is usually very restless sits for five minutes doing an assignment (the operant). The teaching assistant compliments him for working hard (the reinforcement).

- A sixth-grader takes home a book from the classroom library to read overnight (the operant). When she returns the book the next morning, her teacher puts a gold star by her name on a chart posted in the room (the reinforcement).

These examples are enough to make several points about operant conditioning. First, the process is widespread in classrooms—probably more widespread than teachers realize. This fact makes sense, given the nature of public education: to a large extent, teaching is about making certain consequences (like praise or marks) depend on students' engaging in certain activities (like reading certain material or doing assignments). Second, learning by operant conditioning is not confined to any particular grade, subject area, or style of teaching, but by nature happens in every imaginable classroom. Third, teachers are not the only persons controlling reinforcements. Sometimes they are controlled by the activity itself (as in the track team example), or by classmates (as in the "giggling" example). This leads to the fourth point: that multiple examples of operant conditioning often happen at the same time. A case study in Appendix A of this book (*The decline and fall of Jane Gladstone*) suggests how this happened to someone completing student teaching.

Because operant conditioning happens so widely, its effects on motivation are a bit complex. Operant conditioning can encourage **intrinsic motivation**, to the extent that the reinforcement for an activity is the activity itself. When a student reads a book for the sheer enjoyment of reading, for example, he is reinforced by the reading itself, and we we can say that his reading is "intrinsically motivated." More often, however, operant conditioning stimulates *both* intrinsic *and* extrinsic motivation at the same time. The combining of both is noticeable in the examples in the previous paragraph. In each example, it is reasonable to assume that the student felt intrinsically motivated to some partial extent, even when reward came from outside the student as well. This was because *part* of what reinforced their behavior was the behavior

itself—whether it was making faces, running a mile, or contributing to a discussion. At the same time, though, note that each student probably was also **extrinsically motivated**, meaning that another part of the reinforcement came from consequences or experiences *not* inherently part of the activity or behavior itself. The boy who made a face was reinforced not only by the pleasure of making a face, for example, but *also* by the giggles of classmates. The track student was reinforced not only by the pleasure of running itself, but *also* by knowledge of his improved times and speeds. Even the usually restless child sitting still for five minutes may have been reinforced partly by this brief experience of unusually focused activity, even if he was *also* reinforced by the teacher aide's compliment. Note that the extrinsic part of the reinforcement may sometimes be more easily observed or noticed than the intrinsic part, which by definition may sometimes only be experienced within the individual and not also displayed outwardly. This latter fact may contribute to an impression that sometimes occurs, that operant conditioning is really just "bribery in disguise," that only the *external* reinforcements operate on students' behavior. It is true that external reinforcement may sometimes alter the nature or strength of internal (or intrinsic) reinforcement, but this is not the same as saying that it destroys or replaces intrinsic reinforcement. But more about this issue later!

Key concepts about operant conditioning: Operant conditioning is made more complicated, but also more realistic, by several additional ideas. They can be confusing because the ideas have names that sound rather ordinary, but that have special meanings with the framework of operant theory. Among the most important concepts to understand are the following:

- extinction
- generalization
- discrimination
- schedules of reinforcement
- cues

The paragraphs below explain each of these briefly, as well as their relevance to classroom teaching and learning.

Extinction refers to the disappearance of an *operant behavior* because of lack of reinforcement. A student who stops receiving gold stars or compliments for prolific reading of library books, for example, may extinguish (i.e. decrease or stop) book-reading behavior. A student who used to be reinforced for acting like a clown in class may stop clowning once classmates stop paying attention to the antics.

Generalization refers to the incidental conditioning of behaviors similar to an original *operant*. If a student gets gold stars for reading library books, then we may find her reading more of other material as well—newspapers, comics, etc.–even if the activity is not reinforced directly. The "spread" of the new behavior to similar behaviors is called generalization. Generalization is a lot like the concept of transfer discussed early in this chapter, in that it is about extending prior learning to new situations or contexts. From the perspective of operant conditioning, though, what is being extended (or "transferred" or generalized) is a behavior, not knowledge or skill.

Discrimination means learning **not** to generalize. In operant conditioning, what is **not** overgeneralized (i.e. what is discriminated) is the operant behavior. If I am a student who is being complimented (reinforced) for contributing to discussions, I must also learn to discriminate when to make verbal contributions from when not to make them—such as when classmates or the teacher are busy with other tasks. Discrimination learning usually results from the combined effects of reinforcement of the target behavior and extinction of similar generalized behaviors. In a classroom, for example, a teacher might praise a student for speaking during discussion, but ignore him for making very similar remarks out of turn. In operant conditioning, the **schedule of reinforcement** refers to the pattern or frequency by which reinforcement is linked with the operant. If a teacher praises me for my work, does she do it every time, or only sometimes? Frequently or only once in awhile?

In respondent conditioning, however, the schedule in question is the pattern by which the conditioned stimulus is paired with the unconditioned stimulus. If I am student with Mr Horrible as my teacher, does he scowl every time he is in the classroom, or only sometimes? Frequently or rarely?

Behavioral psychologists have studied schedules of reinforcement extensively (for example, Ferster, et al., 1997; Mazur, 2005), and found a number of interesting effects of different schedules. For teachers, however, the most important finding may be this: partial or intermittent schedules of reinforcement generally cause learning to take longer, but also cause extinction of learning to take longer. This dual principle is important for teachers because so much of the reinforcement we give is partial or intermittent. Typically, if I am teaching, I can compliment a student a lot of the time, for example, but there will inevitably be occasions when I cannot do so because I am busy elsewhere in the classroom. For teachers concerned both about motivating students and about minimizing inappropriate behaviors, this is both good news and bad. The good news is that the benefits of my praising students' constructive behavior will be more lasting, because they will not extinguish their constructive behaviors immediately if I fail to support them every single time they happen. The bad news is that students' negative behaviors may take longer to extinguish as well, because those too may have developed through partial reinforcement. A student who clowns around inappropriately in class, for example, may not be "supported" by classmates' laughter every time it happens, but only some of the time. Once the inappropriate behavior is learned, though, it will take somewhat longer to disappear even if everyone—both teacher and classmates—make a concerted effort to ignore (or extinguish) it.

Finally, behavioral psychologists have studied the effects of **cues**. In operant conditioning, a cue is a stimulus that happens just prior to the operant behavior and that signals that performing the behavior may lead to reinforcement. In the original conditioning experiments, Skinner's rats were sometimes cued by the presence

or absence of a small electric light in their cage. Reinforcement was associated with pressing a lever when, and only when, the light was on. In classrooms, cues are sometimes provided by the teacher deliberately, and sometimes simply by the established routines of the class. Calling on a student to speak, for example, can be a cue that *if* the student *does* say something at that moment, then he or she *may* be reinforced with praise or acknowledgment. But if that cue does *not* occur—if the student is *not* called on—speaking may *not* be rewarded. In more everyday, non-behaviorist terms, the cue allows the student to learn when it is acceptable to speak, and when it is not.

Constructivism: changes in how students think

Behaviorist models of learning may be helpful in understanding and influencing what students do, but teachers usually also want to know what students are *thinking*, and how to enrich what students are thinking. For this goal of teaching, some of the best help comes from **constructivism**, which is a perspective on learning focused on how students actively create (or "construct") knowledge out of experiences. Constructivist models of learning differ about how much a learner constructs knowledge independently, compared to how much he or she takes cues from people who may be more of an expert and who help the learner's efforts (Fosnot, 2005; Rockmore, 2005). For convenience these are called **psychological constructivism** and **social constructivism** (or sometimes **sociocultural theory**). As explained in the next section, both focus on individuals' thinking rather than their behavior, but they have distinctly different implications for teaching.

Psychological constructivism: the independent

investigator

The main idea of psychological constructivism is that a person learns by mentally organizing and reorganizing new information or experiences. The organization happens partly by relating new experiences to prior knowledge that is already meaningful and well understood. Stated in this general form, individual constructivism is sometimes associated with a well-known educational philosopher of the early twentieth century, **John Dewey** (1938–1998). Although Dewey himself did not use the term constructivism in most of his writing, his point of view amounted to a type of constructivism, and he discussed in detail its implications for educators. He argued, for example, that if students indeed learn primarily by building their own knowledge, then teachers should adjust the curriculum to fit students' prior knowledge and interests as fully as possible. He also argued that a curriculum could only be justified if it related as fully as possible to the activities and responsibilities that students will probably have *later*, after leaving school. To many educators these days, his ideas may seem merely like good common sense, but they were indeed innovative and progressive at the beginning of the twentieth century.

Another recent example of psychological constructivism is the cognitive theory of **Jean Piaget** (Piaget, 2001; Gruber & Voneche, 1995). Piaget described learning as interplay between two mental activities that he called *assimilation* and *accommodation*. **Assimilation** is the interpretation of new information in terms of pre-existing concepts, information or ideas. A preschool child who already understands the concept of *bird*, for example, might initially label any flying object with this term—even butterflies or mosquitoes. Assimilation is therefore a bit like the idea of *generalization* in operant conditioning, or the idea of *transfer* described at the beginning of this chapter. In Piaget's viewpoint, though, what is being transferred to a new setting is not simply a

behavior (Skinner's "operant" in operant conditioning), but a mental representation for an object or experience.

Assimilation operates jointly with **accommodation**, which is the revision or modification of pre-existing concepts in terms of new information or experience. The preschooler who initially generalizes the concept of *bird* to include any flying object, for example, eventually revises the concept to include only particular kinds of flying objects, such as robins and sparrows, and not others, like mosquitoes or airplanes. For Piaget, assimilation and accommodation work together to enrich a child's thinking and to create what Piaget called **cognitive equilibrium**, which is a balance between reliance on prior information and openness to new information. At any given time, cognitive equilibrium consists of an ever-growing repertoire of mental representations for objects and experiences. Piaget called each mental representation a **schema** (all of them together—the plural—were called **schemata**). A schema was not merely a concept, but an elaborated mixture of vocabulary, actions, and experience related to the concept. A child's schema for *bird*, for example, includes not only the relevant verbal knowledge (like knowing how to define the word "bird"), but also the child's experiences with birds, pictures of birds, and conversations about birds. As assimilation and accommodation about birds and other flying objects operate together over time, the child does not just revise and add to his vocabulary (such as acquiring a new word, "butterfly"), but also adds and remembers relevant new experiences and actions. From these collective revisions and additions the child gradually constructs whole new schemata about birds, butterflies, and other flying objects. In more everyday (but also less precise) terms, Piaget might then say that "the child has learned more about birds."

Exhibit 1 diagrams the relationships among the Piagetian version of psychological constructivist learning. Note that the model of learning in the Exhibit is rather "individualistic," in the sense that it does not say much about how other people involved with the learner might assist in assimilating or accommodating information.

Parents and teachers, it would seem, are left lingering on the sidelines, with few significant responsibilities for helping learners to construct knowledge. But the Piagetian picture does nonetheless imply a role for helpful others: someone, after all, has to tell or model the vocabulary needed to talk about and compare birds from airplanes and butterflies! Piaget did recognize the importance of helpful others in his writings and theorizing, calling the process of support or assistance social *transmission*. But he did not emphasize this aspect of constructivism. Piaget was more interested in what children and youth could figure out on their own, so to speak, than in how teachers or parents might be able to help the young figure out (Salkind, 2004). Partly for this reason, his theory is often considered less about learning and more about *development*, or long-term change in a person resulting from multiple experiences that may not be planned deliberately. For the same reason, educators have often found Piaget's ideas especially helpful for thinking about students' *readiness* to learn, another one of the lasting educational issues discussed at the beginning of this chapter. We will therefore return to Piaget later to discuss development and its importance for teaching in more detail

Exhibit 1: Learning According to Piaget

Assimilation + Accommodation → Equilibrium → Schemata

Social Constructivism: assisted performance

Unlike Piaget's orientation to individuals' thinking in his version of constructivism, some psychologists and educators have explicitly focused on the relationships and interactions between a learner and other individuals who are more knowledgeable or experienced. This framework often is called **social constructivism** or **sociocultural theory**. An early expression of this viewpoint came from the American psychologist **Jerome Bruner** (1960, 1966, 1996), who became convinced that students could usually learn more than had been traditionally expected as long as they were given appropriate guidance and resources. He called such support **instructional scaffolding**—literally meaning a temporary framework like the ones used to construct buildings and that allow a much stronger structure to be built within it. In a comment that has been quoted widely (and sometimes disputed), Bruner wrote: "We [constructivist educators] begin with the hypothesis that any subject can be taught effectively in some intellectually honest form to any child at any stage of development." (1960, p. 33). The reason for such a bold assertion was Bruner's belief in scaffolding—his belief in the importance of providing guidance in the right way and at the right

time. When scaffolding is provided, students seem more competent and "intelligent," and they learn more.

Similar ideas were independently proposed by the Russian psychologist **Lev Vygotsky** (1978), whose writing focused on how a child's or novice's thinking is influenced by relationships with others who are more capable, knowledgeable, or expert than the learner. Vygotsky made the reasonable proposal that when a child (or novice) is learning a new skill or solving a new problem, he or she can perform better if accompanied and helped by an expert than if performing alone—though still not as well as the expert. Someone who has played very little chess, for example, will probably compete against an opponent better if helped by an expert chess player than if competing against the opponent alone. Vygotsky called the difference between solo performance and assisted performance the **zone of proximal development** (or **ZPD** for short)—meaning, figuratively speaking, the place or area of immediate change. From this social constructivist perspective, learning is like *assisted performance* (Tharp & Gallimore, 1991). During learning, knowledge or skill is found initially "in" the expert helper. If the expert is skilled and motivated to help, then the expert arranges experiences that let the novice to practice crucial skills or to construct new knowledge. In this regard the expert is a bit like the coach of an athlete—offering help and suggesting ways of practicing, but never doing the actual athletic work himself or herself. Gradually, by providing continued experiences matched to the novice learner's emerging competencies, the expert-coach makes it possible for the novice or apprentice to **appropriate** (or make his or her own) the skills or knowledge that originally resided only with the expert. These relationships are diagrammed in Exhibit 2.

Exhibit 2: Learning According to Vygotsky

Novice → Zone of Proximal Development (ZPD) ← Expert

In both the psychological and social versions of constructivist learning, the novice is not really "taught" so much as simply allowed to learn. But compared to psychological constructivism, social constructivism highlights a more direct responsibility of the expert for making learning possible. He or she must not only have knowledge and skill, but also know how to arrange experiences that make it easy and safe for learners to gain knowledge and skill themselves. These requirements sound, of course, a lot like the requirements for classroom teaching. In addition to knowing what is to be learned, the expert (i.e. the teacher) also has to organize the content into manageable parts, offer the parts in a sensible sequence, provide for suitable and successful practice, bring the parts back together again at the end, and somehow relate the entire experience to knowledge and skills meaningful to the learner already. But of course, no one said that teaching is easy!

The teacher's role in Psychological and Social Constructivism

As some of the comments above indicate, psychological and social constructivism have differences that suggest different ways for teachers to teach most effectively. The theoretical differences are related to three ideas in particular: the relationship of learning and long-term development, the role or meaning of generalizations and

abstractions during development, and the mechanism by which development occurs.

The relationship of learning and long-term development of the child

In general psychological constructivism such as Piaget emphasize the ways that long-term development determines a child's ability to learn, rather than the other way around. The earliest stages of a child's life are thought to be rather self-centered and to be dependent on the child's sensory and motor interactions with the environment. When acting or reacting to his or her surroundings, the child has relatively little language skill initially. This circumstance limits the child's ability to learn in the usual, school-like sense of the term. As development proceeds, of course, language skills improve and hence the child becomes progressively more "teachable" and in this sense more able to learn. But whatever the child's age, ability to learn waits or depends upon the child's stage of development. From this point of view, therefore, a primary responsibility of teachers is to provide a very rich classroom environment, so that children can interact with it independently and gradually make themselves ready for verbal learning that is increasingly sophisticated.

Social constructivists such as Vygotsky, on the other hand, emphasize the importance of social interaction in stimulating the development of the child. Language and dialogue therefore are primary, and development is seen as happening as a result—the converse of the sequence pictured by Piaget. Obviously a child does not begin life with a lot of initial language skill, but this fact is why interactions need to be scaffolded with more experienced experts—people capable of creating a zone of proximal development in their conversations and other interactions. In the preschool years the experts are usually parents; after the school years begin, the experts

broaden to include teachers. A teacher's primary responsibility is therefore to provide very rich opportunities for dialogue, both among children and between individual children and the teacher.

The role of generalizations and abstractions during development

Consistent with the ideas above, psychological constructivism tends to see a relatively limited role for abstract or hypothetical reasoning in the life of children—and even in the reasoning of youth and many adults. Such reasoning is regarded as an outgrowth of years of interacting with the environment very concretely. As explained more fully in the next chapter ("Student development"), elementary-age students can reason, but they are thought to reason only about immediate, concrete objects and events. Even older youth are thought to reason in this way much, or even all of the time. From this perspective a teacher should limit the amount of thinking about abstract ideas that she expects from students. The idea of "democracy," for example, may be experienced simply as an empty concept. At most it might be misconstrued as an oversimplified, overly concrete idea—as "just" about taking votes in class, for instance. Abstract thinking *is* possible, according to psychological constructivism, but it emerges relatively slowly and relatively late in development, after a person accumulates considerable concrete experience.

Social constructivism sees abstract thinking emerging from dialogue between a relative novice (a child or youth) and a more experienced expert (a parent or teacher). From this point of view, the more such dialogue occurs, then the more the child can acquire facility with it. The dialogue must, of course, honor a child's need for intellectual scaffolding or a zone of proximal development. A teacher's responsibility can therefore include engaging the child in dialogue that uses potentially abstract reasoning, but without

expecting the child to understand the abstractions fully at first. Young children, for example, can not only engage in science experiments like creating a "volcano" out of baking soda and water, but also discuss and speculate about their observations of the experiment. They may not understand the experiment as an adult would, but the discussion can begin moving them toward adult-like understandings.

How development occurs

In psychological constructivism, as explained earlier, development is thought to happen because of the interplay between *assimilation* and *accommodation*—between when a child or youth can already understand or conceive of, and the change required of that understanding by new experiences. Acting together, assimilation and accommodation continually create new states of cognitive *equilibrium*. A teacher can therefore stimulate development by provoking cognitive dissonance deliberately: by confronting a student with sights, actions, or ideas that do not fit with the student's existing experiences and ideas. In practice the dissonance is often communicated verbally, by posing questions or ideas that are new or that students may have misunderstood in the past. But it can also be provoked through pictures or activities that are unfamiliar to students—by engaging students in a community service project, for example, that brings them in contact with people who they had previously considered "strange" or different from themselves.

In social constructivism, as also explained earlier, development is thought to happen largely because of scaffolded dialogue in a zone of proximal development. Such dialogue is by implication less like "disturbing" students' thinking than like "stretching" it beyond its former limits. The image of the teacher therefore is more one of collaborating with students' ideas rather than challenging their

ideas or experiences. In practice, however, the actual behavior of teachers and students may be quite similar in both forms of constructivism. Any significant new learning requires setting aside, giving up, or revising former learning, and this step inevitably therefore "disturbs" thinking, if only in the short term and only in a relatively minor way.

Implications of constructivism for teaching

Whether you think of yourself as a psychological constructivist or a social constructivist, there are strategies for helping students help in develop their thinking—in fact the strategies constitute a major portion of this book, and are a major theme throughout the entire preservice teacher education programs. For now, look briefly at just two. One strategy that teachers often find helpful is to organize the content to be learned as systematically as possible, because doing this allows the teacher to select and devise learning activities that are better tailored to students' cognitive abilities, or that promote better dialogue, or both. One of the most widely used frameworks for organizing content, for example, is a classification scheme proposed by the educator Benjamin Bloom, published with the somewhat imposing title of *Taxonomy of Educational Objectives: Handbook #1: Cognitive Domain* (Bloom, et al., 1956; Anderson & Krathwohl, 2001). **Bloom's taxonomy**, as it is usually called, describes six kinds of learning goals that teachers can in principle expect from students, ranging from simple recall of knowledge to complex evaluation of knowledge. (The levels are defined briefly in Error: Reference source not found with examples from Goldilocks and the Three Bears.)

Bloom's taxonomy makes useful distinctions among possible kinds of knowledge needed by students, and therefore potentially helps in selecting activities that truly target students' *zones of proximal development* in the sense meant by Vygotsky. A student who knows

few terms for the species studied in biology unit (a problem at Bloom's *knowledge* and *comprehension* levels), for example, may initially need support at remembering and defining the terms before he or she can make useful comparisons among species (Bloom's *analysis* level). Pinpointing the most appropriate learning activities to accomplish this objective remains the job of the teacher-expert (that's you), but the learning itself has to be accomplished by the student. Put in more social constructivist terms, the teacher arranges a zone of proximal development that allows the student to compare species successfully, but the student still has to construct or appropriate the comparisons for him or herself.

Table 1: Bloom's taxonomy of educational objectives: cognitive domain

Category or type of thinking	Definition	Example
Knowledge	Remembering or recalling facts, information, or procedures	List three things Goldilocks did in the three bears' house.
Comprehension	Understanding facts, interpreting information	Explain why Goldilocks liked the little bear's chair the best.
Application	Using concepts in new situations, solving particular problems	Predict some of the things that Goldilocks might have used if she had entered your house.
Analysis	Distinguish parts of information, a concept, or a procedure	Select the part of the story where Goldilocks seemed most comfortable.
Synthesis	Combining elements or parts into a new object, idea, or procedure	Tell how the story would have been different if it had been about three fishes.
Evaluation	Assessing and judging the value or ideas, objects, or materials in a particular situation	Decide whether Goldilocks was a bad girl, and justify your position.

A second strategy may be coupled with the first. As students gain experience as students, they become able to think about how they *themselves* learn best, and you (as the teacher) can encourage such

self-reflection as one of your goals for their learning. These changes allow you to transfer some of your responsibilities for *arranging* learning to the students themselves. For the biology student mentioned above, for example, you may be able not only to plan activities that support comparing species, but also to devise ways for the student to think about how he or she might learn the same information independently. The resulting self-assessment and self-direction of learning often goes by the name of **metacognition**—an ability to think about and regulate one's own thinking (Israel, 2005). Metacognition can sometimes be difficult for students to achieve, but it is an important goal for social constructivist learning because it gradually frees learners from dependence on expert teachers to guide their learning. Reflective learners, you might say, become their own expert guides. Like with using Bloom's taxonomy, though, promoting metacognition and self-directed learning is important enough that I will come back to it later in more detail (in the chapter on "Facilitating complex thinking").

By assigning a more active role to expert helpers—which by implication includes teachers—than does the psychological constructivism, social constructivism may be more complete as a description of what teachers usually do when actually busy in classrooms, and of what they usually hope students will experience there. As we will see in the next chapter, however, there are more uses for a theory than its description of moment-to-moment interactions between teacher and students. As explained there, some theories can be helpful for planning instruction rather than for doing it. It turns out that this is the case for psychological constructivism, which offers important ideas about the appropriate sequencing of learning and development. This fact makes the psychological constructivism valuable in its own way, even though it (and a few other learning theories as well) may seem to omit mentioning teachers, parents, or experts in detail. So do not make up your mind about the relative merits of different learning theories yet!

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32. Behavioral Psychology

Behaviorism is an approach to psychology that focuses on observable behaviors that people learn from their environments.

LEARNING OBJECTIVE

- Describe the major contributions to the development of behaviorism

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KEY POINTS

- Behaviorism emerged in the early 20th century as a reaction to the psychoanalytic theory of the time, and focused on observable behaviors rather than on unconscious inner states.
- The Russian physiologist Ivan Pavlov is widely known for describing the phenomenon now known as *classicalconditioning* in his experiments with dogs.
- John B. Watson was an American psychologist best known for his controversial "Little Albert" experiment using classical conditioning.
- Edward Lee Thorndike was an American psychologist whose work on animal behavior and the learning process led him to discover what he termed the "law of effect."
- B. F. Skinner coined the term "operant conditioning," which describes the strengthening or attenuation of a voluntary response based on association with positive or

negative consequences.

TERM

- conditioningThe process of modifying a person's or an animal's behavior.

Behaviorism is an approach to psychology that emerged in the early 20th century as a reaction to the psychoanalytic theory of the time. Psychoanalytic theory often had difficulty making predictions that could be tested using rigorous experimental methods. The behaviorist school of thought maintains that behaviors can be described scientifically without recourse either to internal physiological events or to hypothetical constructs such as thoughts and beliefs. Rather than focusing on underlying conflicts, behaviorism focuses on observable, overt behaviors that are learned from the environment.

Its application to the treatment of mental problems is known as behavior modification. Learning is seen as behavior change molded by experience; it is accomplished largely through either classical or operant conditioning (described below).

Developments in Behaviorism

The primary developments in behaviorism came from the work of Ivan Pavlov, John B. Watson, Edward Lee Thorndike, and B. F. Skinner.

Ivan Pavlov and Classical Conditioning

The Russian physiologist Ivan Pavlov was widely known for describing the phenomenon now known as classical conditioning. In his famous 1890s experiment, he trained his dogs to salivate on command by associating the ringing of a bell with the delivery of food. As Pavlov's work became known in the West, particularly through the writings of John B. Watson, the idea of conditioning as an automatic form of learning became a key concept in the development of behaviorism.
image

Ivan Pavlov

Ivan Pavlov is best known for his classical conditioning experiments with dogs.

Watson's "Little Albert" Experiment

John B. Watson was an American psychologist who is best known for his controversial "Little Albert" experiment. In this experiment, he used classical conditioning to teach a nine-month-old boy to be afraid of a white toy rat by associating the rat with a sudden loud noise. This study demonstrated how emotions could become conditioned responses.
image

Watson's "Little Albert" experiment

In Watson's famous experiment, he taught an infant to be afraid of a fur coat, among other things, through the process of conditioning.

Thorndike's Law of Effect

Edward Lee Thorndike was an American psychologist whose work on animal behavior and the learning process led to the "law of effect." The law of effect states that responses that create a satisfying effect are more likely to occur again, while responses that produce a discomforting effect become less likely to occur.

Skinner's Operant Conditioning

"Operant conditioning," a term coined by psychologist B. F. Skinner, describes a form of learning in which a voluntary response is strengthened or weakened depending on its association with either positive or negative consequences. The *strengthening* of a response occurs through reinforcement. Skinner described two types of reinforcement: positive reinforcement, which is the introduction of a positive consequence such as food, pleasurable activities, or attention from others, and negative reinforcement, which is the removal of a negative consequence such as pain or a loud noise. Skinner saw human behavior as shaped by trial and error through reinforcement and punishment, without any reference to inner conflicts or perceptions. In his theory, mental disorders represented maladaptive behaviors that were learned and could be unlearned through behavior modification.

Behaviorism Today

In the second half of the 20th century, behaviorism was expanded through advances in cognitive theories. While behaviorism and cognitive schools of psychological thought may not agree theoretically, they have complemented each other in practical therapeutic applications like cognitive-behavioral therapy (CBT), which has been used widely in the treatment of many different mental disorders, such as phobias, PTSD, and addiction.

Some behavior therapies employ Skinner's theories of operant conditioning: by not reinforcing certain behaviors, these behaviors can be extinguished. Skinner's radical behaviorism advanced a "triple contingency" model, which explored the links between the environment, behavior, *and* the mind. This later gave rise to applied behavior analysis (ABA), in which operant conditioning techniques are used to reinforce positive behaviors and punish unwanted behaviors. This approach to treatment has been an effective tool to help children on the autism spectrum; however, it is considered controversial by many who see it as attempting to change or "normalize" autistic behaviors (Lovaas, 1987, 2003; Sallows & Graupner, 2005; Wolf & Risley, 1967).

PART VII

MODULE 5: THEORIES (PART II)

33. Incentive Theory of Motivation and Intrinsic vs. Extrinsic Motivation

According to incentive theory, behavior is primarily motivated by the incentive of extrinsic factors.

LEARNING OBJECTIVE

- Differentiate between intrinsic and extrinsic incentives as related to theories of motivation

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KEY POINTS

- Motivations are commonly separated into two different types based on the nature of the motivator: intrinsic (arising from internal factors) or extrinsic (arising from external factors).
- Incentive theory argues that behavior is primarily extrinsically motivated: people are more motivated to perform activities if they receive a reward afterward, rather than simply because they enjoy the activities themselves.
- Intrinsically motivated behaviors are performed because of the sense of personal satisfaction that they bring.

- Extrinsically motivated behaviors are performed in order to receive something from others—such as a promotion, praise, candy, money, or attention.
- Studies have shown that intrinsic motivation will decrease over time if extrinsic incentives are introduced for behaviors that an individual already found motivating.
- The efficacy of extrinsic motivators varies depending on factors such as self-esteem, locus of control, self-efficacy, and neuroticism.

TERMS

- incentiveSomething that motivates, rouses, or encourages; an anticipated reward or aversive event from the environment.
- extrinsicExternal; inessential.
- intrinsicInnate; inherent; essential.

FULL TEXT

Motivation refers to a desire, need, or drive that contributes to and explains behavioral changes. In general, motivators provide some sort of incentive for completing a task. One definition of a motivator explains it as a force "acting either on or within a person to initiate behavior." In addition to biological motives, motivations can be either intrinsic (arising from internal factors) or extrinsic (arising from external factors). Incentive theory argues that people are primarily extrinsically motivated—meaning that most motivations stem from extrinsic sources.

Extrinsic vs. Intrinsic Motivation

Intrinsically motivated behaviors are performed because of the sense of personal satisfaction that they bring. According to Deci (1971), these behaviors are defined as ones for which the reward is the satisfaction of performing the activity itself. Intrinsic motivation thus represents engagement in an activity for its own sake. For example, if you are in college because you enjoy learning new things and expanding your knowledge, you are intrinsically motivated to be there.

Extrinsically motivated behaviors, on the other hand, are performed in order to receive something from others or avoid certain negative outcomes. Theorists define extrinsic motivation as "engaging in an activity to obtain an outcome that is separable from the activity itself" (deCharms, 1968; Lepper & Greene, 1978). The extrinsic motivator is outside of, and acts on, the individual. Rewards—such as a job promotion, money, a sticker, or candy—are good examples of extrinsic motivators. Social and emotional incentives like praise and attention are also extrinsic motivators since they are bestowed on the individual by another person.

Extrinsic rewards are often used to impact someone who shows little interest in a potentially useful activity. For example, if a child shows no interest in memorizing new vocabulary words, her teacher might employ external rewards to get her to engage in and work hard on that activity. Similarly, a child might be motivated to do his chores by the extrinsic motivation that he will get his allowance afterward, rather than any intrinsic sense of accomplishment. Grades offer extrinsic motivation as well: students are generally motivated to do a better job if they know their performance will be judged (Stockdale & Williams, 2004).

Incentive Theory and the Effects of

Extrinsic Motivation

Incentive theory is based on the idea that behavior is primarily extrinsically motivated. It argues that people are more motivated to perform activities if they receive a reward afterward, rather than simply because they enjoy the activities themselves.

There is controversy concerning *how* and *for how long* motivators change behavior. For instance, some data suggest that intrinsic motivation is diminished when extrinsic motivation is given—a process known as the *overjustification effect*. If extrinsic incentives are used to stimulate behaviors that an individual already finds motivating (even without external reinforcement), intrinsic motivation for that behavior may decrease over time. In those cases, extrinsic motivators can backfire: instead of serving as an incentive for the desired behavior, they undermine a previously held intrinsic motivation. This can lead to extinguishing the intrinsic motivation and creating a dependence on extrinsic rewards for continued performance (Deci et al., 1999).

A classic research study of intrinsic motivation illustrates this problem clearly. In the study, researchers asked university students to perform two activities—solving puzzles and writing newspaper headlines—that they already found interesting. Some of the students were paid to do these activities, the others were not. Under these conditions, the students who were paid were less likely to continue to engage in these activities after the experiment, while the students who were not paid were more likely to continue—even though both groups had been equally interested in the activities to begin with (Deci, 1971). The extrinsic reward of payment, it seemed, interfered with the intrinsic reward of the activity itself.

Other studies suggest that intrinsic motivation may not be so vulnerable to the effects of extrinsic reinforcements, and in fact, reinforcements such as verbal praise might actually increase intrinsic motivation (Arnold, 1976; Cameron & Pierce, 1994). Several factors may influence this: for one, physical reinforcements (such as

money) have been shown to have more negative effects on intrinsic motivation than do verbal reinforcements (such as praise). Furthermore, the expectation of the extrinsic motivator by an individual is crucial: if the person expects to receive an extrinsic reward, then intrinsic motivation for the task tends to be reduced. If, however, there is no such expectation, and the extrinsic motivation is presented as a surprise, then intrinsic motivation for the task tends to persist (Deci et al., 1999).

Other studies provide evidence that the effectiveness of extrinsic motivators varies depending on factors like self-esteem, locus of control (the extent to which someone believes they can control events that affect them), self-efficacy (how someone judges their own competence to complete tasks and reach goals), and neuroticism (a personality trait characterized by anxiety, moodiness, worry, envy, and jealousy). For example, praise might have less effect on behavior for people with high self-esteem because they would not have the same need for approval that would make external praise reinforcing. On the other hand, someone who lacks confidence may work diligently for the sole purpose of seeking even a small amount of recognition.

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34. Motivation as self-efficacy

In addition to being influenced by their goals, interests, and attributions, students' motives are affected by *specific* beliefs about the student's personal capacities. In **self-efficacy theory** the beliefs become a primary, explicit explanation for motivation (Bandura, 1977, 1986, 1997). **Self-efficacy** is the belief that you are capable of carrying out a specific task or of reaching a specific goal. Note that the belief and the action or goal are *specific*. Self-efficacy is a belief that you can write an acceptable term paper, for example, or repair an automobile, or make friends with the new student in class. These are relatively specific beliefs and tasks. Self-efficacy is not about whether you believe that you are intelligent in general, whether you always like working with mechanical things, or think that you are generally a likeable person. These more general judgments are better regarded as various mixtures of *self-concepts* (beliefs about general personal identity) or of *self-esteem* (evaluations of identity). They are important in their own right, and sometimes influence motivation, but only indirectly (Bong & Skaalvik, 2004). Self-efficacy beliefs, furthermore, are not the same as "true" or documented skill or ability. They are *self*-constructed, meaning that they are personally developed perceptions. There can sometimes therefore be discrepancies between a person's self-efficacy beliefs and the person's abilities. You can believe that you can write a good term paper, for example, without actually being able to do so, and vice versa: you can believe yourself *in*capable of writing a paper, but discover that you *are* in fact able to do so. In this way self-efficacy is like the everyday idea of *confidence*, except that it is defined more precisely. And as with confidence, it is possible to have either too much or too little self-efficacy. The optimum level seems to be either at or slightly above true capacity (Bandura, 1997). As we indicate below, large discrepancies between self-efficacy and ability can create motivational problems for the individual.

Effects of self-efficacy on students' behavior

Self-efficacy may sound like a uniformly desirable quality, but research as well as teachers' experience suggests that its effects are a bit more complicated than they first appear. Self-efficacy has three main effects, each of which has both a "dark" or undesirable side and a positive or desirable side.

Choice of tasks

The first effect is that self-efficacy makes students more willing to choose tasks where they already feel confident of succeeding. This effect is almost inevitable, given the definition of the concept of self-efficacy, it has also been supported by research on self-efficacy beliefs (Pajares & Schunk, 2001). For teachers, the effect on choice can be either welcome or not, depending on circumstances. If a student believes that he or she can solve mathematical problems, then the student is more likely to attempt the mathematics homework that the teacher assigns. Unfortunately the converse is also true. If a student believes that he or she is *in*capable of math, then the student is less likely to attempt the math homework (perhaps telling himself, "What's the use of trying?"), regardless of the student's actual ability in math.

Since self-efficacy is self-constructed, furthermore, it is also possible for students to miscalculate or misperceive their true skill, and the misperceptions themselves can have complex effects on students' motivations. From a teacher's point of view, all is well even if students overestimate their capacity but actually do succeed at a relevant task anyway, or if they underestimate their capacity, yet discover that they *can* succeed and raise their self-efficacy beliefs as a result. All may not be well, though, if students do not believe that they can succeed and therefore do not even try, or if students

overestimate their capacity by a wide margin, but are disappointed unexpectedly by failure and lower their self-efficacy beliefs.

Persistence at tasks

A second effect of high self-efficacy is to increase a persistence at relevant tasks. If you believe that you can solve crossword puzzles, but encounter one that takes longer than usual, then you are more likely to work longer at the puzzle until you (hopefully) really do solve it. This is probably a desirable behavior in many situations, unless the persistence happens to interfere with other, more important tasks (what if you should be doing homework instead of working on crossword puzzles?). If you happen to have low self-efficacy for crosswords, on the other hand, then you are more likely to give up early on a difficult puzzle. Giving up early may often be undesirable because it deprives you of a chance to improve your skill by persisting. Then again (on the third hand?), the consequent lack of success because of giving up may provide a useful incentive to improve your crossword skills. And again, misperceptions of capacity make a difference. Overestimating your capacity by a lot (excessively high self-efficacy) might lead you not to prepare for or focus on a task properly, and thereby impair your performance. So as with choosing tasks, the effects of self-efficacy vary from one individual to another and one situation to another. The teacher's task is therefore two-fold: first, to discern the variations, and second, to encourage the positive self-efficacy beliefs. Table 1 offers some additional advice about how to do this.

Table 1: Ways of encouraging self-efficacy beliefs

Strategy	Example of what the teacher might say
Set goals with students, and get a commitment from them to reach the goals.	"By the end of the month, I want you to know all of the times table up to 25 × 25. Can I count on you to do that?"
Encourage students to compare their performance with their own previous performance, not with other students.	"Compare that drawing against the one that you made last semester. I think you'll find improvements!"
Point out links between effort and improvement.	"I saw you studying for this test more this week. No wonder you did better this time!"
In giving feedback about performance, focus on information, not evaluative judgments.	"Part 1 of the lab write-up was very detailed, just as the assignment asked. Part 2 has a lot of good ideas in it, but it needs to be more detailed and stated more explicitly."
Point out that increases in knowledge or skill happen gradually by sustained effort, not because of inborn ability.	"Every time I read another one of your essays, I see more good ideas than the last time. They are so much more complete than when you started the year."

Response to failure

High self-efficacy for a task not only increases a person's persistence at the task, but also improves their ability to cope with stressful conditions and to recover their motivation following outright failures. Suppose that you have two assignments—an essay and a science lab report—due on the same day, and this circumstance promises to make your life hectic as you approach the deadline. You will cope better with the stress of multiple assignments if you already believe yourself capable of doing both of the tasks, than if you believe yourself capable of doing just one of them or (especially) of doing neither. You will also recover better in the unfortunate event that you end up with a poor grade on one or even both of the tasks.

That is the good news. The bad news, at least from a teacher's point of view, is that the same resilience can sometimes also serve non-academic and non-school purposes. How so? Suppose, instead of two school assignments due on the same day, a student has only one school assignment due, but also holds a part-time evening job as a server in a local restaurant. Suppose, further, that the student has high self-efficacy for both of these tasks; he believes, in other words, that he is capable of completing the assignment as well as continuing to work at the job. The result of such resilient beliefs can easily be a student who devotes *less* attention to school work than ideal, and who even ends up with a *lower* grade on the assignment than he or she is capable of.

Learned helplessness and self-efficacy

If a person's sense of self-efficacy is very low, he or she can develop **learned helplessness**, a perception of complete *lack* of control in mastering a task. The attitude is similar to depression, a pervasive feeling of apathy and a belief that effort makes no difference and does not lead to success. Learned helplessness was originally studied from the behaviorist perspective of classical and operant conditioning by the psychologist Martin Seligman (1995). The studies used a somewhat "gloomy" experimental procedure in which an animal, such as a rat or a dog, was repeatedly shocked in a cage in a way that prevented the animal from escaping the shocks. In a later phase of the procedure, conditions were changed so that the animal could avoid the shocks by merely moving from one side of the cage to the other. Yet frequently they did not bother to do so! Seligman called this behavior *learned helplessness*.

In people, learned helplessness leads to characteristic ways of dealing with problems. They tend to attribute the source of a problem to themselves, to generalize the problem to many aspects of life, and to see the problem as lasting or permanent. More

optimistic individuals, in contrast, are more likely to attribute a problem to outside sources, to see it as specific to a particular situation or activity, and to see it as temporary or time-limited. Consider, for example, two students who each fail a test. The one with a lot of learned helplessness is more likely to explain the failure by saying something like: "I'm stupid; I never perform well on any schoolwork, and I never will perform well at it." The other, more optimistic student is more likely to say something like: "The teacher made the test too hard this time, so the test doesn't prove anything about how I will do next time or in other subjects."

What is noteworthy about these differences in perception is how much the more optimistic of these perspectives resembles high self-efficacy and how much learned helplessness seems to contradict or differ from it. As already noted, high self-efficacy is a strong belief in one's capacity to carry out a *specific* task successfully. By definition therefore self-efficacy focuses attention on a temporary or time-limited activity (the task), even though the cause of successful completion (oneself) is "internal." Teachers can minimize learned helplessness in students, therefore, by encouraging their self-efficacy beliefs. There are several ways of doing this, as we explain next.

Sources of self-efficacy beliefs

Psychologists who study self-efficacy have identified four major sources of self-efficacy beliefs (Pajares & Schunk, 2001, 2002). In order of importance they are (1) prior experiences of mastering tasks, (2) watching others' mastering tasks, (3) messages or "persuasion" from others, and (4) emotions related to stress and discomfort. Fortunately the first three can be influenced by teachers directly, and even the fourth can sometimes be influenced indirectly by appropriate interpretive comments from the teacher or others.

Prior experiences of mastery

Not surprisingly, past successes at a task increase students' beliefs that they will succeed again in the future. The implication of this basic fact means that teachers need to help students build a history of successes. Whether they are math problems, reading assignments, or athletic activities, tasks have to end with success more often than with failure. Note, though, that the successes have to represent mastery that is genuine or competence that is truly authentic. Success at tasks that are trivial or irrelevant do not improve self-efficacy beliefs, nor does praise for successes that a student has not really had (Erikson, 1968/1994).

As a practical matter, creating a genuine history of success is most convincing if teachers also work to broaden a student's vision of "the past." Younger students (elementary-age) in particular have relatively short or limited ideas of what counts as "past experience"; they may go back only a few occasions when forming impressions of whether they can succeed again in the future (Eccles, et al., 1998). Older students (secondary school) gradually develop longer views of their personal "pasts," both because of improvements in memory and because of accumulating a personal history that is truly longer. The challenge for working with any age, however, is to insure that students base self-efficacy beliefs on *all* relevant experiences from their pasts, not just on selected or recent experiences.

Watching others' experiences of mastery

A second source of efficacy beliefs comes from *vicarious experience of mastery*, or observing others' successes (Schunk & Zimmerman, 1997). Simply seeing someone else succeed at a task, in other words, can contribute to believing that you, too, can succeed. The effect is stronger when the observer lacks experience with the task and

therefore may be unsure of his or her own ability. It is also stronger when the model is someone respected by the observer, such as a student's teacher, or a peer with generally comparable ability. Even under these conditions, though, vicarious experience is not as influential as direct experience. The reasons are not hard to imagine. Suppose, for example, you witness both your teacher and a respected friend succeed at singing a favorite tune, but you are unsure whether you personally can sing. In that case you may feel encouraged about your own potential, but are likely still to feel somewhat uncertain of your own efficacy. If on the other hand you do *not* witness others' singing, but you have a history of singing well yourself, it is a different story. In that case you are likely to believe in your efficacy, regardless of how others perform.

All of which suggests that to a modest extent, teachers may be able to enhance students' self-efficacy by modeling success at a task or by pointing out classmates who are successful. These strategies can work because they not only show how to do a task, but also communicate a more fundamental message, the fact that the task *can* in fact be done. If students are learning a difficult arithmetic procedure, for example, you can help by demonstrating the procedure, or by pointing out classmates who are doing it. Note, though, that vicarious mastery is helpful only if backed up with real successes performed by the students themselves. It is also helpful only if the "model classmates" are perceived as truly comparable in ability. Overuse of vicarious models, especially in the absence of real success by learners, can cause learners to disqualify a model's success; students may simply decide that the model is "out of their league" in skills and is therefore irrelevant to judging their own potential.

Social messages and persuasion

A third source of efficacy beliefs are encouragements, both implied

and stated, that persuade a person of his or her capacity to do a task. Persuasion does not create high efficacy by itself, but it often increases or supports it when coupled with either direct or vicarious experience, especially when the persuasion comes from more than one person (Goddard, Hoy, & Hoy, 2004).

For teachers, this suggests two things. The first, of course, is that encouragement can motivate students, especially when it is focused on achievable, specific tasks. It can be motivating to say things like: "I think you can do it" or "I've seen you do this before, so I know that you can do it again." But the second implication is that teachers should arrange wherever possible to support their encouragement by designing tasks at hand that are in fact achievable by the student. Striking a balance of encouragement and task difficulty may seem straightforward, but sometimes it can be challenging because students can sometimes perceive teachers' comments and tasks quite differently from how teachers intend. Giving excessive amounts of detailed help, for example, may be intended as support for a student, but be taken as a lack of confidence in the student's ability to do the task independently.

Emotions related to success, stress or discomfort

The previous three sources of efficacy beliefs are all rather cognitive or "thinking oriented," but emotions also influence expectations of success or failure. Feeling nervous or anxious just before speaking to a large group (sometimes even just a class full of students!) can function like a message that says "I'm not going to succeed at doing this," even if there is in fact good reason to expect success. But positive feelings can also raise beliefs about efficacy. When recalling the excitement of succeeding at a previous, unrelated task, people may overestimate their chances of success at a new task with which they have no previous experience, and are therefore in no position to predict their efficacy.

For teachers, the most important implication is that students' motivation can be affected when they generalize from past experience which they believe, rightly or wrongly, to be relevant. By simply announcing a test, for example, a teacher can make some students anxious even before the students find out anything about the test— whether it is easy or difficult, or even comparable in any way to other experiences called "tests" in their pasts. Conversely, it can be misleading to encourage students on the basis of their success at past academic tasks if the earlier tasks were not really relevant to requirements of the new tasks at hand. Suppose, for example, that a middle-years student has previously written only brief opinion-based papers, and never written a research-based paper. In that case boosting the student's confidence by telling him that "it is just like the papers you wrote before" may not be helpful or even honest.

A caution: motivation as content versus motivation as process

A caution about self-efficacy theory is its heavy emphasis on just the process of motivation, at the expense of the content of motivation. The basic self-efficacy model has much to say about how beliefs affect behavior, but relatively little to say about which beliefs and tasks are especially satisfying or lead to the greatest well-being in students. The answer to this question is important to know, since teachers might then select tasks as much as possible that are intrinsically satisfying, and not merely achievable.

Another way of posing this concern is by asking: "Is it possible to feel high self-efficacy about a task that you do not enjoy?" It does seem quite possible for such a gap to exist. As a youth, for example, one of us (Kelvin Seifert) had considerable success with solving mathematics problems in high school algebra, and expended considerable effort doing algebra assignments as homework. Before

long, he had developed high self-efficacy with regard to solving such problems. But Kelvin never really enjoyed solving the algebra problems, and later even turned away permanently from math or science as a career (much to the disappointment of his teachers and family). In this case self-efficacy theory nicely explained the process of his motivation—Kelvin's belief in his capacity led to persistence at the tasks. But it did not explain the content of his motivation—his growing dislike of the tasks. Accounting for such a gap requires a different theory of motivation, one that includes not only specific beliefs, but "deeper" personal needs as well. An example of this approach is self-determination theory, where we turn next.

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35. Cultural Psychology

Cultural psychology seeks to understand how forces of society and culture influence individuals' thoughts, feelings, and behaviors.

LEARNING OBJECTIVE

- Characterize the field of cultural psychology

KEY POINTS

- Both cultural psychology and cultural-historical psychology seek to examine how sociocultural factors (such as attitudes, gender roles, child-rearing practices, etc.) influence human mental states and behavior.
- Cultural psychology is the study of how psychological and behavioral tendencies are rooted and embedded within culture. Its main tenet is that mind and culture are inseparable: people are shaped by their culture, and their culture is shaped by them.
- Western and white populations tend to be overrepresented in psychological research, yet findings from this research tend to be labeled "universal" and inaccurately applied to other cultures.
- The theory of cultural-historical psychology, developed by Lev Vygotsky in the late 1920s, focuses on how aspects of culture are transmitted from one generation to the next.

TERMS

- socioculturalRelating to both society and culture.
- Vygotsky(1896–1934) A Soviet Russian-Belarusian psychologist and the founder of cultural-historical psychology, a theory of human cultural and biosocial development.
- cross-cultural psychologyThe scientific study of human behavior and mental processes, including both their variability and invariance, under diverse cultural conditions.

Sociocultural factors are the larger-scale forces within cultures and societies that affect the thoughts, feelings, and behaviors of individuals. These include forces such as attitudes, child-rearing practices, discrimination and prejudice, ethnic and racial identity, gender roles and norms, family and kinship structures, power dynamics, regional differences, religious beliefs and practices, rituals, and taboos. Several subfields within psychology seek to examine these sociocultural factors that influence human mental states and behavior; among these are social psychology (discussed in another section), cultural psychology, and cultural-historical psychology.

Cultural Psychology

Cultural psychology is the study of how psychological and behavioral tendencies are rooted and embedded within culture. The main tenet of cultural psychology is that mind and culture are inseparable and mutually constitutive, meaning that people are shaped by their culture and their culture is also shaped by them.

A major goal of cultural psychology is to expand the number and variation of cultures that contribute to basic psychological theories, so that these theories become morerelevant to the predictions, descriptions, and explanations of *all* human behaviors—not just

Western ones. Populations that are Western, educated, and industrialized tend to be overrepresented in psychological research, yet findings from this research tend to be labeled "universal" and inaccurately applied to other cultures. The evidence that social values, logical reasoning, and basic cognitive and motivational processes vary across populations has become increasingly difficult to ignore. By studying only a narrow range of culture within human populations, psychologists fail to account for a substantial amount of diversity.

image

White American culture

Populations that are Western, educated, and industrialized tend to be overrepresented in psychological research. By studying only a narrow range of human culture, psychologists fail to account for a substantial amount of variation.

Cultural psychology is often confused with cross-cultural psychology; however, it is distinct in that cross-cultural psychologists generally use culture as a means of testing the universality of psychological processes, rather than determining how local cultural practices shape psychological processes. So while a cross-cultural psychologist might ask whether Jean Piaget's stages of development are universal across a variety of cultures, a cultural psychologist would be interested in how the social practices of a particular set of cultures shape the development of cognitive processes in different ways.

Vygotsky and Cultural-Historical Psychology

Cultural-historical psychology is a psychological theory formed by Lev Vygotsky in the late 1920s and further developed by his students and followers in Eastern Europe and worldwide. This theory focuses on how aspects of culture, such as values, beliefs, customs, and skills, are transmitted from one generation to the next. According to Vygotsky, social interaction—especially involvement with knowledgeable community or family members—helps children to acquire the thought processes and behaviors specific to their culture and/or society. The growth that children experience as a result of these interactions differs greatly between cultures; this variance allows children to become competent in tasks that are considered important or necessary in their particular society.

36. Constructivism and Social Constructivism in the Classroom

In the constructivist classroom, the focus tends to shift from the teacher to the students. The classroom is no longer a place where the teacher ("expert") pours knowledge into passive students, who wait like empty vessels to be filled. In the constructivist model, the students are urged to be actively involved in their own process of learning.

In the constructivist classroom, both teacher and students think of knowledge as a dynamic, ever-changing view of the world we live in and the ability to successfully stretch and explore that view – not as inert factoids to be memorized.

Key assumptions of this perspective include:

1. What the student currently believes, whether correct or incorrect, is important.
2. Despite having the same learning experience, each individual will base their learning on the understanding and meaning personal to them.
3. Understanding or constructing a meaning is an active and continuous process..
4. Learning may involve some conceptual changes.
5. When students construct a new meaning, they may not believe it but may give it provisional acceptance or even rejection.
6. Learning is an active, not a passive, process and depends on the students taking responsibility to learn.

The main activity in a constructivist classroom is solving problems. Students use inquiry methods to ask questions, investigate a topic,

and use a variety of resources to find solutions and answers. As students explore the topic, they draw conclusions, and, as exploration continues, they revisit those conclusions. Exploration of questions leads to more questions.

There is a great deal of overlap between a constructivist and social constructivist classroom, with the exception of the greater emphasis placed on learning through social interaction, and the value placed on cultural background. For Vygotsky, culture gives the child the cognitive tools needed for development. Adults in the learner's environment are conduits for the tools of the culture, which include language, cultural history, social context, and more recently, electronic forms of information access.

In social constructivist classrooms collaborative learning is a process of peer interaction that is mediated and structured by the teacher. Discussion can be promoted by the presentation of specific concepts, problems or scenarios, and is guided by means of effectively directed questions, the introduction and clarification of concepts and information, and references to previously learned material.

Role of the teacher

Constructivist teachers do not take the role of the "sage on the stage." Instead, teachers act as a "guide on the side" providing students with opportunities to test the adequacy of their current understandings

Theory	Implication for classroom
The educator should consider the knowledge and experiences students bring to class	
Learners construct their knowledge through a process of active enquiry	
'Discovery' is facilitated by providing the necessary resources	
Knowledge is actively constructed & learning is presented as a process of active discovery	
Provide assistance with assimilation of new and old knowledge	
Learning programme should be sufficiently flexible to permit development along lines of student enquiry	
Due to its interpretivist nature, each student will interpret information in different ways	
Create situations where the students feel safe questioning and reflecting on their own processes	
Present authentic tasks to contextualize learning through real-world, case-based learning environments	
Support collaboration in constructing knowledge, not competition	
Encourage development through Intersubjectivity	
Providing Scaffolding at the right time and the right level	
Provide opportunities for more expert and less expert participants to learn from each other	

Role of the student

The expectation within a constructivist learning environment is that the students plays a more active role in, and accepts more responsibility for their own learning.

Theory	Implication for classroom
The role of the student to actively participate in their own education	
Students have to accommodate & assimilate new information with their current understanding	
One important aspect of controlling their own learning process is reflecting on their experiences	
Students begin their study with pre-conceived notions	
Students are very reluctant to give up their established schema/idea & may reject new information that challenges prior knowledge	
Students may not be aware of the reasons they hold such strong ideas/schemata	
Learners need to use and test ideas, skills, and information through relevant activities	
Students need to know how to learn or change their thinking/learning style	
Because knowledge is so communally-based, learners deserve access to knowledge of different communities	
For students to learn they need to receive different 'lenses' to see things in new ways.	
Learners need guidance through the ZDP	
In social constructivism tutors and peers play a vital role in learning	

Social Constructivism in the classroom

Reciprocal Teaching

Where a teacher and 2 to 4 students form a collaborative group and take turns leading dialogues on a topic. Within the dialogues, group members apply four cognitive strategies:

1. Questioning
2. Summarizing
3. Clarifying
4. Predicting

This creates a ZPD in which students gradually assume more responsibility for the material, and through collaboratation, forge group expectations for high-level thinking, and acquire skills vital for learning and success in everyday life.

Cooperative Learning

More expert peers can also spur children's development along as long as they adjust the help they provide to fit the less mature child's ZPD.

Situated Learning

As early as 1929 concern was raised (Whitehead) that the way students learned in school resulted in a limited, 'inert' form of knowledge, useful only for passing examinations. More recently several theorists have argued that for knowledge to be active it should be learned:

- In a meaningful context
- Through active learning

The general term for this type of learning activity is situated learning. Situated learning proponents argue that knowledge cannot be taught in an abstract manner, and that to be useful, it must be situated in a relevant or "authentic" context (Maddux, Johnson, & Willis, 1997).

Anchored Instruction

The anchored instruction approach is an attempt to help students become more actively engaged in learning by situating or anchoring instruction around an interesting topic. The learning environments are designed to provoke the kinds of thoughtful engagement that helps students develop effective thinking skills and attitudes that contribute to effective problem solving and critical thinking.

Anchored instruction emphasizes the need to provide students with opportunities to think about and work on problems and emphasizes group or collaborative problem solving.

Other things you can do:

- Encourage team working and collaboration
- Promote discussion or debates
- Set up study groups for peer learning
- Allocate a small proportion of grades for peer assessment and train students in the process and criteria
- Show students models of good practice in essay writing and project work
- Be aware of your own role as a model of 'the way things are done…'be explicit about your professional values and the ethical dimensions of your subject

Assessment

Constructivists believe that assessment should be used as a tool to enhance both the student's learning and the teacher's understanding of student's progress. It should not be used as an accountability tool that serves to stress or demoralise students.

Types of assessment aligned to this epistemological position include reflective journals/portfolios, case studies, group-based projects, presentations (verbal or poster), debates, role playing etc.

Within social constructivism particularly there is greater scope for involving students in the entire process:

1. Criteria
2. Method
3. Marking
4. Feedback

Brooks and Brooks (1993) state that rather than saying "No" when a student does not give the exact answer being sought, the constructivist teacher attempts to understand the student's current thinking about the topic. Through nonjudgmental questioning, the teacher leads the student to construct new understanding and acquire new skills.

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Selected Resources

List of learning theories and how they apply to practice:
http://icebreakerideas.com/learning-theories/

List of models and good info on each:
http://carbon.cudenver.edu/~mryder/itc_data/idmodels.html

Outline of learning theories:
http://www.learning-theories.com/

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PART VIII

MODULE 6: LANGUAGE DEVELOPMENT

37. Human Language Development

Humans, especially children, have an amazing capability to learn language, and several theories exist to explain language development.

LEARNING OBJECTIVE

- Differentiate among the major theories of human language acquisition

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KEY POINTS

- B. F. Skinner believed children learn language through operant conditioning—that children receive "rewards" for using language in a functional manner.
- Noam Chomsky's theory states that children have the innate biological ability to learn language; however, his theory has not been supported by genetic or neurological studies.
- Jean Piaget's theory of language development suggests that children use both assimilation and accommodation to learn language.
- Lev Vygotsky's theory of language development focused on social learning and the zone of proximal development (ZPD).

- Several areas of the brain must function together in order for a person to develop, utilize, and understand language, including Broca's area, Wernicke's area, the primary auditory cortex, and the angular gyrus.
- Damage to any of the areas of the brain involved in language development, such as through illness or stroke, can result in problems with language and comprehension.

TERMS

- accommodationThe act of fitting or adapting, or the state of being fitted or adapted; adaptation; adjustment.
- assimilationThe absorption of new ideas into an existing cognitive structure.
- zone of proximal developmentA concept developed by Soviet psychologist and social constructivist Lev Vygotsky that describes the difference between what a learner can do without help and what he or she can do with help.
- shapingA method of positive reinforcement of behavior patterns in operant conditioning.

Theories of Language Development

Humans, especially children, have an amazing ability to learn language. Within the first year of life, children will have learned many of the necessary concepts to have functional language, although it will still take years for their capabilities to develop fully. Some people learn two or more languages fluently over their lives (often starting from childhood); these people are bilingual or

multilingual. Multiple theories have been proposed to explain the development of language, and related brain structures, in children.

Skinner: Operant Conditioning

B. F. Skinner believed that children learn language through operant conditioning; in other words, children receive "rewards" for using language in a functional manner. For example, a child learns to say the word "drink" when she is thirsty; she receives something to drink, which reinforces her use of the word for getting a drink, and thus she will continue to do so. This follows the four-term contingency that Skinner believed was the basis of language development—*motivating operations*, *discriminative stimuli*, *response*, and *reinforcing stimuli*. Skinner also suggested that children learn language through imitation of others, prompting, and shaping.

Chomsky: Language Acquisition Device

Noam Chomsky's work discusses the biological basis for language and claims that children have innate abilities to learn language. Chomsky terms this innate ability the "language acquisition device." He believes children instinctively learn language without any formal instruction. He also believes children have a natural need to use language, and that in the absence of formal language children will develop a system of communication to meet their needs. He has observed that all children make the same type of language errors, regardless of the language they are taught. Chomsky also believes in the existence of a "universal grammar," which posits that there are certain grammatical rules all human languages share. However, his

research does not identify areas of the brain or a genetic basis that enables humans' innate ability for language.

Piaget: Assimilation and Accommodation

Jean Piaget's theory of language development suggests that children use both assimilation and accommodation to learn language. Assimilation is the process of changing one's environment to place information into an already-existing schema (or idea). Accommodation is the process of changing one's schema to adapt to the new environment. Piaget believed children need to first develop mentally before language acquisition can occur. According to him, children first create mental structures within the mind (schemas) and from these schemas, language development happens.

Vygotsky: Zone of Proximal Development

Lev Vygotsky's theory of language development focused on social learning and the zone of proximal development (ZPD). The ZPD is a level of development obtained when children engage in social interactions with others; it is the distance between a child's *potential* to learn and the *actual learning* that takes place. Vygotsky's theory also demonstrated that Piaget underestimated the importance of social interactions in the development of language.

Piaget's and Vygotsky's theories are often compared with each other, and both have been used successfully in the field of education.

Language and Cognition

The following timeline gives an overview of the ages at which children generally acquire language:

- 4–6 months: Babbling using all sounds.
- 6–9 months: Babbling becomes more focused—narrowing of sounds.
- 10–12 months: First words develop.
- 18–24 months: Children begin using two-word phrases (example: "Me up" or "Get milk").
- 2–3 years: Children begin using three-word phrases in correct order with inflection.
- 4–5 years: Children start speaking with nearly complete syntax.
- 5–7 years: Children begin using and understanding more complex language.
- 9 years and older: Children understand almost all forms of language.

In language acquisition, there is a hypothesis that a "critical period," or a time when it is optimal to learn a language, exists in children. Part of this hypothesis is that if a child is not exposed to a language in the early years of life, he or she will never have full intuitive command of a first language.

One of the canonical case studies that supporters of the critical-period hypothesis turn to is Genie the "feral child," a young girl born in 1957 who, due to horrible abuse and neglect, never learned a language. She never managed to fully acquire verbal language as a result.

Source: Boundless. "Human Language Development." Boundless Psychology. Boundless, 15 Aug. 2016. Retrieved 19 Aug. 2016 from https://www.boundless.com/psychology/textbooks/boundless-psychology-textbook/language-10/human-language-408/human-language-development-235-12770/

38. Introduction to Language

Language is the ability to produce and comprehend spoken and written words; linguistics is the study of language.

LEARNING OBJECTIVE

- Describe the key properties and features of language

KEY POINTS

- Grammar is a set of rules for generating logical communication.
- All languages have a grammar, and native speakers of a language have internalized the rules of that language's grammar.
- Every language has a lexicon, or the sum total of all the words in that language.
- Phonetics and phonemics are the study of individual units of sound in languages.
- Morphology is the study of words and other meaningful units of language.
- Syntax is the study of sentences and phrases, and the rules of grammar that sentences obey.
- Semantics is the study of sentence meaning; pragmatics is the study of sentence meaning in context.

TERMS

- lexiconThe sum total of all words in a language.
- grammarThe set of rules a language obeys for creating words and sentences.

Language is the ability to produce and comprehend both spoken and written (and in the case of sign language, signed) words. Understanding how language works means reaching across many branches of psychology—everything from basic neurological functioning to high-level cognitiveprocessing. Language shapes our social interactions and brings order to our lives. Complex language is one of the defining factors that makes us human. Two of the concepts that make language unique are grammar and lexicon.

Grammar

Because all language obeys a set of combinatory rules, we can communicate an infinite number of concepts. While every language has a different set of rules, all languages do obey rules. These rules are known as grammar. Speakers of a language have internalized the rules and exceptions for that language's grammar. There are rules for every level of language—word formation (for example, native speakers of English have internalized the general rule that -ed is the ending for past-tense verbs, so even when they encounter a brand-new verb, they automatically know how to put it into past tense); phrase formation (for example, knowing that when you use the verb "buy," it needs a subject and an object; "She buys" is wrong, but "She buys a gift" is okay); and sentence formation.

Lexicon

Every language has its rules, which act as a framework for meaningful communication. But what do people fill that framework up with? The answer is, of course, words. Every human language has a lexicon—the sum total of all of the words in that language. By using grammatical rules to combine words into logical sentences, humans can convey an infinite number of concepts.

Introduction to Linguistics

Language is such a special topic that there is an entire field, linguistics, devoted to its study. Linguistics views language in an objective way, using the scientific method and rigorous research to form theories about how humans acquire, use, and sometimes abuse language. There are a few major branches of linguistics, which it is useful to understand in order to learn about language from a psychological perspective.

image

Major levels of linguistics

This diagram outlines the various subfields of linguistics, the study of language. These include phonetics, phonology, morphology, syntax, semantics, and pragmatics.

Phonetics and Phonology

Phonetics is the study of individual speech sounds; phonology is the

study of phonemes, which are the speech sounds of an individual language. These two heavily overlapping subfields cover all the sounds that humans can make, as well as which sounds make up different languages. A phonologist could answer the question, "Why do BAT and TAB have different meanings even though they are made of the same three sounds, A, B and T?"

Morphology

Morphology is the study of words and other meaningful units of language like suffixes and prefixes. A morphologist would be interested in the relationship between words like "dog" and "dogs" or "walk" and "walking," and how people figure out the differences between those words.

Syntax

Syntax is the study of sentences and phrases, or how people put words into the right order so that they can communicate meaningfully. All languages have underlying rules of syntax, which, along with morphological rules, make up every language's grammar. An example of syntax coming into play in language is "Eugene walked the dog" versus "The dog walked Eugene." The order of words is not arbitrary—in order for the sentence to convey the intended meaning, the words must be in a certain order.

Semantics and Pragmatics

Semantics, most generally, is about the meaning of sentences.

Someone who studies semantics is interested in words and what real-world object or concept those words denote, or point to. Pragmatics is an even broader field that studies how the context of a sentence contributes to meaning—for example, someone shouting "Fire!" has a very different meaning if they are in charge of a seven-gun salute than it does if they are sitting in a crowded movie theater.

39. The Structure of Language

All languages have underlying structural rules that make meaningful communication possible.

LEARNING OBJECTIVE

- Explain the hierarchy of the building blocks of language

KEY POINTS

- The five main components of language are phonemes, morphemes, lexemes, syntax, and context. Along with grammar, semantics, and pragmatics, these components work together to create meaningful communication among individuals.
- A phoneme is the smallest unit of sound that may cause a change of meaning within a language but that doesn't have meaning by itself.
- A morpheme is the smallest unit of a word that provides a specific meaning to a string of letters (which is called a phoneme). There are two main types of morpheme: free morphemes and bound morphemes.
- A lexeme is the set of all the inflected forms of a single word.
- Syntax is the set of rules by which a person constructs full sentences.
- Context is how everything within language works together

to convey a particular meaning.

TERMS

- lexemeThe set of inflected forms taken by a single word.
- phonemeAn indivisible unit of sound in a given language.
- morphemeThe smallest linguistic unit within a word that can carry a meaning, such as “un-“, “break”, and “-able” in the word “unbreakable.”

Every language is different. In English, an adjective comes before a noun (“red house”), whereas in Spanish, the adjective comes after (“casa [house] roja [red].”) In German, you can put noun after noun together to form giant compound words; in Chinese, the pitch of your voice determines the meaning of your words; in American Sign Language, you can convey full, grammatical sentences with tense and aspect by moving your hands and face. But all languages have structural underpinnings that make them logical for the people who speak and understand them.

An interactive or media element has been excluded from this version of the text. You can view it online here: https://library.achievingthedream.org/hostoschilddevelopmenteducation/?p=62

Rapping in American Sign Language

Shelby Mitchusson performs an ASL translation of "Lose Yourself" by Eminem. ASL and other sign languages have all the same structural underpinnings that spoken languages do.

Five major components of the structure of language are phonemes, morphemes, lexemes, syntax, and context. These pieces all work together to create meaningful communication among individuals.

image

Major levels of linguistic structure

This diagram outlines the relationship between types of linguistic units. Speech sounds make up phonemes, which make up words. Words make up sentences, which have literal meanings and contextual meanings.

Phonemes

A phoneme is the basic unit of phonology. It is the smallest unit of sound that may cause a change of meaning within a language, but

that doesn't have meaning by itself. For example, in the words "bake" and "brake," only one phoneme has been altered, but a change in meaning has been triggered. The phoneme /r/ has no meaning on its own, but by appearing in the word it has completely changed the word's meaning!

Phonemes correspond to the sounds of the alphabet, although there is not always a one-to-one relationship between a letter and a phoneme (the sound made when you say the word). For example, the word "dog" has three phonemes: /d/, /o/, and /g/. However, the word "shape," despite having five letters, has only three phonemes: /sh/, /long-a/, and /p/. The English language has approximately 45 different phonemes, which correspond to letters or combinations of letters. Through the process of segmentation, a phoneme can have a particular pronunciation in one word and a slightly different pronunciation in another.

Morphemes

Morphemes, the basic unit of morphology, are the smallest meaningful unit of language. Thus, a morpheme is a series of phonemes that has a special meaning. If a morpheme is altered in any way, the entire meaning of the word can be changed. Some morphemes are individual words (such as "eat" or "water"). These are known as free morphemes because they can exist on their own. Other morphemes are prefixes, suffixes, or other linguistic pieces that aren't full words on their own but do affect meaning (such as the "-s" at the end of "cats" or the "re-" at the beginning of "redo.") Because these morphemes must be attached to another word to have meaning, they are called bound morphemes.

Within the category of bound morphemes, there are two additional subtypes: derivational and inflectional. Derivational morphemes change the meaning or part of speech of a word when they are used together. For example, the word "sad" changes from

an adjective to a noun when "-ness" (sadness) is added to it. "Action" changes in meaning when the morpheme "re-" is added to it, creating the word "reaction." Inflectional morphemes modify either the tense of a verb or the number value of a noun; for example, when you add an "-s" to "cat," the number of cats changes from one to more than one.

Lexemes

Lexemes are the set of inflected forms taken by a single word. For example, members of the lexeme RUN include "run" (the uninflected form), "running" (inflected form), and "ran." This lexeme excludes "runner" (a derived term—it has a derivational morpheme attached).

Another way to think about lexemes is that they are the set of words that would be included under one entry in the dictionary—"running" and "ran" would be found under "run," but "runner" would not.

Syntax

Syntax is a set of rules for constructing full sentences out of words and phrases. Every language has a different set of syntactic rules, but all languages have some form of syntax. In English, the smallest form of a sentence is a noun phrase (which might just be a noun or a pronoun) and a verb phrase (which may be a single verb). Adjectives and adverbs can be added to the sentence to provide further meaning. Word order matters in English, although in some languages, order is of less importance. For example, the English sentences "The baby ate the carrot" and "The carrot ate the baby" do not mean the same thing, even though they contain the exact same words. In languages like Finnish, word order doesn't

matter for general meaning—different word orders are used to emphasize different parts of the sentence.

Context

Context is how everything within language works together to convey a particular meaning. Context includes tone of voice, body language, and the words being used. Depending on how a person says something, holds his or her body, or emphasizes certain points of a sentence, a variety of different messages can be conveyed. For example, the word "awesome," when said with a big smile, means the person is excited about a situation. "Awesome," said with crossed arms, rolled eyes, and a sarcastic tone, means the person is not thrilled with the situation.

40. Human Language and the Brain

Several areas of the brain must function together in order for a person to develop, use, and understand language.

LEARNING OBJECTIVE

- Describe the role each brain structure involved in language production

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KEY POINTS

- Broca's area is primarily responsible for language production; damage to this area results in productive aphasia.
- Wernicke's area is primarily responsible for language comprehension; damage to this area results in receptive aphasia.
- The primary auditory cortex identifies pitch and loudness of sounds.
- The angular gyrus is responsible for several language processes, including (but not limited to) attention and number processing.

TERM

- aphasiaA loss of the ability to produce or understand language.

Without the brain, there would be no language. The human brain has a few areas that are specific to language processing and production. When these areas are damaged or injured, capabilities for speaking or understanding can be lost, a disorder known as aphasia. These areas must function together in order for a person to develop, use, and understand language.

image

Language and the brain

The areas of the brain necessary for processing language: Broca's area, Wernicke's area, the primary motor cortex, the posterior middle temporal gyrus, and the middle and posterior superior temporal gyrus.

Broca's Area

Broca's area, located in the frontal lobe of the brain, is linked to speech production, and recent studies have shown that it also plays a significant role in language comprehension. Broca's area works in conjunction with working memory to allow a person to use verbal expression and spoken words. Damage to Broca's area can result in productive aphasia (also known as Broca's aphasia), or an inability to speak. Patients with Broca's can often still understand language, but they cannot speak fluently.

Wernicke's Area

Wernicke's area, located in the cerebral cortex, is the part of the brain involved in understanding written and spoken language. Damage to this area results in receptive aphasia (also called Wernicke's aphasia). This type of aphasia manifests itself as a loss of comprehension, so sometimes while the patient can apparently still speak, their language is nonsensical and incomprehensible.

image

Language and the brain

The areas of the brain necessary for language. Spoken word, cognition, and written word all are processed in different parts of the brain in different orders.

Auditory Cortex and Angular Gyrus

The primary auditory cortex, located in the temporal lobe and connected to the auditory system, is organized so that it responds to neighboring frequencies in the other cells of the cortex. It is responsible for identifying pitch and loudness of sounds.

The angular gyrus, located in the parietal lobe of the brain, is responsible for several language processes, including number processing, spatial recognition and attention.

41. Linguistic Relativity

Language and thought tend to influence one another in a dual, cyclical relationship.

LEARNING OBJECTIVE

- Characterize the relationship between language and thought in humans

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KEY POINTS

- The theory of linguistic relativity states that the structure of a language influences the way its speakers conceptualize the world.
- The Sapir-Whorf hypothesis discusses the grammatical structure of a particular language and how it influences its speakers' perceptions of the world.
- Cognitive-behavioral theory claims that what people think impacts what they say and do.
- According to behavioral economics, people are more likely to believe an event is true if it is described vividly.

TERMS

- semanticsThe study of the relationship between words and their meanings.
- cognitive distortionExaggerated and irrational thoughts, believed to perpetuate psychological disorders.

It is easy to wonder which comes first, the thought or the language. Does an individual first think of an idea or did speaking, hearing, or reading about an idea spur a thought? Can thought exist without language? You might as well ask which came first, the chicken or the egg.

Language and thought (or "cognition") tend to interact in a dual and cyclical relationship, a theory known overall as linguistic relativity. What one thinks becomes what one communicates, and what one communicates can lead to new thoughts. There are several different theories that aim to discuss the relationship between cognition and language, and each will be discussed in this chapter.

The Sapir-Whorf Hypothesis

The Sapir-Whorf hypothesis states that the grammatical structure of a person's language influences the way he or she perceives the world. The hypothesis has been largely abandoned by linguists as it has found at best very limited experimental support, and it does not hold much merit in psychology. For instance, studies have not shown that speakers of languages lacking a subjunctive mood (such as Chinese) experience difficulty with hypothetical problems. The weaker version of this theory does have some merit, however. For example, different words mean different things in different languages; not every word in every language has a one-to-one exact translation in a different language. Because of these small but

important differences, using the wrong word within a particular language (because you believe it to mean something else) can have dire consequences.

The canonical example of studying linguistic relativity is in the area of color naming. Sapir and Whorf, as believers in linguistic relativity, would believe that people whose languages partition the color spectrum along different lines actually perceive colors in a different way. However, recent research has supported the idea that human color perception is governed more by biological and physical rather than linguistic constraints, regardless of how many color words a language has.

Cognitive-Behavioral Therapy

According to the theory that drives cognitive-behavioral therapy, the way a person thinks has a huge impact on what she or he says and does. Founded by Aaron T. Beck, this school of thought discusses the interplay among emotion, behavior, language, and thought. Since internal dialogue is a form of language, the way we speak to ourselves can influence our daily lives. Problems with our internal dialogue, known as cognitive distortions, can lead to negative behaviors or serious emotional problems.

Behavioral Economics

The field of behavioral economics studies the effect of psychological and cognitive factors on individuals' behavior in an economic context. In this field (and others), researchers have shown that the more vividly an event is described, the more likely people will believe it is true. Thus, people will draw different conclusions and

make different choices about a situation based on the language used to describe that situation.

image

Language and thought

What a person thinks (thought) has a direct impact on what that person says (language), and vice versa.

PART IX

MODULE 7: INFANCY

42. Physical Development

Overall Physical Growth

The average newborn in the United States weighs about 7.5 pounds and is about 20 inches in length. For the first few days of life, infants typically lose about 5 percent of their body weight as they eliminate waste and get used to feeding. This often goes unnoticed by most parents, but can be cause for concern for those who have a smaller infant. This weight loss is temporary, however, and is followed by a rapid period of growth. By the time an infant is 4 months old, it usually doubles in weight and by one year has tripled it birth weight. By age 2, the weight has quadrupled. The average length at one year is about 26-32 inches.

Body Proportions

Another dramatic physical change that takes place in the first several years of life is the change in body proportions. The head initially makes up about 50 percent of our entire length when we are developing in the womb. At birth, the head makes up about 25 percent of our length (think about how much of your length would be head if the proportions were still the same!). By age 25 it comprises about 20 percent our length. Imagine now how difficult it must be to raise one's head during the first year of life! And indeed, if you have ever seen a 2 to 4 month old infant lying on the stomach trying to raise the head, you know how much of a challenge this is.

The Brain in the First Two Years

Some of the most dramatic physical change that occurs during this period is in the brain. At birth, the brain is about 25 percent its adult weight and this is not true for any other part of the body. By age 2, it is at 75 percent its adult weight, at 95 percent by age 6 and at 100 percent by age 7 years.

While most of the brain's 100 to 200 billion neurons are present at birth, they are not fully mature and during the next several years dendrites or connections between neurons will undergo a period of transient exuberance or temporary dramatic growth. There is a proliferation of these dendrites during the first two years so that by age 2, a single neuron might have thousands of dendrites. After this dramatic increase, the neural pathways that are not used will be eliminated thereby making those that are used much stronger. This activity is occurring primarily in the cortex or the thin outer covering of the brain involved in voluntary activity and thinking. The prefrontal cortex that is located behind our forehead continues to grow and mature throughout childhood and experiences an addition growth spurt during adolescence. It is the last part of the brain to mature and will eventually comprise 85 percent of the brain's weight. Experience will shape which of these connections are maintained and which of these are lost. Ultimately, about 40 percent of these connections will be lost (Webb, Monk, and Nelson, 2001). As the prefrontal cortex matures, the child is increasingly able to regulate or control emotions, to plan activity, strategize, and have better judgment. Of course, this is not fully accomplished in infancy and toddlerhood, but continues throughout childhood and adolescence.

Another major change occurring in the central nervous system is the development of myelin, a coating of fatty tissues around the axon of the neuron. Myelin helps insulate the nerve cell and speed the rate of transmission of impulses from one cell to another. This enhances the building of neural pathways and improves

coordination and control of movement and thought processes. The development of myelin continues into adolescence but is most dramatic during the first several years of life.

From Reflexes to Voluntary Movements

Infants are equipped with a number of reflexes which are involuntary movements in response to stimulation. These include the sucking reflex (infants suck on objects that touch their lips automatically), the rooting reflex, which involves turning toward any object that touches the cheek, the palmar grasp (the infant will tightly grasp any object placed in its palm), and the dancing reflex evidence when the infant is held in a standing position and moves its feet up and down alternately as if dancing. These movements occur automatically and are signals that the infant is functioning well neurologically. Within the first several weeks of life these reflexes are replaced with voluntary movements or motor skills.

Gross Motor Skills

These voluntary movements involve the use of large muscle groups and are typically large movements of the arms, legs, head, and torso. These skills begin to develop first. Examples include moving to bring the chin up when lying on the stomach, moving the chest up, rocking back and forth on hands and knees. But it also includes exploring an object with one's feet as many babies do as early as 8 weeks of age if seated in a carrier or other devise that frees the hips. This may be easier than reaching for an object with the hands, which requires much more practice (Berk, 2007). And sometimes an infant will try to move toward an object while crawling and

surprisingly move backward because of the greater amount of strength in the arms than in the legs!

Fine Motor Skills

Fine motor skills are more exact movements of the hands and fingers and include the ability to reach and grasp an object. Newborns cannot grasp objects voluntarily but do wave their arms toward objects of interest. At about 4 months of age, the infant is able to reach for an object, first with both arms and within a few weeks, with only one arm. Grasping an object involves the use of the fingers and palm, but no thumbs. Stop reading for a moment and try to grasp an object using these fingers and the palm. How does that feel? How much control do you have over the object? If it is a pen or pencil, are you able to write with it? Can you draw a picture? The answer is probably not. Use of the thumb comes at about 9 months of age when the infant is able to grasp an object using the forefinger and thumb. This ability greatly enhances the ability to control and manipulate an object and infants take great delight in this newfound ability. They may spend hours picking up small objects from the floor and placing them in containers. By 9 months, an infant can also watch a moving object, reach for it as it approaches and grab it. This is quite a complicated set of actions if we remember how difficult this would have been just a few months earlier.

Sensory Development

Vision

The womb is a dark environment void of visual

stimulation. Consequently, vision is the most poorly developed sense at birth. Newborns typically cannot see further than 8 to 16 inches away from their faces, have difficulty keeping a moving object within their gaze, and can detect contrast more than color differences. If you have ever seen a newborn struggle to see, you can appreciate the cognitive efforts being made to take in visual stimulation and build those neural pathways between the eye and the brain. When you glance at a person, where do you look? Chances are you look into their eyes. If so why? It is probably because there is more information there than in other parts of the face. Newborns do not scan objects this way; rather, they tend to look at the chin another less detailed part of the face. However, by 2 or 3 months, they will seek more detail when exploring an object visually and begin showing preferences for unusual images over familiar ones and for patterns over solids and faces over patterns and three-dimensional objects over flat images. Newborns have difficulty distinguishing between colors, but within a few months are able to discrimination between colors as well as do adults. Infants can also sense depth as binocular vision develops at about 2 months of age. By 6 months, the infant can perceive depth perception in pictures as well (Sen, Yonas, and Knill, 2001). Infants who have experience crawling and exploring will pay greater attention to visual cues of depth and modify their actions accordingly (Berk, 2007).

Hearing

The infant's sense of hearing is very keen at birth. If you remember, this ability to hear is evidenced as soon as the 5th month of prenatal development. In fact, an infant can distinguish between very similar sounds as early as one month after birth and can distinguish between a familiar and non-familiar voice even earlier. Some of this ability will be lost by 7 or 8 months as a child becomes familiar with

the sounds of a particular language and less sensitive to sounds that are part of an unfamiliar language.

Other senses

Newborns can distinguish between sour, bitter, sweet, and salty flavors and show a preference for sweet flavors. They are sensitive to touch and can distinguish between their mother's scent and that of others.

43. Nutrition

Breast milk is considered the ideal diet for newborns. It has the right amount of calories, fat, and protein to support overall physical and neurological development, it provides a source of iron more easily absorbed in the body than the iron found in dietary supplements, it provides a resistance against many diseases, it is more easily digested by infants than is formula, and it helps babies make a transition to solid foods more easily than if bottle fed. For all of these reasons, it is recommended that mothers breast feed their infants until at least 6 months of age and that breast milk be used in the diet throughout the first year (U.S. Department of Health and Human Services, 2004a in Berk, 2007).

However, most mothers who breastfeed in the United States stop breast feeding at about 6-8 weeks, often in order to return to work outside the home. Mothers can certainly continue to provide breast milk to their babies by expressing and freezing the milk to be bottle fed at a later time or by being available to their infants at feeding time, but some mothers find that after the initial encouragement they receive in the hospital to breast feed, the outside world is less supportive of such efforts. Some workplaces support breastfeeding mothers by providing flexible schedules and welcoming infants, but many do not. And the public support of breastfeeding is sometimes lacking. Women in Canada are more likely to breastfeed than are those in the United States and the Canadian health recommendation is for breastfeeding to continue until 2 years of age. Facilities in public places in Canada such as malls, ferries, and workplaces provide more support and comfort for the breastfeeding mother and child than found in the United States.

One early argument given to promote the practice of breastfeeding was that it promoted bonding and healthy emotional development for infants. However, this does not seem to be the case. Breastfed and bottle-fed infants adjust equally well

emotionally (Ferguson and Woodward, 1999). This is good news for mothers who may be unable to breastfeed for a variety of reasons and for fathers who might feel left out as a result.

In addition to the nutritional benefits of breastfeeding, breast milk is free! Anyone who has priced formula recently can appreciate this added incentive to breastfeeding. Prices for a month's worth of formula can easily range from $130-200. Breastfeeding also stimulates contractions in the uterus to help it regain its normal size. And women who breastfeed are more likely to space their pregnancies further apart.

An historic look at breastfeeding

The use of wet nurses, or lactating women hired to nurse others' infants, during the middle ages eventually declined and mothers increasingly breastfed their own infants in the late 1800s. In the early part of the 20th century, breastfeeding began to go through another decline and by the 1950s, it was practiced less frequently by middle class, more affluent mothers as formula began to be viewed as superior to breast milk. In the late 1960s and 1970s, greater emphasis began to be placed on natural childbirth and breastfeeding and the benefits of breastfeeding were more widely publicized. Gradually rates of breastfeeding began to climb, particularly among middle-class educated mothers who received the strongest messages to breastfeed. Today, women receive consultation from lactation specialists before being discharged from the hospital to ensure that they are informed of the benefits of breastfeeding and given support and encouragement to get their infants to get used to taking the breast. This does not always happen immediately and first time mothers, especially, can become upset or discouraged. In this case, lactation specialists and nursing staff can encourage the mother to keep trying until baby and mother are comfortable with the feeding.

Global Considerations and Malnutrition

In the 1960s, formula companies led campaigns in developing countries to encourage mothers to feed their babies on infant formula. Many mothers felt that formula would be superior to breast milk and began using formula. The use of formula can certainly be healthy under conditions in which there is adequate, clean water with which to mix the formula and adequate means to sanitize bottles and nipples. However, in many of these countries such conditions were not available and babies often were given diluted, contaminated formula which made them become sick with diarrhea and become dehydrated. Rates of breast feeding declined in Peru from 90 percent to 10 percent in just 8 years time (Berger, 2001). These conditions continue today and now many hospitals prohibit the distribution of formula samples to new mothers in efforts to get them to rely on breast feeding. Many of these mothers do not understand the benefits of breast feeding and have to be encouraged and supported in order to promote this practice. Breast feeding could save the lives of millions of infants each year, according to the World Health Organization, yet fewer than 40 percent of infants are breastfed exclusively for the first 6 months of life. Find out more at the WHO's 10 facts on breastfeeding. Most women can breastfeed unless they are receiving chemotherapy or radiation therapy, have HIV, are dependent on illicit drugs, or have active, untreated tuberculosis.

Children in developing countries and countries experiencing the harsh conditions of war are at risk for two major types of malnutrition. Infantile marasmus refers to starvation due to a lack of calories and protein. Children who do not receive adequate nutrition lose fat and muscle until their bodies can no longer function. Babies who are breast fed are much less at risk of malnutrition than those who are bottle fed. After weaning, children who have diets deficient in protein may experience kwashiorkor or the "disease of the displaced child" often occurring after another

child has been born and taken over breastfeeding. This results in a loss of appetite and swelling of the abdomen as the body begins to break down the vital organs as a source of protein.

Kwashiorkor (Photo Courtesy Centers for Disease Control and Prevention)

The Breast Milk Industry

The benefits of breast milk are well-known and publicized. The collection and distribution of breast milk has become a million dollar industry supplying hospitals and others in need of the ideal diet. For more information, go to www.prolacta.com to see a current development in the story of breast milk.

Milk Anemia in the United States

About 9 million children in the United States are malnourished (Children's Welfare, 1998). More still suffer from milk anemia, a

condition in which milk consumption leads to a lack of iron in the diet. This can be due to the practice of giving toddlers milk as a pacifier-when resting, when riding, when waking, and so on. Appetite declines somewhat during toddlerhood and a small amount of milk (especially with added chocolate syrup) can easily satisfy a child's appetite for many hours. The calcium in milk interferes with the absorption of iron in the diet as well. Many preschools and daycare centers give toddlers a drink after they have finished their meal in order to prevent spoiling their appetites.

44. Cognitive Development

Piaget and Sensorimotor Intelligence

Remember our discussion of sensorimotor development during the first two years of life. Piaget describes intelligence in infancy as sensorimotor or based on direct, physical contact. Infants taste, feel, pound, push, hear, and move in order to experience the world. Let's explore the transition infants make from responding to the external world reflexively as newborns to solving problems using mental strategies as two year olds.

Stage One: Reflexive Action: (Birth through 1st month)

This active learning begins with automatic movements or reflexes. A ball comes into contact with an infant's cheek and is automatically sucked on and licked. But this is also what happens with a sour lemon, much to the infant's surprise!

Stage Two: First Adaptations to the Environment (1st through 4th month)

Fortunately, within a few days or weeks, the infant begins to discriminate between objects and adjust responses accordingly as reflexes are replaced with voluntary movements. An infant may accidentally engage in a behavior and find it interesting such as making a vocalization. This interest motivates trying to do it again and helps the infant learn a new behavior that originally occurred by chance. At first, most actions have to do with the body, but in months to come, will be directed more toward objects.

Stage Three: Repetition (4th through 8th months)

During the next few months, the infant becomes more and more actively engaged in the outside world and takes delight in being able to make things happen. Repeated motion brings particular interest as the infant is able to bang two lids together from the cupboard when seated on the kitchen floor.

Stage Four: New Adaptations and Goal-Directed Behavior (8th through 12th months)

Now the infant can engage in behaviors that others perform and anticipate upcoming events. Perhaps because of continued maturation of the prefrontal cortex, the infant become capable of having a thought and carrying out a planned, goal-directed activity such as seeking a toy that has rolled under the couch. The object continues to exist in the infant's mind even when out of sight and the infant now is capable of making attempts to retrieve it. Here is an example of a lack of object permanence.

Was Piaget correct? Infants seem to be able to recognize that objects have permanence at much younger ages (even as young as 3.5 months of age).

Dr. Rene Baillargeon explains in the following clip:

A YouTube element has been excluded from this version of the text. You can view it online here: https://library.achievingthedream.org/hostoschilddevelopmenteducation/?p=68

Stage Five: Active Experimentation of Little Scientists (12th through 18th months)

Infants from one year to 18 months of age more actively engage in experimentation to learn about the physical world. Gravity is learned by pouring water from a cup or pushing bowls from high chairs. The caregiver tries to help the child by picking it up again and placing it on the tray. And what happens? Another experiment! The child pushes it off the tray again causing it to fall and the caregiver to pick it up again! A closer examination of this stage causes us to really appreciate how much learning is going on at this time and how many things we come to take for granted must actually be learned. I remember handing my daughters (who are close in age) when they were both seated in the back seat of the car a small container of candy. They struggled to move the pieces up and out of the small box and became frustrated when their fingers would lose their grip on the treats before they made it up and out of the top of the boxes. They had not yet learned to simply use gravity and turn the box over in their hands! This is a wonderful and messy time of experimentation and most learning occurs by trial and error.

Stage Six: Mental Representations (18th month to 2 years of age)

The child is now able to solve problems using mental strategies, to remember something heard days before and repeat it, to engage in pretend play, and to find objects that have been moved even when out of sight. Take for instance, the child who is upstairs in a room with the door closed, supposedly taking a nap. The doorknob has a safety device on it that makes it impossible for the child to turn the knob. After trying several times in vain to push the door or turn the doorknob, the child carries out a mental strategy to get the door opened-he knocks on the door! Obviously, this is a technique learned from the past experience of hearing a knock on the door and observing someone opening the door. The child is now better equipped with mental strategies for problem-solving. This initial movement from the "hands-on" approach to knowing about the world to the more mental world of stage six marked the transition

to preoperational intelligence that we will discuss in the next lesson. Part of this stage involves learning to use language.

45. Language Development

Newborn Communication

Baby boy at 8 months.

Do newborns communicate? Certainly, they do. They do not, however, communicate with the use of language. Instead, they communicate their thoughts and needs with body posture (being relaxed or still), gestures, cries, and facial expressions. A person who spends adequate time with an infant can learn which cries indicate pain and which ones indicate hunger, discomfort, or frustration.

Intentional Vocalizations: Cooing and taking turns: Infants begin to vocalize and repeat vocalizations within the first couple of months of life. That gurgling, musical vocalization called cooing can serve as a source of entertainment to an infant who has been laid down for a nap or seated in a carrier on a car ride. Cooing serves as practice for vocalization as well as the infant hears the sound of his or her own voice and tries to repeat sounds that are entertaining. Infants also begin to learn the pace and pause of conversation as they alternate their vocalization with that of someone else and then take their turn again when the other person's vocalization has stopped. Cooing initially involves making vowel sounds like "oooo". Later, consonants are added to vocalizations such as "nanananananana".

Babbling and gesturing: At about four to six months of age, infants begin making even more elaborate vocalizations that include the sounds required for any language. Guttural sounds, clicks,

consonants, and vowel sounds stand ready to equip the child with the ability to repeat whatever sounds are characteristic of the language heard. Eventually, these sounds will no longer be used as the infant grow more accustomed to a particular language. Deaf babies also use gestures to communicate wants, reactions, and feelings. Because gesturing seems to be easier than vocalization for some toddlers, sign language is sometimes taught to enhance one's ability to communicate by making use of the ease of gesturing. The rhythm and pattern of language is used when deaf babies sign just as it is when hearing babies babble.

Understanding: At around ten months of age, the infant can understand more than he or she can say. You may have experienced this phenomenon as well if you have ever tried to learn a second language. You may have been able to follow a conversation more easily than to contribute to it.

Holophrasic speech: Children begin using their first words at about 12 or 13 months of age and may use partial words to convey thoughts at even younger ages. These one word expressions are referred to as holophrasic speech. For example, the child may say "ju" for the word "juice" and use this sound when referring to a bottle. The listener must interpret the meaning of the holophrase and when this is someone who has spent time with the child, interpretation is not too difficult. They know that "ju" means "juice" which means the baby wants some milk! But, someone who has not been around the child will have trouble knowing what is meant. Imagine the parent who to a friend exclaims, "Ezra's talking all the time now!" The friend hears only "ju da ga" which, the parent explains, means "I want some milk when I go with Daddy."

Underextension: A child who learns that a word stands for an object may initially think that the word can be used for only that particular object. Only the family's Irish Setter is a "doggie". This is referred to as underextension. More often, however, a child may think that a label applies to all objects that are similar to the original object. In overextension all animals become "doggies", for example.

First words and cultural influences: First words if the child is

using English tend to be nouns. The child labels objects such as cup or ball. In a verb-friendly language such as Chinese, however, children may learn more verbs. This may also be due to the different emphasis given to objects based on culture. Chinese children may be taught to notice action and relationship between objects while children from the United States may be taught to name an object and its qualities (color, texture, size, etc.). These differences can be seen when comparing interpretations of art by older students from China and the United States.

Vocabulary growth spurt: One year olds typically have a vocabulary of about 50 words. But by the time they become toddlers, they have a vocabulary of about 200 words and begin putting those words together in telegraphic speech (I think of it now as 'text message' speech because texting is more common and is similar in that text messages typically only include the minimal amout of words to convey the message).

Two word sentences and telegraphic (text message?) speech: Words are soon combined and 18 month old toddlers can express themselves further by using expressions such as "baby bye-bye" or "doggie pretty". Words needed to convey messages are used, but the articles and other parts of speech necessary for grammatical correctness are not yet used. These expressions sound like a telegraph (or perhaps a better analogy today would be that they read like a text message) where unnecessary words are not used. "Give baby ball" is used rather than "Give the baby the ball." Or a text message of "Send money now!" rather than "Dear Mother. I really need some money to take care of my expenses" You get the idea.

Child-directed speech: Why is a horse a "horsie"? Have you ever wondered why adults tend to use "baby talk" or that sing-song type of intonation and exaggeration used when talking to children? This represents a universal tendency and is known as child-directed speech or motherese or parentese. It involves exaggerating the vowel and consonant sounds, using a high-pitched voice, and delivering the phrase with great facial expression. Why is this

done? It may be in order to clearly articulate the sounds of a word so that the child can hear the sounds involved. Or it may be because when this type of speech is used, the infant pays more attention to the speaker and this sets up a pattern of interaction in which the speaker and listener are in tuned with one another. When I demonstrate this in class, the students certainly pay attention and look my way. Amazing! It also works in the college classroom!

Theories of Language Development

The first two theories of language development represent two extremes in the level of interaction required for language to occur (Berk, 2007).

Chomsky and the language acquisition device: The view known as nativism advocated by Noam Chomsky suggests that infants are equipped with a neurological construct referred to as the language acquisition device or LAD that makes infants ready for language. Language develops as long as the infant is exposed to it. No teaching, training, or reinforcement is required for language to develop.

Skinner and reinforcement: Learning theorist, B. F. Skinner, suggests that language develops through the use of reinforcement. Sounds, words, gestures and phrases are encouraged through by following the behavior with words of praise or treats or any thing that increases the likelihood that the behavior will be repeated.

Social pragmatics: Another view emphasizes the child's active engagement in learning language out of a need to communicate. The child seeks information, memorizes terms, imitates the speech heard from others and learns to conceptualize using words as language is acquired. Many would argue that all three of these dynamics foster the acquisition of language (Berger, 2004).

46. Psychosocial Development

Erikson's Stages for Infants and Toddlers

Trust vs. mistrust: Erikson maintained that the first year to year and a half of life involves the establishment of a sense of trust. Infants are dependent and must rely on others to meet their basic physical needs as well as their needs for stimulation and comfort. A caregiver who consistently meets these needs instills a sense of trust or the belief that the world is a trustworthy place. The caregiver should not worry about overly indulging a child's need for comfort, contact or stimulation. This view is in sharp contrast with the Freudian view that a parent who overly indulges the infant by allowing them to suck too long or be picked up too frequently will be spoiled or become fixated at the oral stage of development.

Problems establishing trust: Consider the implications for establishing trust if a caregiver is unavailable or is upset and ill-prepared to care for a child. Or if a child is born prematurely, is unwanted, or has physical problems that make him or her less desirable to a parent. Unwanted pregnancies can be experienced by busy, upper-middle class professional couples as well as young, unmarried mothers, or couples in the midst of relational strains. Under these circumstances, we cannot assume that the parent is going to provide the child with a feeling of trust. However, keep in mind that children can also exhibit strong resiliency to harsh circumstances. Resiliency can be attributed to certain personality factors, such as an easy-going temperament and receiving support from others. So a positive and strong support group can help a parent and child build a strong foundation by offering assistance and positive attitudes toward the newborn and parent.

Autonomy vs. shame and doubt: As the child begins to walk and talk, an interest in independence or autonomy replaces a concern for trust. The toddler tests the limits of what can be touched, said, and explored. Erikson believed that toddlers should be allowed to explore their environment as freely as safety allows and in so doing will develop a sense of independence that will later grow to self-esteem, initiative, and overall confidence. If a caregiver is overly anxious about the toddler's actions for fear that the child will get hurt or violate other's expectation, the caregiver can give the child the message that he or she should be ashamed of their behavior and instill a sense of doubt in their own abilities. Parenting advice based on these ideas would be to keep your toddler safe, but let him or her learn by doing. A sense of pride seems to rely on doing rather than being told how capable one is as well (Berger, 2005).

Conclusion

We have explored the dramatic story of the first two years of life. Rapid physical growth, neurological development, language acquisition, the movement from hands on to mental learning, an expanding emotional repertoire, and the initial conceptions of self

and others make this period of life very exciting. These abilities are shaped into more sophisticated mental processes, self-concepts, and social relationships during the years of early childhood.

47. Video: What Do Babies Think?

Watch this TED talk by Alison Gopnik to learn about how recent discoveries show us that babies are probably smarter than we think.

A YouTube element has been excluded from this version of the text. You can view it online here: https://library.achievingthedream.org/hostoschilddevelopmenteducation/?p=71

PART X

MODULE 8: PRENATAL DEVELOPMENT

48. Introduction to Heredity, Prenatal Development, and Birth

Learning Objectives

At the end of this lesson, you will be able to

1. Define gene.
2. Define chromosome.
3. Define gamete.
4. Explain what determines the chromosomal sex of the child.
5. Question the assertion that human traits are genetic.
6. Compare monozygotic and dizygotic twins.
7. Differentiate between genetic disorders and chromosomal abnormalities.
8. Describe Trisomy 21.
9. Differentiate between the germinal, embryonic, and fetal periods of development.
10. Describe human development during the germinal, embryonic, and fetal periods.
11. Describe a normal delivery and complications of pregnancy and delivery.
12. Predict the risks to prenatal development posed by exposure to teratogens.

13. Interpret APGAR scores.
14. Discover problems of newborns

Heredity: The Epigenetic Framework

Nature or Nurture?

In this lesson, we will look at some of the ways in which heredity helps to shape the way we are. We will look at what happens genetically during conception and take a brief look some genetic abnormalities. Before going into these topics, however, it is important to emphasize the interplay between heredity and the environment. Why are you the way you are? As you consider some of your features (height, weight, personality, being diabetic, etc.), ask yourself whether these features are a result of heredity or environmental factors-or both. Chances are, you can see the ways in which both heredity and environmental factors (such as lifestyle, diet, and so on) have contributed to these features. For decades, scholars have carried on the "nature/nurture" debate. For any particular feature, those on the "nature" side would argue that heredity plays the most important role in bringing about that feature. Those on the "nurture" side would argue that one's environment is most significant in shaping the way we are. This debate continues in questions about what makes us masculine or feminine (Lippa, 2002), concerns about vision (Mutti, Kadnik and Adams, 1996), and many other developmental issues. (Check out www.googlescholar.com for over 20,000 entries for "current nature/nurture debates"!) Yet most scholars agree that there is a

constant interplay between the two forces. It is difficult to isolate the root of any single behavior as a result solely of nature or nurture and most scholars believe that even determining the extent to which nature or nurture impacts a human feature is difficult to answer. In fact, almost all human features are polygenic (a result of many genes) and multifactorial (a result of many factors, both genetic and environmental). It's as if one's genetic make-up sets up a range of possibilities, which may or may not be realized depending upon one's environmental experiences. For instance, a person might be genetically predisposed to develop diabetes, but the person's lifestyle may help bring about the disease.

The Epigenetic Framework

Gottlieb (1998, 2000, 2002) suggests an analytic framework for the nature/nurture debate that recognizes the interplay between the environment, behavior, and genetic expression. This bidirectional interplay suggests that the environment can effect the expression of genes just as genetic predispositions can impact a person's potentials. And environmental circumstances can trigger symptoms of a genetic disorder. For example, a person who has sickle cell anemia, a recessive gene linked disorder, can experience a sickle cell crisis under conditions of oxygen deprivation. Someone predisposed genetically for type two diabetes can trigger the disease through poor diet and little exercise.

The Human Genome Project

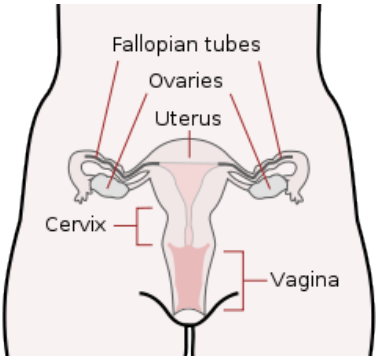
The Human Genome Project is an internationally funded effort to map the locations of human genes and understand the role these genes play in development, health and illness. (Check out recent

developments at www.genome.gov) Genes are segments of chromosomes (46 strands of a chemical substance called DNA that are contained in the nucleus of each normal human cell) that vary in length. There are an estimated 25,000 to 30,000 genes on each chromosome; a number far below the estimate of 100,000-150,000 held before the work of the Human Genome Project.

Understanding the role of genes in health and illness can bring about both harm and good (Weitz, 2007). A person who knows that they are at risk for developing a genetic disorder may be able to adopt lifestyle practices that minimize the risk and a person who discovers that they are not at risk may find comfort in knowing that they do not have to fear a particular disease. However, a person who finds out that they are at risk and there is nothing that can be done about it may experience years of fear and anxiety. And the availability of genetic testing may be more widespread than the availability of genetic counseling which can be very expensive. The possible stigma and discrimination that those with illness or at risk for illness must also be considered. In light of the high costs of health insurance, many companies are starting to offer benefits contingent on health assessments and lifestyle recommendations; and continued coverage depends on an employee following these recommendations. So a smoker may have to pay a higher premium than a non-smoker or a person who is overweight may be required to engage in a program of exercise and be monitored for improvement. What if a person finds out that they carry the gene for Huntington's disease (a neurological disorder that is ultimately fatal) which may surface when a person reaches their 40s? The impact this knowledge will have on health care still remains unknown. Who should know what is on your genome? Do you think this information should be shared between mates? What about employers? What would be the advantages and disadvantages?

Conception

Gametes



The Female Reproductive System

There are two types of sex cells or gametes involved in reproduction: the male gametes or sperm and female gametes or ova. The male gametes are produced in the testes in a process called spermatogenesis which begin at about 12 years of age. The female gametes or ova which are stored in the ovaries are present at birth but are immature. Each ovary contains about 250,000 (Rome 1998) but only about 400 of these will become mature eggs (Mackon and Fauser 2000). Beginning at puberty, one ovum ripens and is released about every 28 days, a process called oogenesis.

After the ovum or egg ripens and is released from the ovary, it is drawn into the fallopian tube and in 3 to 4 days, reaches the uterus. It is typically fertilized in the fallopian tube and continues its journey to the uterus. At ejaculation, millions of sperm are released into the vagina, but only a few reach the egg and typically, only one fertilizes the egg. Once a single sperm has entered the wall of the egg, the wall becomes hard and prevents other sperm from entering. After the sperm has entered the egg, the tail of the sperm breaks off and the head of the sperm, containing the genetic information from the father, unites with the nucleus of the egg. As a result, a new cell is formed. This cell, containing the combined genetic information from both parents, is referred to as a zygote.

Chromosomes contain genetic information from each parent. While other normal human cells have 46 chromosomes (or 23 pair), gametes contain 23 chromosomes. In a process

called meiosis, segments of the chromosomes from each parent form pairs and genetic segments are exchanged as determined by chance. Because of the unpredictability of this exchange the likelihood of having offspring that are genetically identical (and not twins) is one in trillions (Gould and Keeton, 1997).

Determining the Sex of the Child

Twenty-two of those chromosomes from each parent are similar in length to a corresponding chromosome from the other parent. However, the remaining chromosome looks like an X or a Y. Half of the male's sperm contain a Y chromosome and half contain an X. All of the ova contain two X chromosomes. If the child receives the combination of XY, the child will be genetically male. If it receives the XX combination, the child will be genetically female.

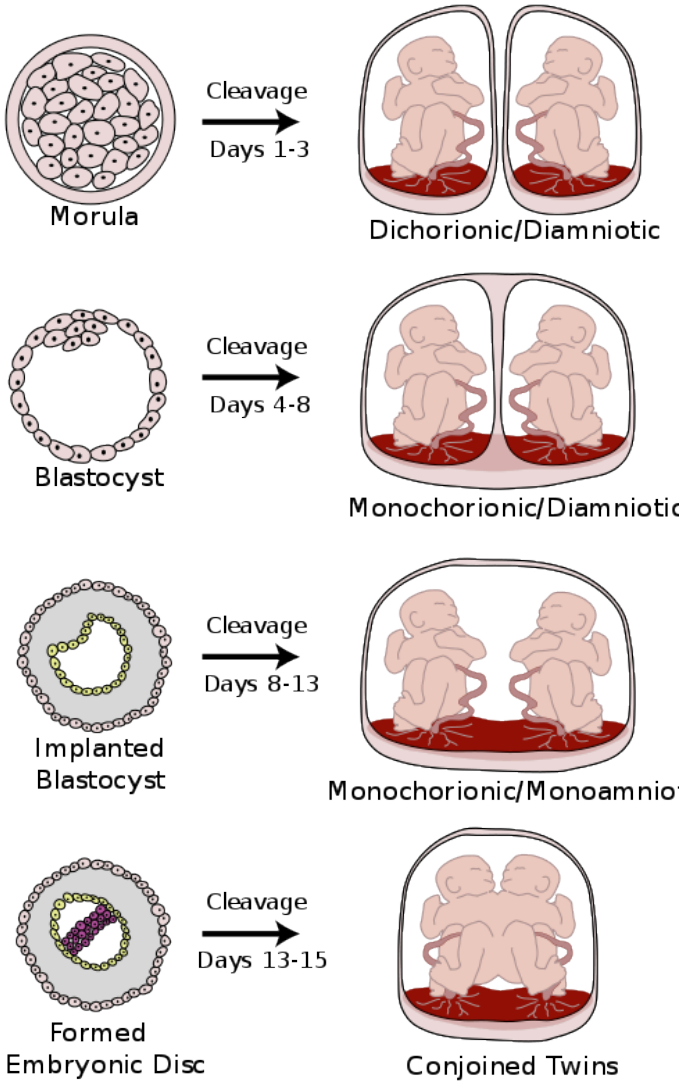
Many potential parents have a clear preference for having a boy or a girl and would like to determine the sex of the child. Through the years, a number of tips have been offered for the potential parents to maximize their chances for having either a son or daughter as they prefer. For example, it has been suggested that sperm which carry a Y chromosome are more fragile than those carrying an X. So, if a couple desires a male child, they can take measures to maximize the chance that the Y sperm reaches the egg. This involves having intercourse 48 hours after ovulation, which helps the Y sperm have a shorter journey to reach the egg, douching to create a more alkaline environment in the vagina, and having the female reach orgasm first so that sperm are not pushed out of the vagina during orgasm. Today, however, there is new technology available that makes it possible to isolate sperm containing either an X or a Y, depending on the preference, and use that sperm to fertilize a mother's egg.

Monozygotic and Dizygotic Twins

Monozygotic twins occur when a single zygote or fertilized egg splits apart in the first two weeks of development. The result is the creation of two separate but genetically identical offspring. About one-third of twins are monozygotic twins. Are you an identical twin?

Sometimes, however, two eggs or ova are released and fertilized by two separate sperm. The result is dizygotic or fraternal twins. About two-thirds of twins are dizygotic. These two individuals share the same amount of genetic material as would any two children from the same mother and father. Older mothers are more likely to have dizygotic twins than are younger mothers and couples who use fertility drugs are also more likely to give birth to dizygotic twins. Consequently, there has been in increase in the number of fraternal twins in recent years (Bortolus et. al., 1999).

What are the other possibilities? Various degrees of sharing the placenta can occur depending on the timing of the separation and duplication of cells. This is known as placentiation. Here is a diagram that illustrates various types of twins.



Author Kevin Dufenbach

Genotypes and Phenotypes (or why what you get

is not always what you see)

The word genotype refers to the sum total of all the genes a person inherits. The word phenotype refers to the features that are actually expressed. Look in the mirror. What do you see, your genotype or your phenotype? What determines whether or not genes are expressed? Actually, this is quite complicated (Berger, 2005). Some features follow the additive pattern which means that many different genes contribute to a final outcome. Height and skin tone are examples. In other cases, a gene might either be turned on or off depending on the gene with which it is paired. Some genes are considered dominant because they will be expressed. Others, termed recessive, are only expressed in the absence of a dominant gene. Some characteristics which were once thought of as dominant-recessive, such as eye color, are now believed to be a result of the interaction between several genes (McKusick, 1998). Dominant traits include curly hair, facial dimples, normal vision, and dark hair. Recessive characteristics include red hair, pattern baldness, and nearsightedness. Sickle cell anemia is a recessive disease; Huntington disease is a dominant disease. Other traits are a result of partial dominance or co-dominance in which both genes are influential. For example, if a person inherits both recessive genes for sickle cell anemia, the disease will occur. But if a person has only one recessive gene for the disease, the person may experience effects of the disease only under circumstances of oxygen deprivation such as high altitudes or physical exertion (Berk, 2004).

Chromosomal Abnormalities and Genetic Disorders

A chromosomal abnormality occurs when there a child inherits too

many or two few chromosomes. The most common cause of chromosomal abnormalities is the age of the mother. A 20 year old woman has a 1 in 800 chance of having a child with a common chromosomal abnormality. A woman of 44, however, has a one in 16 chance. It is believed that the problem occurs when the ovum is ripening prior to ovulation each month. As the mother ages, the ovum is more likely to suffer abnormalities at this time.

Some gametes do not divide evenly when they are forming. Therefore, some cells have more than 46 chromosomes. In fact, it is believed that close to half of all zygotes have an odd number of chromosomes. Most of these zygotes fail to develop and are spontaneously aborted by the body. If the abnormal number occurs on pair #21 or # 23, however, the individual may have certain physical or other abnormalities.

One of the most common chromosomal abnormalities is on pair 21. Trisomy 21 occurs when there are three rather than two chromosomes on #21. A person with Down syndrome experiences problems such as mental retardation and certain physical features such as having short fingers and toes, having folds of skin over the eyes, and a protruding tongue. Life expectancy of persons with Down syndrome has increased in recent years. Keep in mind that there is as much variation in people with Down Syndrome as in most populations and those differences need to be recognized and appreciated. Watch the following video clip about Down Syndrome from the National Down Syndrome Society:

A YouTube element has been excluded from this version of the text. You can view it online here: https://library.achievingthedream.org/hostoschilddevelopmenteducation/?p=73

When the abnormality is on pair #23, the result is a sex-linked chromosomal abnormality. A person might have XXY, XYY, XXX, XO, or 45 or 47 chromosomes as a result. Two of the more common sex-linked chromosomal disorders are Turner's syndrome and Klinefelter's syndrome. Turner's syndrome occurs in 1 of every 2,500 live female births (Carroll, 2007) when an ovum which lacks a chromosome is fertilized by a sperm with an X chromosome. The resulting zygote has an XO composition. Fertilization by a Y sperm is not viable. Turner syndrome affects cognitive functioning and sexual maturation. The external genitalia appear normal, but breasts and ovaries do not develop fully and the woman does not menstruate. Turner's syndrome also results in short stature and other physical characteristics. Learn more

at www.turnersyndrome.org/. Klinefelter's syndrome (XXY) occurs in 1 out of 700 live male births and results when an ovum containing an extra X chromosome is fertilized by a Y sperm. The Y chromosome stimulates the growth of male genitalia, but the additional X chromosome inhibits this development. An individual with Klinefelter's syndrome has some breast development, infertility (this is the most common cause of infertility in males), and has low levels of testosterone.

Most of the known genetic disorders are dominant gene-linked; however, the vast majority of dominant gene linked disorders are not serious disorders, or if they are, they may still not be debilitating. For example, the majority of those with Tourette's Syndrome suffer only minor tics from time to time and can easily control or cover up their symptoms. Huntington's Disease is a dominant gene linked disorder that affects the nervous system and is fatal but does not appear until midlife. Recessive gene disorders, such as cystic fibrosis and sickel-cell anemia, are less common but may actually claim more lives because they are less likely to be detected as people are unaware that they are carriers of the disease. If the genes inherited from each parent are the same, the child is homozygous for a particular trait and will inherit the trait. If, however, the child inherits a gene from one parent but not the other, the child is heterozygous, and interaction between the genes will in part determine whether or not that trait is expressed (Berk, 2004).

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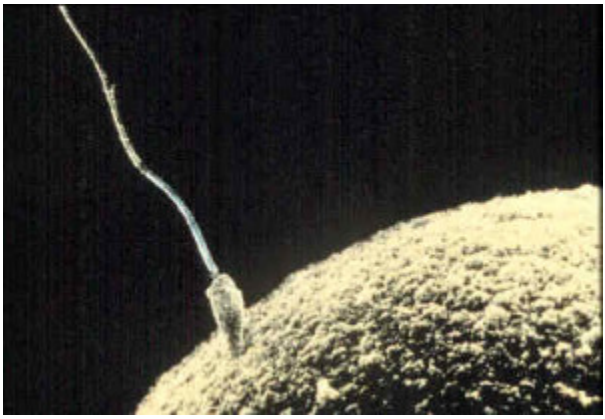
49. Prenatal Development

Periods of Prenatal Development

Now we turn our attention to prenatal development which is divided into three periods: the germinal period, the embryonic period, and the fetal period. Here is an overview of some of the changes that take place during each period.

The Germinal Period



Sperm and Ovum at Conception

The germinal period (about 14 days in length) lasts from conception to implantation of the zygote (fertilized egg) in the lining of the uterus. During this time, the organism begins cell division and growth. After the fourth doubling, differentiation of the cells begins

to occur as well. It's estimated that about 60 percent of natural conceptions fail to implant in the uterus. The rate is higher for in vitro conceptions.

The Embryonic Period

Photo by Lunar Caustic

This period begins once the organism is implanted in the uterine wall. It lasts from the third through the eighth week after conception. During this period, cells continue to differentiate and at 22 days after conception the neural tube forms which will become the brain and spinal column. Growth during prenatal development occurs in two major directions: from head to tail (cephalocaudal development) and from the midline outward (proximodistal development). This means that those structures nearest the head develop before those nearest the feet and those structures nearest the torso develop before those away from the center of the body (such as hands and fingers). The head develops in the fourth week and the precursor to the heart begins to pulse.

In the early stages of the embryonic period, gills and a tail are apparent. But by the end of this stage, they disappear and the organism takes on a more human appearance. About 20 percent of organisms fail during the embryonic period, usually due to gross chromosomal abnormalities. As in the case of the germinal period, often the mother does not yet know that she is pregnant. It is during this stage that the major structures of the body are taking form making the embryonic period the time when the organism is most vulnerable to the greatest amount of damage if exposed to harmful substances. (We will look at this in the section on teratology below.) Potential mothers are not often aware of the risks they introduce to the developing child during this time. The embryo is approximately 1 inch in length and weighs about 4 grams at the end of this period. The embryo can move and respond to touch at this time.

The Fetal Period

From the ninth week until birth, the organism is referred to as a fetus. During this stage, the major structures are continuing to develop. By the 12th week, the fetus has all its body parts including external genitalia. In the following weeks, the fetus will develop hair, nails, teeth and the excretory and digestive systems will continue to develop. At the end of the 12th week, the fetus is about 3 inches long and weighs about 28 grams.

During the 4-6th months, the eyes become more sensitive to light and hearing de, hearing develops. Respiratory system continues to develop. Reflexes such as sucking, swallowing and hiccupping develop during the 5th month. Cycles of sleep and wakefulness are present at that time as well. The first chance of survival outside the womb, known as the age of viability is reached at about 22 and 26 weeks (Moore & Persaud, 1998). Many practitioners hesitate to resuscitation before 24 weeks. The majority of the neurons in the

brain have developed by 24 weeks although they are still rudimentary and the glial or nurse cells that support neurons continue to grow. At 24 weeks the fetus can feel pain (Royal College of Obstetricians and Gynecologists, 1997).

Between the 7th and 9th months the fetus is primarily preparing for birth. It is exercising its muscles, its lungs begin to expand and contract. It is developing fat layers under the skin. The fetus gains about 5 pounds and 7 inches during this last trimester of pregnancy which includes a layer of fat gained during the 8th month. This layer of fat serves as insulation and helps the baby regulate body temperature after birth.

50. Environmental Risks

Teratology

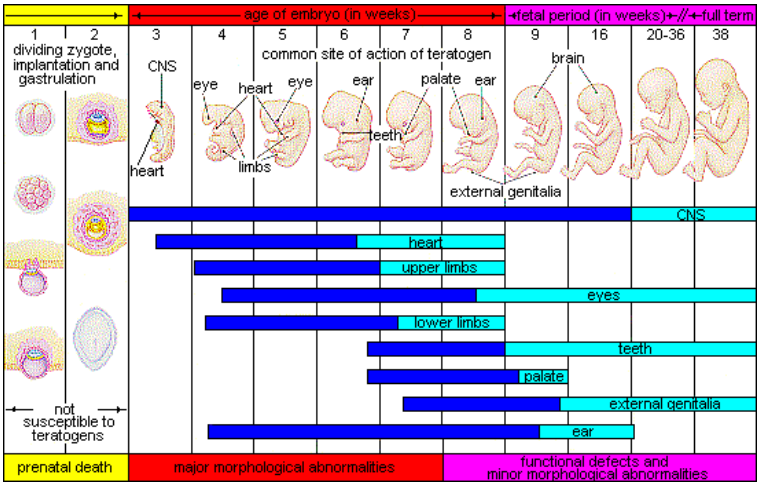
Good prenatal care is essential. The developing child is most at risk for some of the most severe problems during the first three months of development. Unfortunately, this is a time at which most mothers are unaware that they are pregnant. Today, we know many of the factors that can jeopardize the health of the developing child. The study of factors that contribute to birth defects is called teratology. Teratogens are factors that can contribute to birth defects which include some maternal diseases, pollutants, drugs and alcohol.

Factors influencing prenatal risks: There are several considerations in determining the type and amount of damage that might result from exposure to a particular teratogen (Berger, 2004). These include:

- The timing of the exposure: Structures in the body are vulnerable to the most severe damage when they are forming. If a substance is introduced during a particular structure's critical period (time of development), the damage to that structure may be greater. For example, the ears and arms reach their critical periods at about 6 weeks after conception. If a mother exposes the embryo to certain substances during this period, the arms and ears may be malformed.
- The amount of exposure: Some substances are not harmful unless the amounts reach a certain level. The critical level depends in part on the size and metabolism of the mother.
- Genetics: Genetic make-up also plays a role on the impact a particular teratogen might have on the child. This is suggested by fraternal twin studies who are exposed to the same prenatal environment, yet do not experience the

same teratogenic effects. The genetic make-up of the mother can also have an effect; some mothers may be more resistant to teratogenic effects than others.

- Being male or female: Males are more likely to experience damage due to teratogens than are females. It is believed that the Y chromosome, which contains fewer genes than the X, may have an impact.

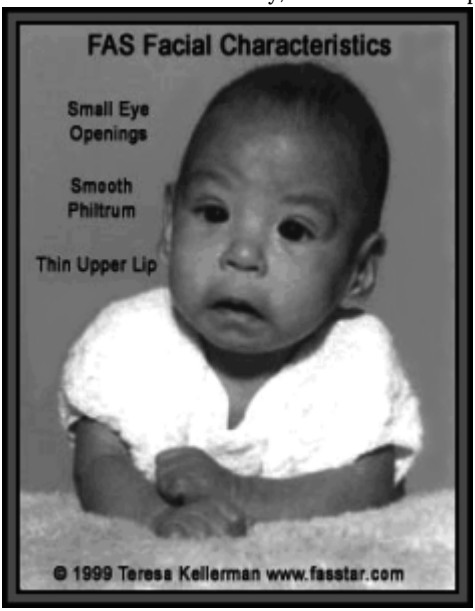


Critical Periods of Prenatal Development

A look at some teratogens

One of the most commonly used teratogens is alcohol and because half of all pregnancies in the United States are unplanned, it is recommended that women of child-bearing age take great caution against drinking alcohol when not using birth control or when pregnant (Surgeon General's Advisory on Alcohol Use During Pregnancy, 2005). Alcohol consumption, particularly during the second month of prenatal development but at any point during pregnancy may lead to neurocognitive and behavioral difficulties

that can last a lifetime. Binge drinking (5 or more on a single occasion) or 7 or more drinks during a single week place a child at risk. In extreme cases, alcohol consumption can lead to fetal death but more frequently it can result in fetal alcohol spectrum disorders (FASD) (this terminology is now used when looking at the effects of exposure and replaces the term fetal alcohol syndrome. It is preferred because it recognizes that symptoms occur on a spectrum and that all individuals do not have the same characteristics.) Children with FASD share certain physical features such as flattened noses, small eye holes, and small heads, intellectual developmental delay, and behavioral problems. Those with FASD are more at risk for lifelong problems such as criminal behavior, psychiatric problems, and unemployment (CDC, 2006). The terms alcohol-related neurological disorder (ARND) and alcohol-related birth defects (ARBD) have replaced the term Fetal Alcohol Effects to refer to those with less extreme symptoms of FASD. ARBD include kidney, bone and heart problems.



Tobacco is the second most widely used teratogen and the number of adolescent females who smoke is increasing. In fact,

among adolescents, females are just as likely to smoke as are males. Tobacco use during pregnancy has been associated with low birth weight, placenta previa, preterm delivery, fetal growth restriction and sudden infant death syndrome (Center for Disease Control, 2004).

Illicit drugs as well as prescribed medications can have serious teratogenic effects. It is difficult to completely determine the effects of a particular illicit drug on a developing child because most mothers, who use, use more than one substance. However, several problems seem clear. The use of cocaine is connected with low birth weight, stillbirths and spontaneous abortion. Heavy marijuana use is associated with brain damage and mothers addicted to heroin often pass that addiction to their child. And many medications do not include adequate information on risks posed if taken during pregnancy (Center for Disease Control, 2004).

Pollutants

Some environmental pollutants of major concern include lead poisoning, which is connected with low birth weight and slowed neurological development. Children who live in older housing in which lead based paints have been used have been known to eat peeling paint chips thus being exposed to lead. The chemicals in certain herbicides are also potentially damaging. Radiation is another environmental hazard. If a mother is exposed to radiation, particularly during the first 3 months of pregnancy, the child may suffer some congenital deformities. There is also an increased risk of miscarriage and stillbirth. Mercury leads to physical deformities and mental retardation (Dietrich, 1999).

HIV

One of the most potentially devastating teratogens is HIV. In the United States, the fastest growing group of people with AIDS is women; globally half of all people infected with HIV are women (UNAIDS, 2005). It is estimated that between 630,000 to 820,000 children were newly infected with HIV worldwide in 2005. Most of this infection is from mother-to-child through the placenta or birth canal (Newell, 2005). There are some measures that can be taken to lower the chance the child will contract the disease (such as the use of antiretroviral drugs from 14 weeks after conception until birth, avoiding breastfeeding, and delivering the child by c-section), many women do not know they are HIV positive during pregnancy. Still others cannot afford the costly drugs used for treating AIDS. The transmission rate of HIV from mother to child has been reduced in the United States to between 100-200 infants annually. Go to http://www.cdc.gov/hiv/topics/perinatal/resources/factsheets/perinatal.htm to learn more.

Maternal Diseases

German measles (or rubella) have been associated with a number of maladies. If the mother contracts the disease during the first three months of pregnancy, damage can occur in the eyes, ears, heart or brain of the unborn child. Deafness is almost certain if the mother has German measles before the 11th week of prenatal development and can also cause brain damage. Gonorrhea, syphilis, and Chlamydia are sexually transmitted infections that can be passed to the fetus by an infected mother; mothers should be tested as early as possible to minimize the risk of spreading these infections (Center for Disease Control, 2006).

51. Pregnancy

Complications of Pregnancy

Minor complications: There are a number of common side effects of pregnancy. Not everyone experiences all of these nor to the same degree. And although they are considered "minor" this is not to say that these problems are potentially very uncomfortable. These side effects include nausea (particularly during the first 3-4 months of pregnancy as a result of higher levels of estrogen in the system), heartburn, gas, hemorrhoids, backache, leg cramps, insomnia, constipation, shortness of breath or varicose veins (as a result of carrying a heavy load on the abdomen). What is the cure? Delivery!

Major Complications: The following are some serious complications of pregnancy which can pose health risks to mother and child and that often require hospitalization. Ectopic

pregnancy occurs when the zygote becomes attached to the fallopian tube before reaching the uterus. About 1 in 50 pregnancies in the United States are tubal pregnancies and this number has been increasing because of the higher rates of pelvic inflammatory disease and Chlamydia (Carroll, 2007). Abdominal pain, vaginal bleeding, nausea and fainting are symptoms of ectopic pregnancy. Toxemia or blood poisoning due to kidney malfunction is experienced by 6 to 7 percent of women during their last months of pregnancy. If untreated toxemia can lead to preeclampsia or swelling and hypertension or progress to eclampsia which is can involve coma or death.

Maternal Mortality: Approximately 1000 women die in childbirth around the world each day (World Health Organization, 2010). Rates are highest in Subsaharan Africa and South Asia although there has been a substantial decrease in these rates. The campaign to make childbirth safe for everyone has led to the development of clinics accessible to those living in more isolated areas and training more midwives to assist in childbirth.

Example

Listen to this NPR story about a midwife's experience in a remote region of Afghanistan:

In Afghanistan, Midwives 'Are Like Guardian Angels For Infants And Mothers'

Spontaneous abortion is experienced in an estimated 20-40 percent of undiagnosed pregnancies and in another 10 percent of diagnosed pregnancy. Usually the body aborts due to chromosomal abnormalities and this typically happened before the 12th week of pregnancy. Cramping and bleeding result and normal periods return

after several months. Some women are more likely to have repeated miscarriages due to chromosomal, amniotic, or hormonal problems; but miscarriage can also be a result of defective sperm (Carroll et. al., 2003).

Problems of the Newborn

Low Birth weight

We have been discussing a number of teratogens associated with low birth weight such as cocaine, tobacco, etc. A child is considered low birth weight if he or she weighs less than 5.8 pounds (2500 grams). About 8.2 percent of babies born in the United States are of low birth weight (Center for Disease Control, 2010). A low birth weight baby has difficulty maintaining adequate body temperature because it lacks the fat that would otherwise provide insulation. Such a baby is also at more risk for infection. And 67 percent of these babies are also preterm which can make them more at risk for respiratory infection. Very low birth weight babies (2 pounds or less) have an increased risk of developing cerebral palsy. Many causes of low birth weight are preventable with proper prenatal care, however.

Premature Birth

A child might also have a low birth weight if it is born at less than 37 weeks gestation (which qualifies it as a preterm baby). Early birth can be triggered by anything that disrupts the mother's system. For instance, vaginal infections or gum disease can actually lead

to premature birth because such infection causes the mother to release anti-inflammatory chemicals which, in turn, can trigger contractions. Smoking and the use of other teratogens can lead to preterm birth.

Anoxia

Anoxia is a temporary lack of oxygen to the brain. Difficulty during delivery may lead to anoxia which can result in brain damage or in severe cases, death.

Babies who suffer both low birth weight and anoxia are more likely to suffer learning disabilities later in life as well.

52. Childbirth

Approaches to Childbirth

Prepared childbirth refers to being not only physically in good condition to help provide a healthy environment for the baby to develop, but also helping a couple to prepare to accept their new roles as parents and to get information and training that will assist them for delivery and life with the baby as much as possible. The more a couple can learn about childbirth and the newborn, the better prepared they will be for the adjustment they must make to a new life. (Nothing can prepare a couple for this completely). Once a couple finds that they are to have a child, they begin to conjure up images of what they think the experience will involve. Once the child is born, they must reconcile those images with reality (Galinsky, 1987). Knowing more of what to expect does help them in forming more realistic images thus making the adjustment easier. Let's explore some of the methods of prepared childbirth.

The Dick-Read Method of Natural Childbirth

Grantley Dick-Read was an English obstetrician and pioneer of prepared childbirth in the 1930s. In his book Childbirth Without Fear, he suggests that the fear of childbirth increases tension and make the process of childbearing more painful. He believed that if mothers were educated, the fear and tension would be reduced and the need for medication could frequently be eliminated. The Dick-Read method emphasized the use of relaxation and proper breathing with contractions as well as family support and education. (For more current information on this

method go to www.hypnobirthing.com) This method influenced the most commonly taught method in the U.S. today, the Lamaze Method.

The Lamaze Method

This method originated in Russia and was brought to the United States in the 1950s by Fernand Lamaze. The emphasis of this method is on teaching the woman to be in control in the process of delivery. It includes learning muscle relaxation, breathing though contractions, having a focal point (usually a picture to look at) during contractions and having a support person who goes through the training process with the mother and serves as a coach during delivery.

Birthing Centers/Birthing Rooms

The trend now is to have birthing rooms that are hospital rooms that look more like a suite in a hotel equipped with a bed that can be converted for delivery. These rooms are also equipped with a bed and monitoring systems for the newborn. However, many hospitals have only one or two of these rooms and availability can be a problem.

The LeBoyer Method

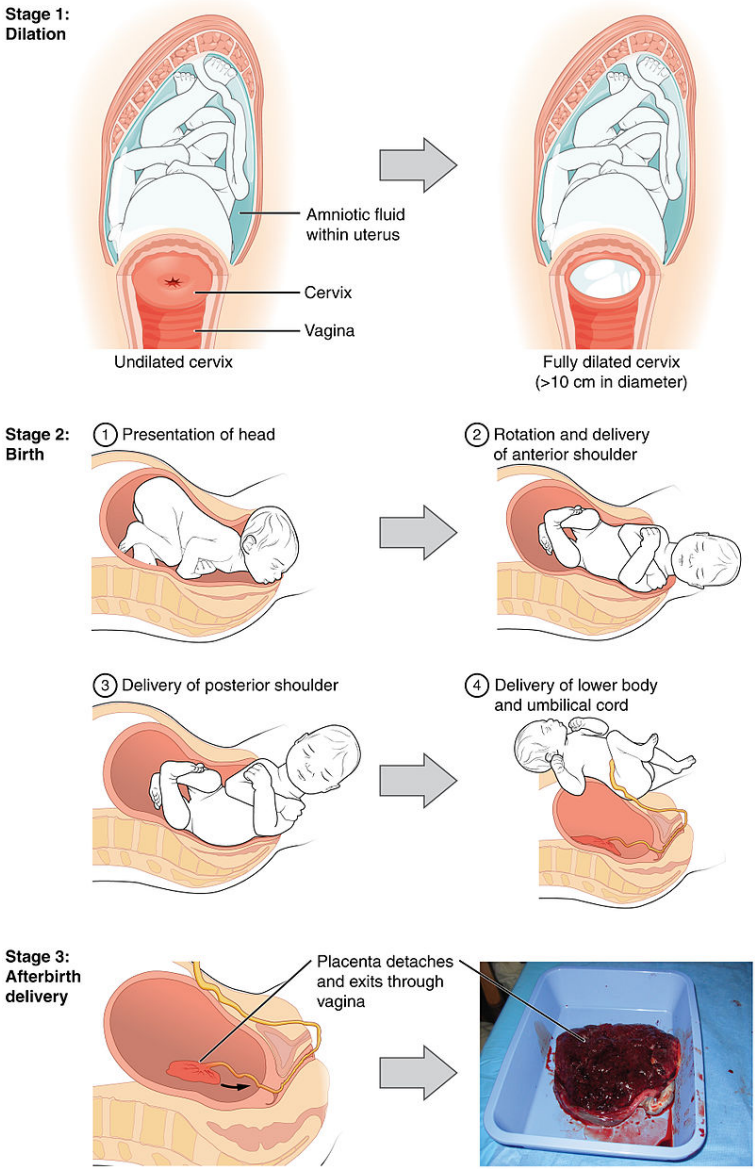
Other birthing options include the use of birthing chairs, which make use of gravity in assisting the woman giving birth and the Leboyer Method of "Gentle Birthing". This method involves

giving birth in a quiet, dimly lit room and allowing the newborn to lie on the mother's stomach with the umbilical cord intact for sever minutes while being given a warm bath.

Home Birth and Nurse-Midwives

Historically in the United States, most babies were born under the care of lay midwives. In the 1920s, middle class women were increasingly using doctors to assist with childbirth but rural women were still being assisted by lay midwives. The nursing profession began educating nurse-midwives to assist these women. Nurse-midwives continued to assist most rural women with delivery until the 1970s and 1980s when their growth is thought to have posed a threat to the medical profession (Weitz, 2007). Since that time, nurse-midwives have found it more difficult to sustain practices with the high costs of malpractice insurance. (Many physicians have changed areas of specialization in response to these costs as well.) Women who are at low risk for birth complications can successfully deliver under the care of nurse-midwives but only 1 percent of births occur at home. Because one out of every 20 births involves a complication, most medical professionals recommend that delivery take place in a hospital. However, some couples choose to have their baby at home. About 1 percent of births occur out of a hospital in the United States. Two-thirds of these are homebirths and more than half of these are assisted by midwives. Midwives are trained and licensed to assist in delivery and are far less expensive than the cost of a hospital delivery. One-third of out-of-hospital births occur in freestanding clinics, birthing centers, or in physicians offices or other locations. In the United States, women who have had previous children, who are over 25 and who are white are more likely to have out-of-hospital births (MacDorman, et. als., 2010).

The Process of Delivery



The stages of childbirth.

The First Stage of labor begins with uterine contractions that may initially last about 30 seconds and be spaced 15 to 20 minutes apart. These increase in duration and frequency to more than a minute in length and about 3 to 4 minutes apart. Typically, doctors advise that they be called when contractions are coming about every 5 minutes. Some women experience false labor or Braxton-Hicks contractions, especially with the first child. These may come and go. They tend to diminish when the mother begins walking around. Real labor pains tend to increase with walking. Labor may also be signaled by a bloody discharge being expelled from the cervix. In one out of 8 pregnancies, the amniotic sac or water in which the fetus is suspended may break before labor begins. In such cases, the physician may induce labor with the use of medication if it does not begin in order to reduce the risk of infection. Normally this sac does not rupture until the later stages of labor.

The first stage of labor is typically the longest. During this stage the cervix or opening to the uterus dilates to 10 centimeters or just under 4 inches. This may take around 12-16 hours for first children or about 6-9 hours for women who have previously given birth. It takes one woman in 9 over 24 hours to dilate completely. Labor may also begin with a discharge of blood or amniotic fluid. If the amniotic sack breaks, labor will be induced if necessary to reduce the risk of infection.

The second stage involves the passage of the baby through the birth canal. This stage takes about 10-40 minutes. Contractions usually come about every 2-3 minutes. The mother pushes and relaxes as directed by the medical staff. Normally the head is delivered first. The baby is then rotated so that one shoulder can come through and then the other shoulder. The rest of the baby quickly passes through. At this stage, an episiotomy may be performed to avoid tearing the tissue of the back of the vaginal opening. The baby's mouth and nose are suctioned out. The umbilical cord is clamped and cut.

The third stage is relatively painless. During this stage, the placenta or afterbirth is delivered. This typically within 20 minutes

after delivery. If an episiotomy was performed it is stitched up during this stage.

Assessing the Neonate

There are several ways to assess the condition of the newborn. The most widely used tool is the Neonatal Behavioral Assessment Scale (NBAS) developed by T. Berry Brazelton. This tool has been used around the world to help parents get to know their infants and to make comparisons of infants in different cultures (Brazelton & Nugent, 1995). The baby's motor development, muscle tone, and stress response is assessed. The Apgar is conducted one minute and five minutes after birth. This is a very quick way to assess the newborn's overall condition. Five measures are assessed: the heart rate, respiration, muscle tone (quickly assessed by a skilled nurse when the baby is handed to them or by touching the baby's palm), reflex response (the Babinski reflex is tested), and color. A score of 0 to 2 is given on each feature examined. An Apgar of 5 or less is cause for concern. The second Apgar should indicate improvement with a higher score.

53. Maternal Mortality

Read this BBC article about why so many women worldwide still die in childbirth:

- Maternal mortality: why so many mothers die giving birth

54. Conception to birth -- visualized

A YouTube element has been excluded from this version of the text. You can view it online here: https://library.achievingthedream.org/hostoschilddevelopmenteducation/?p=79

PART XI

MODULE 9: EARLY CHILDHOOD

55. Lecture: Early Childhood

Lecture Transcript

Early childhood is sometimes referred to as the preschool years. This is a period of the life span after infancy and before the child begins formal schooling. This is typically from ages 3 to 5 or 2 to 6 years.

First, let's examine physical growth.

There is considerable difference in the body proportions of a child entering and exiting this stage. Toddlers have large heads and stomachs and short arms and legs. But 6 year old children tend to have longer, leaner bodies as their torso lengthens.

The rate of physical growth in early childhood is slower than what was found in infancy. Overall physical growth is at the rate of about 3 inches in height per year. And about 4.5 pounds of weight is gained each year. The average 6 year old in the United States is about 46 inches tall and weighs about 46 pounds. This slower growth rate translates into a smaller appetite for children between ages 2 and 6 years.

This diminished appetite means these children are vulnerable to nutritional deficiencies. This is particularly true if those small appetites are satisfied with foods poor in nutrition. Preschoolers can suffer iron deficiencies particularly if they drink too much cow's milk which interferes with the body's ability to absorb iron. Children in the United States consume too many high fat, high sugar junk foods. And while the effects of such poor nutrition might not be immediately evident, the preference for eating such intensely sugary and fatty foods is being established and can interfere with nutrition for years to come.

How can you avoid setting up eating problems in this age group? The following tips are directed toward establishing

reasonable expectations about food and avoiding associating food with psychological needs.

- First, don't try to force feed your child or fight with them over food.
- Recognize that appetites vary and adjust accordingly.
- Keep mealtime pleasant and as a time for family members to unite and enjoy one another's company.
- Don't become a short order chef. Choose a reasonable menu that all can share.
- Limit choices, particularly when allowing young children to make selections. Too many options can be confusing.
- Serve balanced meals. Take the time to think about nutrition and prepare meals that are healthy.
- Don't bribe the child with food. Offering certain foods as rewards can set up a hierarchy of good and bad foods which can get in the way of eating healthy meals.

Now let's turn our attention to the brain. During early childhood, the brain continues to grow and mature. At age 2, the brain is 75% its adult weight. By age 6, it's at 95 percent its adult weight. And by 7, the brain is about 100% its adult weight. Changes in the child's ability to override emotional outbursts and to coordinate movement are seen as the cortex continues to mature. Visual pathways continue to be established and the child becomes able to reproduce what is seen on paper when drawing. The left hemisphere of the brain undergoes a growth spurt between ages 3 and 6 facilitating language skills. The right hemisphere grows throughout childhood improving spatial skills, and the recognition of shapes and patterns. Corpus callosum also grows between 3-6 years.

Gross motor skill development occupies much of the life of a young child. Running, jumping, swinging, and learning to ride a bicycle are all examples of gross motor skills. Many childhood songs combine music and words with large physical movements. Can you

think of any examples? How about "Head and Shoulders, Knees and Toes"? Remember that one?

Young children are also practicing their fine motor skills by learning to pour, using scissors, and coloring. Early childhood classrooms include a number of activities for improving fine motor skills. Many songs and children's activities incorporate fine motor skills. Have you ever heard the song, "The Itsy Bitsy Spider"? You'll find a video of it being performed in your lesson. Enjoy!

Sexual development begins even before birth. Erections and vaginal lubrication are present before birth. In infancy, babies stimulate their genitals when they have sufficient motor skills. Their curiosity about the genitals continues in early childhood. Hopefully, this curiosity is met with a reasonable response rather than one that evokes shame or fear.

Let's continue our look at cognitive development.

Recall Piaget's second stage of cognitive development: **preoperational intelligence**. Early childhood is a time of learning to use thought to solve problems and learning to know and communicate about the world through the use of symbols, primarily language. Now the child can think about what happened several days ago or image an event. Watch closely and you may see a child surprised by being able to hear a song in their head. "Wow! I can hear a song and it's playing in my head!" Being able to think about the world in this new way doesn't mean that the child is logical about how the world works. Preoperational thought is 'prelogical' or before logical. Instead, there may be a tendency to believe that everyone sees the world through the child's eyes. I'll give you an example. One child came up to me at around Halloween (October) and said "I know why god put skin on people." "Oh, really? Why?" I responded. The child proudly reported, "So they wouldn't be scary to little kids!"

Here are some other aspects of preoperational thought. Children love to play out roles at this age. This type of play, called sociodramatic play, allows them to take on a role fully and think

about how to speak and act as well as what kinds of props are needed to become the part.

Syncretism refers to thinking that if two events occur simultaneously, one must have caused the other. A child whose mother brought a baby with her when she last left the hospital may think that a new visit to the same building will produce another child!

Egocentrism is one of Piaget's early concepts that refer to how these children assume that everyone thinks the way that they do.
Try reading to a child and they may ask, "Where am I in the story?" They believe that they are at the center of activity.
Or you may head a child ask whether a character in a movie or cartoon loves them? That's an odd question, unless you're a 3 year old.

Animism is the thought that objects have lifelike qualities. Be sure to watch the video clip in your lesson. It's an attempt to help young children distinguish between living and non-living objects.

Piaget challenged children's ability to understand how to classify objects. For example, in this image showing numerous red buttons and a single green button, you have objects that can be classified in several ways. If you ask a 3 year old, "What are there more of? Red things, green things, or buttons?" The child will probably respond, "Red things" not recognizing that all are buttons.

Piaget's experiments on **conservation** of matter indicated that children have numerous misconceptions about matter. For example, if a container of water is poured into two differently shaped containers so that the water levels now vary, the child may think that the higher water level indicates more liquid. Or a child may think that if one line moves further to the right, it is more or if one row of pennies is widely spaced apart, it has more.

The **theory of mind** is the understanding that other people have different thoughts than one's own. This realization replaces egocentrism and occurs between ages 3 and 5, typically; or around age 4. This knowledge of other's mental states can aid in social relationships. It serves as our everyday mindreading. It can be

absent or difficult for children with autism spectrum disorders. Such children may not be able to appreciate other's mental states, depending on the level of severity of the disorder.

Vocabulary grows at the rate of 10 to 20 new words per day and the child has a vocabulary of approximately 10,000 words by age 6. However, children do not have a complete understanding of words. For example, a child may not understand that the expression, "time flies" simply means that time passes quickly. Children tend to learn nouns more easily than verbs, even in more verb-friendly languages such as Chinese. Rules of grammar may be misapplied. An example of such over-regularization is found in statements such as "I goed there." Or, "I doed that!" in which adding ed to the end of the word is used to indicate past tense incorrectly.

Remember Vygotsky's zone of proximal development? This is the potential a child may achieve through guided participation. Language, both verbal and non-verbal is the vehicle of this guidance. Do you ever talk to yourself? When and why? Chances are you talk to yourself as an adult only when you want to express an emotion or clarify your thoughts. This inner speech is not the same as the speech you use when communicating with others; it's short and to the point. But when you were learning to use language, you may have struggled as you began to use words to communicate ideas to others. You probably spoke aloud. Then words became directed toward your own behavior. You may have talked to yourself with a sort of running commentary about your own activities and feelings as you learned to think using words. Gradually, this egocentric speech (spoken when alone) became private speech, or thinking in language. Inner speech is only spoken aloud if thoughts need to be clarified or emotion expressed.

Now we turn our attention toward psychosocial development in early childhood. We'll explore self-concept, gender identity, and family life.

A **self-concept** is one's own perception or image of self. We aren't born with a self-concept. It develops through interaction with others. Usually these others are those close to us like parents,

siblings, or peers. Let's look at two theories of self-based on interaction.

Charles Horton Cooley used the metaphor of a mirror or looking-glass when describing this process. Our self-concept develops when we look at how those around us respond to us, how we look, what we say, and what we do. We then use their reactions to make self-judgments. If those around us respond favorably to us, we'll form a positive sense of self. But if those around us respond with criticism and insult, we interpret that as evidence that we are not good or acceptable. But those around us may respond to us based on more than our own performance or worth. Perhaps they don't notice what we do well or are reluctant to comment on it. As a result, we may have an inaccurate self-concept. And there may be certain periods in life in which we are more self-conscious or concerned with how others view us. Early childhood may be one of those times as children are piecing together a sense of self.

George Herbert Mead also focused on social interaction as important for developing a sense of self. He divided the self into two parts: the "I" or the spontaneous part of the self that is creative and internally motivated, and the "me" or the part of the self that takes into account what other people think. The key to living well is to find ways to give expression to the "I" with the approval of the "me". In other words, find out how to be creative and do what you care about within the guidelines of society. The I is inborn. But the me develops through social interaction and a process called "taking the role of the other." A child first comes to take the role of a significant other person, typically a parent or sibling. A child, who has been told not to do something, may be found saying "no" to himself. Gradually, the child will come to understand how the generalized other, or society at large, comes to view actions. Now a behavior is not just wrong according to a significant other person, it is wrong as a rule of society. In this way, cultural expectations become part of the judgment of self.

Early self-concepts can be quite exaggerated. A child may want to be the biggest, or be able to jump the highest, or to have the longest

hair. This exaggerated sense of self is external; the child emphasizes outward expressions and responses in developing a sense of self.
Older children tend to become more realistic in their sense of self as they start comparing their own behavior with that of others.

Erikson views early childhood as a time of building on autonomy and taking initiative. The child wants to think of an activity and carry it out without interference of others.

Early childhood is also a time of developing gender identification or a sense of self based on gender. You may recall Freud's theory of the phallic stage in which the child develops a sense of masculinity or femininity. Nancy Chordorow believed that mothers promote gender specific behavior in the way they interact with sons and daughters. Daughters are kept close and dependent while sons are encouraged to be independent and assertive. Cognitive theory suggests that children actively seek their gender roles through a gender schema in which they sort their world into male and female categories. They ask whether activities, objects, colors, and mannerisms are for boys or girls.
Learning theorists focus on the ways in which children are reinforced for gender stereotypic behavior and how modeling and media images promote gender stereotypic behaviors. The focus is on how society imposes gender expectations on children.

How is gender taught? The training is said to begin in infancy as parents treat their sons and daughters differently. In some cultures it means cuddling and speaking to daughters, while directing sons toward outside activities. Sons are given more freedom and less supervision than daughters. And daughters may be given unnecessary assistance thus undermining their confidence. Teachers call on boys more often in the classroom and schools may direct students into certain fields of study based on gender rather than abilitFriends have a different code of behavior for girls than for boys. Girls focus on closeness in friendship whereas boys may focus more on competition.

Is gender taught or do children seek out how to behave based on their sex? Gender expectations are taught and messages are

presented in the media, in the schools, among friends, and by family members. But children also vary in the extent to which they follow the roles presented. There is an interactive role between the individual and society's expectations with respect to gender. This is called "doing gender." It means that we approach these expectations and respond to them in a variety of ways, depending on individual motives and attributes.

Think of your parents. How would you describe their style of parenting? Are they consistent? Were they alike in their approach to discipline and support? Here are two models of parenting styles. You may be able to identify your own parents to some extent in these descriptions. Of course, these models represent clear categories. Real parents often fall somewhere in between.

Diane Baumrind's model classifies parents in several ways based on the amount and direction of communication they have with their children, their level of warmth, and the level of maturity expected from the child. The **authoritarian** model is a traditional model in which the parents are in control. Children are expected to be obedient and respectful. These parents have low warmth and high maturity demands for their children. The **permissive** model is one in which parents allow children to make the rules. These parents show a good deal of warmth, but have trouble setting limits. The authoritative model is parenting that is strict within reason and that is accompanied by affection. Children have some say in making rules and the exchanges are warm. This is also known as **democratic** parenting and is the model favored by Baumrind. The parenting program called "Love and Logic" is a good example of this model. Uninvolved parents are unresponsive and non-demanding. As a consequence, their children may difficulty in social relationships, school, and other areas.

LeMaster's and DeFrain's model focuses on what parents are trying to accomplish when parenting. It offers a glimpse at the psychological motivation of the parent suggesting that a parent's psychological needs rather than the child's developmental needs are frequently being addressed when parenting. The **martyr** is the type

of parent who will do anything for their child; even those things that children should and could do on their own. This is to help the parent feel in control through self-sacrifice with the expectation that the child will be indebted to them. The pal is lonely and wants a friend. The **pal** lets the child do what they want in hopes that the child will spend time with the parent and satisfy their need for companionship. The **police officer/drill sergeant** wants direct control and gives the child many obedience tests. Obedience tests are often meaningless activities with the sole purpose of showing the child who is in control. The **teacher-counselor** parent is one who probably pays too much attention to what the "experts" have to say about parenting. The teacher-counselor takes all responsibility for the child's behavior and thinks that if they just do the right things, they can have a perfect child. The **athletic coach** is the preferred model. It involves being objective and consistent in parenting and allowing the child to learn by doing.

Which model is best? It turns out that showing concern, warmth, and support is the most important ingredient. The way this care and concern is demonstrated depends on culture.

As of 2009, 64.2 percent of mothers with children under age 6 and 77.3 percent of mothers with children between the ages of 6 and 17 worked outside the home in the United States. Since the dramatic increase of women in the labor force, we've seen many studies done to evaluate the impact of childcare on child development. Most of this attention has been devoted to looking at formal preschools and day care programs and the teacher-child ratios, type of environments, and activities available. The conclusion has been that day care that is stimulating and provides adequate attention to children is beneficial and sometimes superior to the world of children staying at home. In some parts of the world, child care concerns are more about safety and healthcare. Market Women in Liberia are women who sell small items as street or market vendors. These women are providers for their families and also take care of their children. Day care is not available to them so their children accompany them to the markets. These markets are crowded and

often near waste dumps. Recently, there has been a nationwide effort to improve the conditions for children in the market places and to offer social services such as nutrition and health care for the children. You can learn more in your reading. Certainly, childcare concerns are varied throughout the world.

Some amount of stress is normal in the lives of children. Normal stress includes everyday frustrations and disappointments and minor illness. These stressors can in fact be good life lessons for children and do not cause harm. But toxic stress is long-term and undermines a child's sense of safety and support. This might come from living in an abusive household or one filled with neglect. Or it might be due to the lack of safety and fear that results from living in a crime-ridden community or with war. Prolonged stress leads to the production of stress hormones such as cortisol. Normally, these hormones help the body prepare to take action and get out of harm's way. But prolonged exposure reduces our immunity to disease and leads to problems with digestion, blood pressure, and muscle tensions. In early childhood, our brains are building wiring systems in response to our environments. A child who undergoes chronic, intense stress can develop a low threshold to stress within the brain circuitry. Such a child may be nervous or hyper-vigilant. Having a caring, supportive parent or other caregiver can reduce the impact of toxic stress.

56. Physical Development

Growth in early childhood

Children between the ages of 2 and 6 years tend to grow about 3 inches in height each year and gain about 4 to 5 pounds in weight each year. The average 6 year old weighs about 46 pounds and is about 46 inches in height. The 3 year old is very similar to a toddler with a large head, large stomach, short arms and legs. But by the time the child reaches age 6, the torso has lengthened and body proportions have become more like those of adults.

This growth rate is slower than that of infancy and is accompanied by a reduced appetite between the ages of 2 and 6. This change can sometimes be surprising to parents and lead to the development of poor eating habits.

Nutritional concerns

Caregivers who have established a feeding routine with their child can find this reduction in appetite a bit frustrating and become concerned that the child is going to starve. However, by providing adequate, sound nutrition, and limiting sugary snacks and drinks, the caregiver can be assured that 1) the child will not starve; and 2) the child will receive adequate nutrition. Preschoolers can experience iron deficiencies if not given well-balanced nutrition and if given too much milk. Calcium interferes with the absorption of iron in the diet as well.

Caregivers need to keep in mind that they are setting up taste preferences at this age. Young children who grow accustomed to high fat, very sweet and salty flavors may have trouble eating foods that have more subtle flavors such as fruits and vegetables. Consider the following advice about establishing eating patterns for years to come (Rice, F.P., 1997). Notice that keeping mealtime pleasant, providing sound nutrition and not engaging in power struggles over food are the main goals:

Tips for Establishing Healthy Eating Patterns

1. Don't try to force your child to eat or fight over food. Of course, it is impossible to force someone to eat. But the real advice here is to avoid turning food into some kind of ammunition during a fight. Do not teach your child to eat to or refuse to eat in order to gain favor or express anger toward someone else.
2. Recognize that appetite varies. Children may eat well at one meal and have no appetite at another. Rather than seeing this as a problem, it may help to realize that

appetites do vary. Continue to provide good nutrition, but do not worry excessively if the child does not eat.

3. Keep it pleasant. This tip is designed to help caregivers create a positive atmosphere during mealtime. Mealtimes should not be the time for arguments or expressing tensions. You do not want the child to have painful memories of mealtimes together or have nervous stomachs and problems eating and digesting food due to stress.
4. No short order chefs. While it is fine to prepare foods that children enjoy, preparing a different meal for each child or family member sets up an unrealistic expectation from others. Children probably do best when they are hungry and a meal is ready. Limiting snacks rather than allowing children to "graze" continuously can help create an appetite for whatever is being served.
5. Limit choices. If you give your preschool aged child choices, make sure that you give them one or two specific choices rather than asking "What would you like for lunch?" If given an open choice, children may change their minds or choose whatever their sibling does not choose!
6. Serve balanced meals. This tip encourages caregivers to serve balanced meals. A box of macaroni and cheese is not a balanced meal. Meals prepared at home tend to have better nutritional value than fast food or frozen dinners. Prepared foods tend to be higher in fat and sugar content as these ingredients enhance taste and profit margin because fresh food is often more costly and less profitable. However, preparing fresh food at home is not costly. It does, however, require more activity. Preparing meals and including the children in kitchen chores can provide a fun and memorable experience.
7. Don't bribe. Bribing a child to eat vegetable by promising

desert is not a good idea. For one reason, the child will likely find a way to get the desert without eating the vegetables (by whining or fidgeting, perhaps, until the caregiver gives in), and for another reason, because it teaches the child that some foods are better than others. Children tend to naturally enjoy a variety of foods until they are taught that some are considered less desirable than others. A child, for example, may learn the broccoli they have enjoyed is seen as yucky by others unless it's smothered in cheese sauce!

To what extent do these tips address cultural practices? How might these tips vary by culture?

Brain Maturation

Brain weight: If you recall, the brain is about 75 percent its adult weight by two years of age. By age 6, it is at 95 percent its adult weight. Myelination and the development of dendrites continues to occur in the cortex and as it does, we see a corresponding change in what the child is capable of doing. Greater development in the prefrontal cortex, the area of the brain behind the forehead that helps us to think, strategizes, and controls emotion, makes it increasingly possible to control emotional outbursts and to understand how to play games. Consider 4 or 5 year old children and how they might approach a game of soccer. Chances are every move would be a response to the commands of a coach standing nearby calling out, "Run this way! Now, stop. Look at the ball. Kick the ball!" And when the child is not being told what to do, he or she is likely to be looking at the clover on the ground or a dog on the other side of the fence! Understanding the game, thinking ahead, and coordinating movement improve with practice and myelination. Not being too upset over a loss, hopefully, does as well.

Visual Pathways

Have you ever examined the drawings of young children? If you look closely, you can almost see the development of visual pathways reflected in the way these images change as pathways become more mature. Early scribbles and dots illustrate the use of simple motor skills. No real connection is made between an image being visualized and what is created on paper.

At age 3, the child begins to draw wispy creatures with heads and not much other detail. Gradually pictures begin to have more detail and incorporate more parts of the body. Arm buds become arms and faces take on noses, lips and eventually eyelashes. Look for drawings that you or your child has created to see this fascinating trend. Here are some examples of pictures drawn by my daughters from ages 2 to 7 years.

Angie

Growth in the hemispheres and corpus callosum: Between ages 3 and 6, the left hemisphere of the brain grows dramatically. This

side of the brain or hemisphere is typically involved in language skills. The right hemisphere continues to grow throughout early childhood and is involved in tasks that require spatial skills such as recognizing shapes and patterns. The corpus callosum which connects the two hemispheres of the brain undergoes a growth spurt between ages 3 and 6 as well and results in improved coordination between right and left hemisphere tasks. (I once saw a 5 year old hopping on one foot, rubbing his stomach and patting his head all at the same time. I asked him what he was doing and he replied, "My teacher said this would help my corpus callosum!" Apparently, his kindergarten teacher had explained the process!)

Motor Skill Development

Early childhood is a time when children are especially attracted to motion and song. Days are filled with moving, jumping, running, swinging and clapping and every place becomes a playground. Even the booth at a restaurant affords the opportunity to slide around in the seat or disappear underneath and imagine being a sea creature in a cave! Of course, this can be frustrating to a caregiver, but it's the business of early childhood. Children continue to improve their gross motor skills as they run and jump. And frequently ask their caregivers to "look at me" while they hop or roll down a hill. Children's songs are often accompanied by arm and leg movements or cues to turn around or move from left to right. Fine motor skills are also being refined in activities such as pouring water into a container, drawing, coloring, and using scissors. Some children's songs promote fine motor skills as well (have you ever heard of the song "itsy, bitsy, spider"?). Mastering the fine art of cutting one's own fingernails or tying shoes will take a lot of practice and maturation. Motor skills continue to develop in middle childhood-but for preschoolers, play that deliberately involves these skills is emphasized.

Go ahead. Sing along and practice your fine motor skills.

Sexual Development in Early Childhood

Historically, children have been thought of as innocent or incapable of sexual arousal (Aries, 1962). Yet, the physical dimension of sexual arousal is present from birth. But to associate the elements of seduction, power, love, or lust that is part of the adult meanings of sexuality would be inappropriate. Sexuality begins in childhood as a response to physical states and sensation and cannot be interpreted as similar to that of adults in any way (Carroll, 2007).

Infancy: Boys and girls are capable of erections and vaginal lubrication even before birth (Martinson, 1981). Arousal can signal overall physical contentment and stimulation that accompanies feeding or warmth. And infants begin to explore their bodies and touch their genitals as soon as they have the sufficient motor skills. This stimulation is for comfort or to relieve tension rather than to reach orgasm (Carroll, 2007).

Early Childhood: Self-stimulation is common in early childhood for both boys and girls. Curiosity about the body and about others' bodies is a natural part of early childhood as well. Consider this example. A mother is asked by her young daughter: "So it's okay to see a boy's privates as long as it's the boy's mother or a doctor?" The mother hesitates a bit and then responds, "Yes. I think that's alright." "Hmmm," the girl begins, "When I grow up, I want to be a doctor!" Hopefully, this subject is approached in a way that teaches children to be safe and know what is appropriate without frightening them or causing shame.

As children grow, they are more likely to show their genitals to siblings or peers, and to take off their clothes and touch each other (Okami et al., 1997). Masturbation is common for both boys and girls. Boys are often shown by other boys how to masturbate. But girls tend to find out accidentally. And boys masturbate more often and touch themselves more openly than do girls (Schwartz, 1999).

Hopefully, parents respond to this without undue alarm and without making the child feel guilty about their bodies. Instead,

messages about what is going on and the appropriate time and place for such activities help the child learn what is appropriate.

57. Cognitive Development

Early childhood is a time of pretending, blending fact and fiction, and learning to think of the world using language. As young children move away from needing to touch, feel, and hear about the world toward learning some basic principles about how the world works, they hold some pretty interesting initial ideas. For example, how many of you are afraid that you are going to go down the bathtub drain? Hopefully, none of you do! But a child of three might really worry about this as they sit at the front of the bathtub. A child might protest if told that something will happen "tomorrow" but be willing to accept an explanation that an event will occur "today after we sleep." Or the young child may ask, "How long are we staying? From here to here?" while pointing to two points on a table. Concepts such as tomorrow, time, size and distance are not easy to grasp at this young age. Understanding size, time, distance, fact and fiction are all tasks that are part of cognitive development in the preschool years.

Preoperational Intelligence

Piaget's stage that coincides with early childhood is the **preoperational stage.** The word operational means logical, so these children were thought to be illogical. However, they were learning to use language or to think of the world symbolically. Let's examine some Piaget's assertions about children's cognitive abilities at this age.

Pretend Play: Pretending is a favorite activity at this time. A toy has qualities beyond the way it was designed to function and can now be used to stand for a character or object unlike anything originally intended. A teddy bear, for example, can be a baby or the queen of a faraway land!

Piaget believed that children's pretend play helped children solidify new schemes they were developing cognitively. This play, then, reflected changes in their conceptions or thoughts. However, children also learn as they pretend and experiment. Their play does not simply represent what they have learned (Berk, 2007).

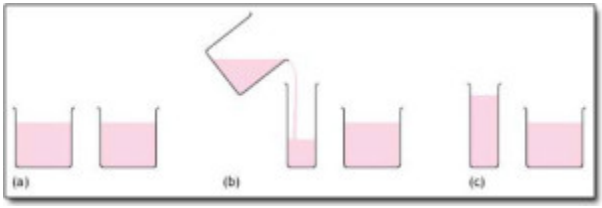
Egocentrism: Egocentrism in early childhood refers to the tendency of young children to think that everyone sees things in the same way as the child. Piaget's classic experiment on egocentrism involved showing children a 3 dimensional model of a mountain and asking them to describe what a doll that is looking at the mountain from a different angle might see. Children tend to choose a picture that represents their own, rather than the doll's view. However, when children are speaking to others, they tend to use different sentence structures and vocabulary when addressing a younger child or an older adult. This indicates some awareness of the views of others.

Syncretism: Syncretism refers to a tendency to think that if two events occur simultaneously, one caused the other. I remember my daughter asking that if she put on her bathing suit whether it would turn to summer!

Animism: Animism refers to attributing life-like qualities to objects. The cup is alive, the chair that falls down and hits the child's ankle is mean, and the toys need to stay home because they are tired. Watch this segment in which the actor Robin Williams sings a song to teach children the difference between what is alive and what is not alive. (Interesting, the puppets in the background sing and dance the phrase "it's not alive". This might be a bit confusing to the viewers!). Cartoons frequently show objects that appear alive and take on lifelike qualities. Young children do seem to think that objects that move may be alive but after age 3, they seldom refer to objects as being alive (Berk, 2007).

A YouTube element has been excluded from this version of the text. You can view it online here: https://library.achievingthedream.org/hostoschilddevelopmenteducation/?p=83

Classification Errors: Preoperational children have difficulty understanding that an object can be classified in more than one way. For example, if shown three white buttons and four black buttons and asked whether there are more black buttons or buttons, the child is likely to respond that there are more black buttons. As the child's vocabulary improves and more schemes are developed, the ability to classify objects improves.



Conservation of Liquid. Does pouring liquid in a tall, narrow container make it have more?

Conservation Errors: Conservation refers to the ability to recognize that moving or rearranging matter does not change the quantity. Imagine a 2 year old and a 4 year old eating lunch. The 4 year old has a whole peanut butter and jelly sandwich. He notices, however, that his younger sister's sandwich is cut in half and protests, "She has more!" Watch the following examples of conversation errors of quantity and volume:

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text. You can view it online here:
https://library.achievingthedream.org/
hostoschilddevelopmenteducation/?p=83

Theory of Mind

Imagine showing a child of three a bandaid box and asking the child what is in the box. Chances are, the child will reply, "bandaids." Now imagine that you open the box and pour out crayons. If you ask the child what they thought was in the box before it was opened, they may respond, "crayons". If you ask what a friend would have thought was in the box, the response would still be "crayons". Why? Before about 4 years of age, a child does not recognize that the mind can hold ideas that are not accurate. So this 3 year old changes his or her response once shown that the box contains crayons. The theory of mind is the understanding that the mind can be tricked or that the mind is not always accurate. At around age 4, the child would reply, "Crayons" and understand that thoughts and realities do not always match.

This awareness of the existence of mind is part of social intelligence or the ability to recognize that others can think differently about situations. It helps us to be self-conscious or aware that others can think of us in different ways and it helps us to be able to be understanding or empathic toward others. This mind reading ability helps us to anticipate and predict the actions of others (even though these predictions are sometimes inaccurate).

The awareness of the mental states of others is important for communication and social skills. A child who demonstrates this skill is able to anticipate the needs of others. This video describes a research in which theory of mind is linked to popularity.

Language Development

Vocabulary growth: A child's vocabulary expands between the ages of 2 to 6 from about 200 words to over 10,000 words through a process called fast-mapping. Words are easily learned by making connections between new words and concepts already known. The parts of speech that are learned depend on the language and what is emphasized. Children speaking verb-friendly languages such as Chinese and Japanese as well as those speaking English tend to learn nouns more readily. But those learning less verb-friendly languages such as English seem to need assistance in grammar to master the use of verbs (Imai, et als, 2008). Children are also very creative in creating their own words to use as labels such as a "take-care-of" when referring to John, the character on the cartoon, Garfield, who takes care of the cat.

Literal meanings: Children can repeat words and phrases after having heard them only once or twice. But they do not always understand the meaning of the words or phrases. This is especially true of expressions or figures of speech which are taken literally. For example, two preschool aged girls began to laugh loudly while listening to a tape-recording of Disney's "Sleeping Beauty" when the narrator reports, "Prince Phillip lost his head!" They image his head popping off and rolling down the hill as he runs and searches for it. Or a classroom full of preschoolers hears the teacher say, "Wow! That was a piece of cake!" The children began asking "Cake? Where is my cake? I want cake!"

Overregularization: Children learn rules of grammar as they learn language but may apply these rules inappropriately at first. For instance, a child learns to ad "ed" to the end of a word to indicate past tense. Then form a sentence such as "I goed there. I doed that." This is typical at ages 2 and 3. They will soon learn new words such as went and did to be used in those situations.

The Impact of Training: Remember Vygotsky and the Zone of Proximal Development? Children can be assisted in learning

language by others who listen attentively, model more accurate pronunciations and encourage elaboration. The child exclaims, "I'm goed there!" and the adult responds, "You went there? Say, 'I went there.' Where did you go?" Children may be ripe for language as Chomsky suggests, but active participation in helping them learn is important for language development as well. The process of scaffolding is one in which the guide provides needed assistance to the child as a new skill is learned.

Private Speech: Do you ever talk to yourself? Why? Chances are, this occurs when you are struggling with a problem, trying to remember something, or feel very emotional about a situation. Children talk to themselves too. Piaget interpreted this as egocentric speech or a practice engaged in because of a child's inability to seeing things from others points of views. Vygotsky, however, believed that children talk to themselves in order to solve problems or clarify thoughts. As children learn to think in words, they do so aloud before eventually closing their lips and engaging in private speech or inner speech. Thinking out loud eventually becomes thought accompanied by internal speech and talking to oneself becomes a practice only engaged in when we are trying to learn something or remember something, etc. This inner speech is not as elaborate as the speech we use when communicating with others (Vygotsky, 1962).

58. Psychosocial Development

A Look at Self-Concept, Gender Identity, and Family Life

Self-Concept

Early childhood is a time of forming an initial sense of self. A self-concept or idea of who we are, what we are capable of doing, and how we think and feel is a social process that involves taking into consideration how others view us. It might be said, then, that in order to develop a sense of self, you must have interaction with others. Interactionist theorists, Cooley and Mead offer two interesting explanations of how a sense of self develops.

Interactionism and Views of Self

Cooley: Charles Horton Cooley (1964) suggests that our self concept comes from looking at how others respond to us. This process, known as the looking-glass self involves looking at how others seem to view us and interpreting this as we make judgments about whether we are good or bad, strong or weak, beautiful or ugly, and so on. Of course, we do not always interpret their responses accurately so our self-concept is not simply a mirror reflection of the views of others. After forming an initial self-concept, we may use it as a mental filter screening out those responses that do not seem to fit our ideas of who we are. So compliments may be negated, for example. Think of times in your life when you feel self-conscious. The process of the looking-glass self is pronounced when we are preschoolers, or perhaps when we are in a new school or job or are taking on a new role in our personal lives and are trying to gauge our own performances. When we feel more sure of who we are we focus less on how we appear to others.

Mead: Herbert Mead (1967) offers an explanation of how we develop a social sense of self by being able to see ourselves through the eyes of others. There are two parts of the self: the "I" which is the part of the self that is spontaneous, creative, innate, and is not concerned with how others view us and the "me" or the social definition of who we are.

When we are born, we are all "I" and act without concern about how others view us. But the socialized self begins when we are able to consider how one important person views us. This initial stage is called "taking the role of the significant other". For example, a child may pull a cat's tail and be told by his mother, "No! Don't do that, that's bad" while receiving a slight slap on the hand. Later, the child may mimic the same behavior toward the self and say aloud, "No, that's bad" while patting his own hand. What has happened? The child is able to see himself through the eyes of the mother. As the child grows and is exposed to many situations and

rules of culture, he begins to view the self in the eyes of many others through these cultural norms or rules. This is referred to as "taking the role of the generalized other" and results in a sense of self with many dimensions. The child comes to have a sense of self as student, as friend, as son, and so on.

Exaggerated Sense of Self

One of the ways to gain a clearer sense of self is to exaggerate those qualities that are to be incorporated into the self. Preschoolers often like to exaggerate their own qualities or to seek validation as the biggest or smartest or child who can jump the highest. I wonder if messages given in children's books or television shows that everyone is special are really meaningful to children who want to separate themselves from others on such qualities. This exaggeration tends to be replaced by a more realistic sense of self in middle childhood.

Erikson: Initiative vs. Guilt

The trust and autonomy of previous stages develop into a desire to take initiative or to think of ideas and initiative action. Children may want to build a fort with the cushions from the living room couch or open a lemonade stand in the driveway or make a zoo with their stuffed animals and issue tickets to those who want to come. Or they may just want to get themselves ready for bed without any assistance. To reinforce taking initiative, caregivers should offer praise for the child's efforts and avoid being critical of messes or mistakes. Soggy washrags and toothpaste left in the sink pales in comparison to the smiling face of a five year old that emerges from the bathroom with clean teeth and pajamas!

Gender Identity, Gender Constancy and Gender Roles

Another important dimension of the self is the sense of self as male or female. Preschool aged children become increasingly interested in finding out the differences between boys and girls both physically and in terms of what activities are acceptable for each. While 2 year olds can identify some differences and learn whether they are boys or girls, preschoolers become more interested in what it means to be male or female. This self-identification or gender identity is followed sometime later with gender constancy or the knowledge that gender does not change. Gender roles or the rights and expectations that are associated with being male or female are learned throughout childhood and into adulthood.

Freud and the phallic stage: Freud believed that masculinity and femininity were learned during the phallic stage or psychosexual development. During the phallic stage, the child develops an attraction to the opposite sexed parent but after recognizing that that parent is unavailable, learns to model their own behavior after the same sexed parent. The child develops his or her own sense of masculinity or femininity from this resolution. And, according to Freud, a person who does not exhibit gender appropriate behavior, such as a woman who competes with men for jobs or a man who lacks self-assurance and dominance, has not successfully completed this stage of development. Consequently, such a person continues to struggle with his or her own gender identity.

Chodorow and mothering: Chodorow, a neoFreudian, believed that mothering promotes gender stereotypic behavior. Mothers push their sons away too soon and direct their attention toward problem-solving and independence. As a result, sons grow up confident in their own abilities but uncomfortable with intimacy. Girls are kept dependent too long and are given unnecessary and even unwelcome assistance from their

mothers. Girls learn to underestimate their abilities and lack assertiveness, but feel comfortable with intimacy.

Both of these models assume that early childhood experiences result in lifelong gender self-concepts. However, gender socialization is a process that continues throughout life. Children, teens, and adults refine and can modify their sense of self based on gender.

Learning through reinforcement and modeling: Learning theorists suggest that gender role socialization is a result of the ways in which parents, teachers, friends, schools, religious institutions, media and others send messages about what is acceptable or desirable behavior as males or females. This socialization begins early-in fact, it may even begin the moment a parent learns that a child is on the way. Knowing the sex of the child can conjure up images of the child's behavior, appearance, and potential on the part of a parent. And this stereotyping continues to guide perception through life. Consider parents of newborns, shown a 7 pound, 20 inch baby, wrapped in blue (a color designating males) describe the child as tough, strong, and angry when crying. Shown the same infant in pink (a color used in the United States for baby girls), these parents are likely to describe the baby as pretty, delicate, and frustrated when crying. (Maccoby & Jacklin, 1987). Female infants are held more, talked to more frequently and given direct eye contact, while male infants play is often mediated through a toy or activity.

Sons are given tasks that take them outside the house and that have to be performed only on occasion while girls are more likely to be given chores inside the home such as cleaning or cooking that is performed daily. Sons are encouraged to think for themselves when they encounter problems and daughters are more likely to be given assistance even when they are working on an answer. This impatience is reflected in teachers waiting less time when asking a female student for an answer than when asking for a reply from a male student (Sadker and Sadker, 1994). Girls are given the message from teachers that they must try harder and endure in order to

succeed while boys successes are attributed to their intelligence. Of course, the stereotypes of advisors can also influence which kinds of courses or vocational choices girls and boys are encouraged to make.

Friends discuss what is acceptable for boys and girls and popularity may be based on modeling what is considered ideal behavior or looks for the sexes. Girls tend to tell one another secrets to validate others as best friends while boys compete for position by emphasizing their knowledge, strength or accomplishments. This focus on accomplishments can even give rise to exaggerating accomplishments in boys, but girls are discouraged from showing off and may learn to minimize their accomplishments as a result.

Gender messages abound in our environment. But does this mean that each of us receives and interprets these messages in the same way? Probably not. In addition to being recipients of these cultural expectations, we are individuals who also modify these roles (Kimmel, 2008).

How much does gender matter? In the United States, gender differences are found in school experiences (even into college and professional school, girls are less vocal in the classrooms and much more at risk for sexual harassment from teachers, coaches, classmates, and professors), in social interactions and in media messages. The stereotypes that boys should be strong, forceful, active, dominant, and rational and that girls should be pretty, subordinate, unintelligent, emotional, and gabby are portrayed in children's toys, books, commercials, video games, movies, television shows and music. In adulthood, these differences are reflected in income gaps between men and women where women working full-time earn about 74 percent the income of men, in higher rates of women suffering rape and domestic violence, higher rates of eating disorders for females, and in higher rates of violent death for men in young adulthood. Each of these differences will be explored further in subsequent chapters.

The impact in India: Gender differences in India can be a matter of life and death as preferences for male children have been strong

historically and are still held, especially in rural areas. (WHO, 2010). Male children are given preference for receiving food, breast milk, medical care and other resources. It is no longer legal to give parents information on the sex of their developing child for fear that they will abort a female fetus. Clearly, gender socialization and discrimination still impact development in a variety of ways across the globe.

59. Childhood Stress and Development

What is the impact of stress on child development? Children experience different types of stressors. Normal, everyday stress can provide an opportunity for young children to build coping skills and poses little risk to development. Even more long-lasting stressful events such as changing schools or losing a loved one can be managed fairly well. But children who experience toxic stress or who live in extremely stressful situations of abuse over long periods of time can suffer long-lasting effects. The structures in the midbrain or limbic system such as the hippocampus and amygdala can be vulnerable to prolonged stress during early childhood (Middlebrooks and Audage, 2008). High levels of the stress hormone cortisol can reduce the size of the hippocampus and effect the child's memory abilities. Stress hormones can also reduce immunity to disease. The brain

exposed to long periods of severe stress can develop a low threshold making the child hypersensitive to stress in the future. However, the effects of stress can be minimized if the child has the support of caring adults.

In the next lesson, we continue to look at childhood as we examine the period between starting school and entering adolescence known as middle childhood.

PART XII

MODULE 10: MIDDLE CHILDHOOD

60. Physical Development

Growth Rates and Motor Skills

Rates of growth generally slow during Middle Childhood. Typically, a child will gain about 5-7 pounds a year and grow about 2 inches per year. They also tend to slim down and gain muscle strength and lung capacity making it possible to engage in strenuous physical activity for long periods of time. The brain reaches its adult size at about age 7. The school-aged child can is better able to plan, coordinate activity using both left and right hemispheres of the brain, and to control emotional outbursts. Paying attention is also improved as the prefrontal cortex matures. And as the myelin continues to develop, the child's reaction time also improves as well. One result of the slower rate of growth is an improvement in motor skills. Children of this age tend to sharpen their abilities to perform both gross motor skills such as riding a bike and fine motor skills such as cutting their fingernails.

Organized Sports: Pros and Cons

Middle childhood seems to be a great time to introduce children to organized sports. And in fact, many parents do. Nearly 3 million children play soccer in the United States (listen to NPR's "Youth Soccer Coaches Encouraged to Ease Regimen" story from 5/24/06). This activity promises to help children build social skills, improve athletically and learn a sense of competition. It has been suggested, however, that the emphasis on competition and athletic skill can be counterproductive and lead children to grow tired of the game and want to quit. In many respects, it appears that children's activities are no longer children's activities once adults become involved and approach the games as adults rather than children. The U. S. Soccer Federation recently advised coaches to reduce the amount of drilling engaged in during practice and to allow children to play more freely and to choose their own positions. The hope is that this will build on their love of the game and foster their natural talents.

New Concerns

Childhood Obesity

Rates: About 16 to 33 percent of American children are obese (U. S. Department of Health and Human Services, 2005). This is defined as being at least 20 percent over their ideal weight. The percentage of obesity in school aged children has increased substantially since the 1960s and has in fact doubled since the 1980s.

Reasons: This is true in part because of the introduction of a steady diet of television and other sedentary activities. In addition, we have come to emphasize high fat, fast foods as a culture. Pizza,

hamburgers, chicken nuggets and "lunchables" with soda have replaced more nutritious foods as staples.

Consequences: Children who are overweight tend to be ridiculed and teased by others. This can certainly be damaging to their self-image and popularity. In addition, obese children run the risk of suffering orthopedic problems such as knee injuries, and an increase risk of heart disease and stroke in adulthood. It's hard for a child who is obese to become a non-obese adult. In addition, the number of cases of pediatric diabetes has risen dramatically in recent years.

Recommendations: Dieting is not really the answer. If you diet, your basal metabolic rate tends to decrease thereby making the body burn even fewer calories in order to maintain the weight. Increased activity is much more effective in lowering the weight and improving the child's health and psychological well-being. Exercise reduces stress and being an overweight child, subjected to the ridicule of others can certainly be stressful. Parents should take caution against emphasizing diet alone to avoid the development of any obsession about dieting that can lead to eating disorders as teens. Again, increasing a child's activity level is most helpful.

A Look at School Lunches: Many children in the United States buy their lunches in the school cafeteria, so it might be worthwhile to look at the nutritional content of school lunches. You can obtain this information through your local school district's website. An example of a school menu and nutritional analysis from a school district in north central Texas is a meal consisting of pasta alfredo, bread stick, peach cup, tomato soup, and a brownie, and 2% milk and is in compliance with Federal Nutritional Guidelines of 108% calories, 24 % protein, 55 % carbohydrates, 27% fat, and 8% saturated fats, according to the website. Students may also purchase chips, cookies, or ice cream along with their meals. Many school districts rely on the sale of desert and other items in the lunchrooms to make additional revenues. Many children purchase these additional items and so our look at their nutritional intake should also take this into consideration.

Consider another menu from an elementary school in the state of Washington. This sample meal consists of chicken burger, tater tots, fruit and veggies and 1% or nonfat milk. This meal is also in compliance with Federal Nutrition Guidelines but has about 300 fewer calories. And, children are not allowed to purchase additional deserts such as cookies or ice cream.

Of course, children eat away from school as well. Listen to NPR's Kids Have Easy Access to Junk Food to hear a story about how advertising and fast food restaurant locations may influence children's diets.

61. Cognitive Development

Recall from our last lesson on early childhood are in the **preoperational** stage, according to Piaget, and during this stage children are learning to think symbolically about the world.

Concrete Operational Thought

From ages 7 to 11, the school-aged child is in what Piaget referred to as the concrete operational stage of cognitive development. This involves mastering the use of logic in concrete ways. The child can use logic to solve problems tied to their own direct experience but has trouble solving hypothetical problems or considering more abstract problems. The child uses inductive reasoning which means thinking that the world reflects one's own personal experience. For example, a child has one

friend who is rude, another friend who is also rude, and the same is true for a third friend. The child may conclude that friends are rude. (We will see that this way of thinking tends to change during adolescence being replaced with deductive reasoning.)

The word concrete refers to that which is tangible; that which can be seen or touched or experienced directly. The concrete operational child is able to make use of logical principles in solving problems involving the physical world. For example, the child can understand principles of cause and effect, size, and distance.

Classification: As children's experiences and vocabularies grow, they build schema and are able to classify objects in many different ways. Look at the word below and write a list of the ways in which it could be classified:

BALL

(Compare your list with the one at the end of the lesson.)

Identity: One feature of concrete operational thought is the understanding that objects have an identity or qualities that do not change even if the object is altered in some way. For instance, mass of an object does not change by rearranging it. A piece of chalk is still chalk even when the piece is broken in two.

Reversibility: The child learns that some things that have been changed can be returned to their original state. Water can be frozen and then thawed to become liquid again. But eggs cannot be unscrambled. Arithmetic operations are reversible as well: 2 + 3 = 5 and 5 − 3 = 2. Many of these cognitive skills are incorporated into the school's curriculum through mathematical problems and in worksheets about which situations are reversible or irreversible. (If you have access to children's school papers, look for examples of these.)

Reciprocity: Remember the example in our last lesson of children thinking that a tall beaker filled with 8 ounces of water was "more" than a short, wide bowl filled with 8 ounces of water? Concrete operational children can understand the concept of reciprocity which means that changing one quality (in this example, height or

water level) can be compensated for by changes in another quality (width). So there is the same amount of water in each container although one is taller and narrower and the other is shorter and wider.

These new cognitive skills increase the child's understanding of the physical world. Operational or logical thought about the abstract world comes later.

Information Processing Theory

Information processing theory is a classic theory of memory that compares the way in which the mind works to computer storing, processing and retrieving information.

There are three levels of memory:

1) **Sensory register:** Information first enters our sensory register. Stop reading and look around the room very quickly. (Yes, really. Do it!) Okay. What do you remember? Chances are, not much. Everything you saw and heard entered into your sensory register. And although you might have heard yourself sigh, caught a glimpse of your dog walking across the room, and smelled the soup on the stove, you did not register those sensations. Sensations are continuously coming into our brains, and yet most of these sensations are never really perceived or stored in our minds. They are lost after a few seconds because they were immediately filtered out as irrelevant. If the information is not perceived or stored, it is discarded quickly.

2) **Working memory** (short-term memory): If information is meaningful (either because it reminds us of something else or because we must remember it for something like a history test we will be taking in 5 minutes), it makes its way into our working memory. This consists of information of which we are immediately aware. All of the things on your mind at this moment are part of your working memory. There is a limited amount of information that

can be kept in the working memory at any given time. So, if you are given too much information at a time, you may lose some of it. (Have you ever been writing down notes in a class and the instructor speaks too quickly for you to get it all in your notes? You are trying to get it down and out of your working memory to make room for new information and if you cannot "dump" that information onto your paper and out of your mind quickly enough, you lose what has been said.)

Information in our working memory must be stored in an effective way in order to be accessible to us for later use. It is stored in our long-term memory or knowledge base.

3) **Knowledge base** (long-term memory): This level of memory has an unlimited capacity and stores information for days, months or years. It consists of things that we know of or can remember if asked. This is where you want information to ultimately be stored. The important thing to remember about storage is that it must be done in a meaningful or effective way. In other words, if you simply try to repeat something several times in order to remember it, you may only be able to remember the sound of the word rather than the meaning of the concept. So if you are asked to explain the meaning of the word or to apply a concept in some way, you will be lost. Studying involves organizing information in a meaningful way for later retrieval. Passively reading a text is usually inadequate and should be thought of as the first step in learning material. Writing key words, thinking of examples to illustrate their meaning, and considering ways that concepts are related are all techniques helpful for organizing information for effective storage and later retrieval.

During middle childhood, children are able to learn and remember due to an improvement in the ways they attend to and store information. As children enter school and learn more about the world, they develop more categories for concepts and learn more efficient strategies for storing and retrieving information. One significant reason is that they continue to have more experiences on which to tie new information. New experiences are similar to old

ones or remind the child of something else about which they know. This helps them file away new experiences more easily.

They also have a better understanding of how well they are performing on a task and the level of difficulty of a task. As they become more realistic about their abilities, they can adapt studying strategies to meet those needs. While preschoolers may spend as much time on an unimportant aspect of a problem as they do on the main point, school aged children start to learn to prioritize and gage what is significant and what is not. They develop metacognition or the ability to understand the best way to figure out a problem. They gain more tools and strategies (such as "i before e except after c" so they know that "receive" is correct but "recieve" is not.)

Language Development

Vocabulary

One of the reasons that children can classify objects in so many ways is that they have acquired a vocabulary to do so. By 5th grade, a child's vocabulary has grown to 40,000 words. It grows at the rate of 20 words per day, a rate that exceeds that of preschoolers. This language explosion, however, differs from that of preschoolers because it is facilitated by being able to association new words with those already known and because it is accompanied by a more sophisticated understanding of the meanings of a word.

New Understanding

The child is also able to think of objects in less literal ways. For

example, of asked for the first word that comes to mind when one hears the word "pizza", the preschooler is likely to say "eat" or some word that describes what is done with a pizza. However, the school-aged child is more likely to place pizza in the appropriate category and say "food" or "carbohydrate".

This sophistication of vocabulary is also evidenced in the fact that school-aged children are able to tell jokes and delight in doing do. They may use jokes that involve plays on words such as "knock-knock" jokes or jokes with punch lines. Preschoolers do not understand plays on words and rely on telling "jokes" that are literal or slapstick such as "A man fell down in the mud! Isn't that funny?"

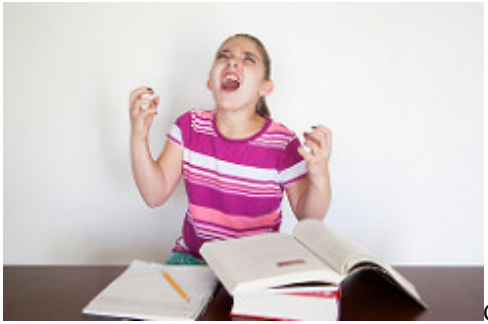
Grammar and Flexibility

School-aged children are also able to learn new rules of grammar with more flexibility. While preschoolers are likely to be reluctant to give up saying "I goed there", school-aged children will learn this rather quickly along with other rules of grammar.

While the preschool years might be a good time to learn a second language (being able to understand and speak the language), the school years may be the best time to be taught a second language (the rules of grammar).

How many ways can you classify "ball"? It's a word, a round object, a toy, a shape, a rolling object, a piece of playground equipment, another word for "fun", etc.

62. Developmental Problems



Children's cognitive and social skills are evaluated as they enter and progress through school. Sometimes this evaluation indicates that a child needs special assistance with language or in learning how to interact with others. Evaluation and diagnosis of a child can be the first step in helping to provide that child with the type of instruction and resources needed. But diagnosis and labeling also have social implications. It is important to consider that children can be misdiagnosed and that once a child has received a diagnostic label, the child, teachers, and family members may tend to interpret actions of the child through that label. The label can also influence the child's self-concept. Consider, for example, a child who is misdiagnosed as learning disabled. That child may expect to have difficulties in school, lack confidence, and out of these expectations, have trouble indeed. This self-fulfilling prophecy or tendency to act in such a way as to make what you predict will happen comes true, calls our attention to the power that labels can have whether or not they are accurately applied. It is also important to consider that children's difficulties can change over time; a child who has problems in school, may improve later or may live under circumstances as an adult where the problem (such as a delay in math skills or reading skills) is no longer relevant. That person, however, will still have a label as learning disabled. It should be recognized that the distinction between abnormal and normal

behavior is not always clear; some abnormal behavior in children is fairly common. Misdiagnosis may be more of a concern when evaluating learning difficulties than in cases of autism spectrum disorder where unusual behaviors are clear and consistent.

Keeping these cautionary considerations in mind, let's turn our attention to some developmental and learning difficulties.

Autism Spectrum Disorders

The estimate published by the Center for Disease Control (2006) is that about 1 out of every 166 children in the United States has an autism spectrum disorder. Autism spectrum disorders include autism, Asperger's disorder and pervasive developmental disabilities. Many of these children are not identified until they reach school age. In 2003, about 141,000 children received special education through the public schools (Center for Disease Control, 2006). These disorders are found in all racial and ethnic groups and are more common in boys than in girls. All of these disorders are marked by difficulty in social interactions, problems in various areas of communication, and in difficulty with altering patterns or daily routines. There is no single cause of ASDs and the causes of these disorders are to a large extent, unknown. In cases involving identical twins, if one twin has autism, the other is also autistic about 75 percent of the time. Rubella, fragile X syndrome and PKU that has been untreated are some of the medical conditions associated with risks of autism.

None of these disorders is curable. Some individuals benefit from medications that alleviate some of the symptoms of ASDs. But the most effective treatments involve behavioral intervention and teaching techniques used to promote the development of language and social skills, and to structure learning environments that accommodate the needs of these children.

Autism is a developmental disorder more commonly known than

Asperger's or Pervasive Developmental disorders. A person with autism has difficulty with and a lack of interest in learning language. An autistic child may respond to a question by repeating the question or might rarely speak. Sometimes autistic children learn more difficult words before simple words or complicated tasks before easier ones. The person has difficulty reading social cues such as the meanings of non-verbal gestures such as a wave of the hand or the emotion associated with a frown. Intense sensitivity to touch or visual stimulation may also be experienced. Autistic children have poor social skills and are unable to communicate with others or empathize with others emotionally. An autistic views the world differently and learns differently than others. Autistic children tend to prefer routines and patterns and become upset when routines are altered. For example, moving the furniture or changing the daily schedule can be very upsetting.

Asperger's syndrome is considered by some to be the same as high functioning autism. Others suggest that Asperger's disorder is different from autism in that language development is generally not delayed (Medline Plus, 2006). A person with Asperger's syndrome does not experience cognitive developmental delays, but has difficulty in social interactions. This person may be identified as strange by others, may have difficulty reading or identifying with other people's emotions, and may prefer routine and become upset if routines are disrupted. Many people with Asperger's syndrome may have above average intelligence and may have an intense focus of interests in a particular field. For example, a person may be extremely interested in and knowledgeable about cars. Another might be very interested in the smell of people's shoes.

Pervasive developmental disorder is a term used to refer to difficulties in socialization and delays in developing communicative skills. This is usually recognized before 3 years of age. A child with PDD may interact in unusual ways with toys, people, or situations, and may engage in repetitive movement.

Learning Disabilities

What is a learning disability? The spectrum disorders just described impact many areas of the child's life. And if a child is mentally retarded, that child is typically slow in all areas of learning. However, a child with a learning disability has problems in a specific area or with a specific task or type of activity related to education. A learning difficulty refers to a deficit in a child's ability to perform an expected academic skill (Berger, 2005). These difficulties are identified in school because this is when children's academic abilities are being tested, compared, and measured. Consequently, once academic testing is no longer essential in that person's life (as when they are working rather than going to school) these disabilities may no longer be noticed or relevant, depending on the person's job and the extent of the disability.

Dyslexia is one of the most commonly diagnosed disabilities and involves having difficulty in the area of reading. This diagnosis is used for a number of reading difficulties. For example, the child may reverse letters or have difficulty reading from left to right or may have problems associating letters with sounds. It appears to be rooted in some neurological problems involving the parts of the brain active in recognizing letters, verbally responding, or being able to manipulate sounds (National Institute of Neurological Disorders and Stroke, 2006). Treatment typically involves altering teaching methods to accommodate the person's particular problematic area.

Attention Deficit Hyperactivity Disorder is considered a neurological and behavioral disorder in which a person has difficulty staying on task, screening out distractions, and inhibiting behavioral outbursts. The most commonly recommended treatment involves the use of medication, structuring the classroom environment to keep distractions at a minimum, tutoring, and teaching parents how to set limits and encourage age-appropriate behavior (NINDS, 2006).

63. Psychosocial Development

Now let's turn our attention to concerns related to self-concept, the world of friendships, and family life.

Self-Concept

Children in middle childhood have a more realistic sense of self than do those in early childhood. That exaggerated sense of self as "biggest" or "smartest" or "tallest" gives way to an understanding of one's strengths and weaknesses. This can be attributed to greater experience in comparing one's own performance with that of others and to greater cognitive flexibility. A child's self-concept can be influenced by peers and family and the messages they send about a child's worth. Contemporary children also receive messages from

the media about how they should look and act. Movies, music videos, the internet, and advertisers can all create cultural images of what is desirable or undesirable and this too can influence a child's self-concept.

The Tweens

Advertisers have created a new consumer group known as the "tweens". This group spends an estimated $51 billion dollars annually and has another $170 billion a year spent on them (Irvine, 2006). Tweens range in age from 8 to 12 years and are characterized as sophisticated, early-maturing teenagers concerned primarily with their appearance, weight, and sexuality ("The 'Tween Market'" Media Awareness Network, 2007). Tweens are primarily targeted as consumers of media, clothing, and products that make them look "cool" and feel independent. For example, attitude t-shirts have been very popular among female tweens for the past several years and the slogans on these shirts reflect what might be considered "cool". Here are a few found in a national retail clothing store that focuses on fashion for tweens.

- Your boyfriend gave me this shirt.
- I live to shop
- It's all about me
- You wish

In general, toys are not marketed to this age group as they once were. However, some toys designed to appeal to slightly younger children tend to sexualize children (Harmanci, 2006). For an example of such sexy children's dolls, go to www.bratz.com. Jean Kilbourne, a noted expert on the impact of advertising on self-image, responds to the promotion of such products as examples

of how "marketers are hijacking our children's sexuality" at the expense of childhood (Squire, 2006).

Sexual Abuse in Middle Childhood

Being sexually abused as a child can have a powerful impact on self-concept. Childhood sexual abuse is defined as any sexual contact between a child and an adult or a much older child. Incest refers to sexual contact between a child and family members. In each of these cases, the child is exploited by an older person without regard for the child's developmental immaturity and inability to understand the sexual behavior (Steele, 1986). The concept of **false self-training** (Davis, 1999) refers to holding a child to adult standards while denying the child's developmental needs. Sexual abuse is just one example of false self-training. Children are held to adult standards of desirableness and sexuality while their level of cognitive, psychological, and emotional immaturity is ignored. Consider how confusing it might be for a 9 year old girl who has physically matured early to be thought of as a potential sex partner. Her cognitive, psychological, and emotional state do not equip her to make decisions about sexuality or, perhaps, to know that she can say no to sexual advances. She may feel like a 9 year old in all ways and be embarrassed and ashamed of her physical development. Girls who mature early have problems with low self-esteem because of the failure of others (family members, teachers, ministers, peers, advertisers, and others) to recognize and respect their developmental needs. Overall, youth are more likely to be victimized because they do not have control over their contact with offenders (parents, babysitters, etc.) and have no means of escape (Finkelhor and Dzuiba-Leatherman, in Davis, 1999).

Researchers estimate that 1 out of 4 girls and one out of 10 boys has been sexually abused (Valente, 2005). The median age for sexual abuse is 8 or 9 years for both boys and girls (Finkelhor et. al.

1990). Most boys and girls are sexually abused by a male. Although rates of sexual abuse are higher for girls than for boys, boys may be less likely to report abuse because of the cultural expectation that boys should be able to take care of themselves and because of the stigma attached to homosexual encounters (Finkelhor et. al. 1990). Girls are more likely to be abused by family member and boys by strangers. Sexual abuse can create feelings of self-blame, betrayal, and feelings of shame and guilt (Valente, 2005). Sexual abuse is particularly damaging when the perpetrator is someone the child trusts and may lead to depression, anxiety, problems with intimacy, and suicide (Valente, 2005). The topic of the sexualization of girls in media and society was of chief concern by the American Psychological Association in 2007 and their findings and recommendations to reduce this problem can be accessed here.

Industry vs. Inferiority

According to Erikson, children in middle childhood are very busy or industrious. They are constantly doing, planning, playing, getting together with friends, achieving. This is a very active time and a time when they are gaining a sense of how they measure up when compared with friends. Erikson believed that if these industrious children can be successful in their endeavors, they will get a sense of confidence for future challenges. If not, a sense of inferiority can be particularly haunting during middle childhood.

The Society of Children

Friendships take on new importance as judges of one's worth, competence, and attractiveness. Friendships provide the opportunity for learning social skills such as how to communicate

with others and how to negotiate differences. Children get ideas from one another about how to perform certain tasks, how to gain popularity, what to wear, say, and listen to, and how to act. This society of children marks a transition from a life focused on the family to a life concerned with peers. Peers play a key role in a child's self-esteem at this age as any parent who has tried to console a rejected child will tell you. No matter how complimentary and encouraging the parent may be, being rejected by friends can only be remedied by renewed acceptance.

Peer Relationships: Most children want to be liked and accepted by their friends. Some popular children are nice and have good social skills. These popular-prosocial children tend to do well in school and are cooperative and friendly. Popular-antisocial children may gain popularity by acting tough or spreading rumors about others (Cillessen & Mayeux, 2004). Rejected children are sometimes excluded because they are shy and withdrawn. The withdrawn-rejected children are easy targets for bullies because they are unlikely to retaliate when belittled (Boulton, 1999). Other rejected children are ostracized because they are aggressive, loud, and confrontational. The aggressive-rejected children may be acting out of a feeling of insecurity. Unfortunately, their fear of rejection only leads to behavior that brings further rejection from other children. Children who are not accepted are more likely to experience conflict, lack confidence, and have trouble adjusting.

Family Life

During middle childhood, children spend less time with parents and more time with peers. And parents may have to modify their approach to parenting to accommodate the child's growing independence. Using reason and engaging in joint decision-making whenever possible may be the most effective approach (Berk, 2007). However, Asian-American, African-American, and Mexican-

American parents are more likely than European-Americans to use an authoritarian style of parenting. This authoritarian style of parenting that using strict discipline and focuses on obedience is also tempered with acceptance and warmth on the part of the parents. And children raised in this manner tend to be confident, successful and happy (Chao, 2001; Stewart and Bond, 2002).

Family Tasks

One of the ways to assess the quality of family life is to consider the tasks of families.

Berger (2005) lists five family functions:

1. Providing food, clothing and shelter
2. Encouraging Learning
3. Developing self-esteem
4. Nurturing friendships with peers
5. Providing harmony and stability

Notice that in addition to providing food, shelter, and clothing, families are responsible for helping the child learn, relate to others, and have a confident sense of self. The family provides a harmonious and stable environment for living. A good home environment is one in which the child's physical, cognitive, emotional, and social needs are adequately met. Sometimes families emphasize physical needs, but ignore cognitive or emotional needs. Other times, families pay close attention to physical needs and academic requirements, but may fail to nurture the child's friendships with peers or guide the child toward developing healthy relationships. Parents might want to consider how it feels to live in the household. Is it stressful and conflict-ridden? Is it a place where family members enjoy being?

Family Change

Divorce: A lot of attention has been given to the impact of divorce on the life of children. The assumption has been that divorce has a strong, negative impact on the child and that single-parent families are deficient in some way. However, 75-80 percent of children and adults who experience divorce suffer no long term effects (Hetherington & Kelly, 2002). Children of divorce and children who have not experienced divorce are more similar than different (Hetherington & Kelly, 2002).

Mintz (2004) suggests that the alarmist view of divorce was due in part to the newness of divorce when rates in the United States began to climb in the late 1970s. Adults reacting to the change grew up in the 1950s when rates were low. As divorce has become more common and there is less stigma associated with divorce, this view has changed somewhat. Social scientists have operated from the divorce as deficit model emphasizing the problems of being from a "broken home" (Seccombe &Warner, 2004). But more recently, a more objective view of divorce, repartnering, and remarriage indicates that divorce, remarriage and life in stepfamilies can have a variety of effects. The exaggeration of the negative consequences of divorce has left the majority of those who do well hidden and subjected them to unnecessary stigma and social disapproval (Hetherington & Kelly, 2002).

The tasks of families listed above are functions that can be fulfilled in a variety of family types-not just intact, two-parent households. Harmony and stability can be achieved in many family forms and when it is disrupted, either through divorce, or efforts to blend families, or any other circumstances, the child suffers (Hetherington & Kelly, 2002).

Factors Affecting the Impact of Divorce

As you look at the consequences (both pro and con) of divorce and remarriage on children, keep these family functions in mind. Some negative consequences are a result of financial hardship rather than divorce per se (Drexler, 2005). Some positive consequences reflect improvements in meeting these functions. For instance, we have learned that a positive self-esteem comes in part from a belief in the self and one's abilities rather than merely being complimented by others. In single-parent homes, children may be given more opportunity to discover their own abilities and gain independence that fosters self-esteem. If divorce leads to fighting between the parents and the child is included in these arguments, the self-esteem may suffer.

The impact of divorce on children depends on a number of factors. The degree of conflict prior to the divorce plays a role. If the divorce means a reduction in tensions, the child may feel relief. If the parents have kept their conflicts hidden, the announcement of a divorce can come as a shock and be met with enormous resentment. Another factor that has an great impact on the child concerns financial hardships they may suffer, especially if financial support is inadequate. Another difficult situation for children of divorce is the position they are put into if the parents continue to argue and fight-especially if they bring the children into those arguments.

Short-term consequences: In roughly the first year following divorce, children may exhibit some of these short-term effects:

1. **Grief over losses suffered**. The child will grieve the loss of the parent they no longer see as frequently. The child may also grieve about other family members that are no longer available. Grief sometimes comes in the form of sadness, but it can also be experienced as anger or withdrawal. Preschool-aged boys may act out aggressively while the same aged girls

may become more quiet and withdrawn. Older children may feel depressed.

2. **Reduced Standard of Living**. Very often, divorce means a change in the amount of money coming into the household. Children experience in new constraints on spending or entertainment. School-aged children, especially, may notice that they can no longer have toys, clothing or other items to which they've grown accustomed. Or it may mean that there is less eating out or being able to afford satellite television, and so on. The custodial parent may experience stress at not being able to rely on child support payments or having the same level of income as before. This can affect decisions regarding healthcare, vacations, rents, mortgages and other expenditures. And the stress can result in less happiness and relaxation in the home. The parent who has to take on more work may also be less available to the children.

3. **Adjusting to Transitions**. Children may also have to adjust to other changes accompanying a divorce. The divorce might mean moving to a new home and changing schools or friends. It might mean leaving a neighborhood that has meant a lot to them as well.

Long-Term consequences: Here are some effects are found after the first year.

1. **Economic/Occupational Status**. One of the most commonly cited long-term effects of divorce is that children of divorce may have lower levels of education or occupational status. This may be a consequence of lower income and resources for funding education rather than to divorce per se. In those households where economic hardship does not occur, there may be no impact on economic status (Drexler, 2005).

2. **Improved Relationships with the Custodial Parent** (usually the mother): In the United States and Canada, children reside with the mother in 88 percent of single-parent households (Berk, 2007). Children from single-parent families

talk to their mothers more often than children of two-parent families (McLanahan and Sandefur, 1994). Most children of divorce lead happy, well-adjusted lives and develop stronger, positive relationships with their custodial parent (Seccombe and Warner, 2004). In a study of college-age respondents, Arditti (1999) found that increasing closeness and a movement toward more democratic parenting styles was experienced. Others have also found that relationships between mothers and children become closer and stronger (Guttman, 1993) and suggest that greater equality and less rigid parenting is beneficial after divorce (Steward, Copeland, Chester, Malley, and Barenbaum, 1997).

3. **Greater emotional independence in sons**. Drexler (2005) notes that sons who are raised by mothers only develop an emotional sensitivity to others that is beneficial in relationships.

4. **Feeling more anxious in their own love relationships.** Children of divorce may feel more anxious about their own relationships as adults. This may reflect a fear of divorce if things go wrong, or it may be a result of setting higher expectations for their own relationships.

5. **Adjustment of the custodial parent**. Furstenberg and Cherlin (1991) believe that the primary factor influencing the way that children adjust to divorce is the way the custodial parent adjusts to the divorce. If that parent is adjusting well, the children will benefit. This may explain a good deal of the variation we find in children of divorce. Adults going though divorce should consider good self-care as beneficial to the children-not as self-indulgent.

Here are some tips for taking care of the self during divorce:

1. Take care of your own mental health. Don't be a martyr. Do what is necessary to heal.
2. Allow children to grieve and express their feelings without becoming defensive. Give the child the freedom to express

feelings and be supportive and neutral as they voice their emotions over the loss.

3. Try to have an amicable relationship with the ex-spouse and keep the children's best interests in mind.
4. Do not put-down or badmouth the ex-spouse. This puts the child in a very uncomfortable position. You don't have to hide the truth from them either, but they will uncover the truth on their own. Be neutral. Children want to love their parents, regardless of the circumstances.
5. Focus on establishing a comfortable, consistent healthy environment for the children as they adjust.

Repartnering

Repartnering refers to forming new, intimate relationships after divorce. This includes dating, cohabitation and remarriage.

Parental considerations about dating: Dating as a single parent can pose certain challenges. Time and money are considerations. A single mother may not have time for dating and may not have the money needed for child-care while she is out. Children can also resent a parent taking time away to date. Parents may struggle with whether or not to introduce a date to the children or to demonstrate affection in front of the children. When a dating relationship becomes serious, a boyfriend or girlfriend might expect the parent to prove their concern for them above the children. This puts a parent in a very uncomfortable situation. Sometimes, this vying for attention does not occur until the couple begins to consider sharing a long-term relationship.

Parental considerations about cohabitation: Having time, money and resources to date can be difficult. And having privacy for a dating relationship can also be problematic. Divorced parents may cohabit as a result. Cohabitation involves living together in a sexually intimate relationship without being married. This can be

difficult for children to adjust to because cohabiting relationships in the United States tend to be short-lived. About 50 percent last less than 2 years (Brown, 2000). The child who starts a relationship with the parent's live-in partner may have to sever this relationship later. And even in long-term cohabiting relationships, once it's over, continued contact with the child is rare.

Is remarriage more difficult than divorce? The remarriage of a parent may be a more difficult adjustment for a child than the divorce of a parent (Seccombe & Warner, 2004). Parents and children typically have different ideas of how the stepparent should act. Parents and stepparents are more likely to see the stepparent's role as that of parent. A more democratic style of parenting may become more authoritarian after a parent remarries. And biological parents are more likely to continue to be involved with their children jointly when neither parent has remarried. They are least likely to jointly be involved if the father has remarried and the mother has not.

Characteristics of Stepfamilies

About 60 percent of divorced parents remarry within a few years (Berk, 2007). Largely due to high rates of divorce and remarriage, we have seen the number of stepfamilies in America grow considerably in the last 20 years although rates of remarriage are declining (Seccombe & Warner, 2004). Stepfamilies are not new. In the 1700-1800s there were many stepfamilies, but they were created because someone died and remarried. Most stepfamilies today are a result of divorce and remarriage. And such origins lead to new considerations. Stepfamilies are different from intact families and more complex in a number of ways that can pose unique challenges to those who seek to form successful stepfamily relationships (Visher & Visher, 1985). Stepfamilies are also known as blended

families and stepchildren as "bonus children" by social scientists interested in emphasizing the positive qualities of these families.

1. Stepfamilies have a biological parent outside the stepfamily and a same sex adult in the family as natural parent. This can lead to animosity on part of a rejecting child. This can also lead to confusion on part of stepparent as to what their role is within the family.
2. Child may be a part of two households, each with different rules.
3. Members may not be as sure that others care and may require more demonstrations of affection for reassurance. For example, stepparents expect more gratitude and acknowledgment from the stepchild than they would with a biological child. Stepchildren experience more uncertainty/ insecurity in their relationship with the parent and fear the parents will see them as sources of tension. And stepparents may feel guilty for a lack of feelings they may initially have toward their partner's children. Children who are required to respond to the parent's new mate as though they were the child's "real" parent often react with hostility, rebellion, or withdrawal. Especially if there has not been time for the relationship to develop.
4. Stepfamilies are born of loss. Members may have lost a home, a neighborhood, family members or at least their dream of how they thought life would be. These losses must be acknowledged and mourned. Remarriage quickly after a divorce makes expressing grief more difficult. Family members are looking for signs that all is well at the same time that members are experiencing grief over losses.
5. Stepfamilies are structurally more complex. There are lost of triangles and lots of ways to divide and conquer the new couple.
6. Sexual attractions are more common in stepfamilies. Members have not grown up together and sexual attractions need to be

understood, and controlled. Also a new couple may need to tone down sexual displays when around the children (can bring on jealousy, etc.) until there is greater acceptance of the new partner.

Sociologist Andrew Cherlin suggests that one reason people remarry is because divorce is so socially awkward. There are no clear guidelines for family/friends, how to treat divorcees, etc. As a result, people remarry to avoid this "displacement." The problem is that remarriage is similarly ill-defined. This is reflected in the lack of language to support the institution of remarriage. What does one call their stepparent? Who is included when thinking of "the family"? For couples with joint custody, where is "home"? And there are few guidelines about how ex-spouses and new spouses or other kin should interact. This is especially an issue when children are involved

In light of this incompleteness, here are some tips for those in stepfamilies. Most of these tips are focused on the stepparent. These come from an article entitled "The Ten Commandments of Step parenting" by Turnbull and Turnbull.

1. Provide neutral territory. If there is a way to do so, relocate the new family in a new, more neutral home. Houses have histories and there are many memories attached to family homes. This territoriality can cause resentments.
2. Don't try to fit a preconceived role. Stepparents need to realize that they cannot just walk into a situation and expect to fill a role. They need to stay in tuned with what works in this new family rather than being dogmatic about their new role.
3. Set limits and enforce them. Don't allow children to take advantage of the parent's guilt or adjustment by trying to gain special privileges as a result of the change. Limits provide security, especially if they are reasonable limits.
4. Allow an outlet for feelings by the children for their natural parent. This tip is for the natural parent. Avoid the temptation

to "encourage" the child to go against your ex-spouse. Instead, remain neutral when comments are made.

5. Expect ambivalence, not instant love. Stepparents need to realize that their acceptance has to be earned, and sometimes it is long in coming. The relationship has to be given time to grow. Trust has to be established. One day they may be loved, the next, hated. Adjustment takes time.

Developmental Stages of Step-famililes

Stepfamilies go through periods of adjustments and developmental stages that take about 7 years for completion (Papernow, 1993). The early stages of stepfamily adjustment include periods of fantasy in which members may hope for immediate acceptance. This is followed by the immersion stage in which children have to adjust to their parent's date being transformed into a new stepfather or stepmother. This acceptance can be accompanied by a sense of betrayal toward the natural parent on the part of the children. The awareness stage involves members beginning to become aware of how they feel in the family and taking steps to map our their territory. Children may begin to feel as if they've been set aside for other family members and the couple may begin to focus their attention toward one another. Biological parents may feel resentful.

The middle stages include mobilization, in which family members begin to recognize their differences. Stepparents may be less interested in pleasing family members and more interested in taking a stand and being respected as family members. Children may start to voice their frustrations at being pulled in different directions by biological and stepparents. The next step is that of taking action. Now step-couples and stepparents begin to reorganize the family based on more realistic expectations and understandings of how members feel.

The later stages include contact between stepfamily members

that is more intimate and genuine. A clearer role for the stepparent emerges. Finally, the stepfamily seems to have more security and stability than ever before.

Conclusions

Middle childhood is a complex period of the life span. New understandings and social situations bring variety to children's lives as they form new strategies for the world ahead. We next turn our attention to adolescents.

64. Learning and Intelligence

Schools and Testing

The Controversy over Testing In Schools

Children's academic performance is often measured with the use of standardized tests. **Achievement tests** are used to measure what a child has already learned. Achievement tests are often used as measures of teaching effectiveness within a school setting and as a method to make schools that receive tax dollars (such as public schools, charter schools, and private schools that receive vouchers) accountable to the government for their performance. In 2001, President George W. Bush signed into effect the No Child Left Behind Act mandating that schools administer achievement tests to students and publish those results so that parents have an idea of their children's performance and the government has information

on the gaps in educational achievement between children from various social class, racial, and ethnic groups. Schools that show significant gaps in these levels of performance are to work toward narrowing these gaps. Educators have criticized the policy for focusing too much on testing as the only indication of performance levels.

Aptitude tests are designed to measure a student's ability to learn or to determine if a person has potential in a particular program. These are often used at the beginning of a course of study or as part of college entrance requirements. The Scholastic Aptitude Test (SAT) and Preliminary Scholastic Aptitude Test (PSAT) are perhaps the most familiar aptitude tests to students in grades 6 and above. Learning test taking skills and preparing for SATs has become part of the training that some students in these grades receive as part of their pre-college preparation. Other aptitude tests include the MCAT (Medical College Admission Test), the LSAT (Law School Admission Test), and the GRE (Graduate Record Examination). Intelligence tests are also a form of aptitude test which designed to measure a person's ability to learn.

Theories of Intelligence

Intelligence tests and psychological definitions of intelligence have been heavily criticized since the 1970s for being biased in favor of Anglo-American, middle-class respondents and for being inadequate tools for measuring non-academic types of intelligence or talent. Intelligence changes with experience and intelligence quotients or scores do not reflect that ability to change. What is considered smart varies culturally as well and most intelligence tests do not take this variation into account. For example, in the west, being smart is associated with being quick. A person who answers a question the fastest is seen as the smartest. But in some cultures, being smart is associated with considering an idea

thoroughly before giving an answer. A well-thought out, contemplative answer is the best answer.

Exercises

What do you think? As an adult, what kind of intellectual skills do you consider to be most important for your success? Consequently, how would you define intelligence?

Multiple Intelligences

Gardner (1983, 1998, 1999) suggests that there are not one, but nine domains of intelligence. The first three are skills that are measured by IQ tests:

- **Logical-mathematical:** the ability to solve mathematical problems; problems of logic, numerical patterns
- **Linguistic**: vocabulary, reading comprehension, function of language
- **Spatial**: visual accuracy, ability to read maps, understand space and distance

The next six represent skills that are not measured in standard IQ tests but are talents or abilities that can also be important for success in a variety of fields: These are:

- **Musical**: ability to understand patterns in music, hear pitches, recognize rhythms and melodies
- **Bodily-kinesthetic**: motor coordination, grace of movement, agility, strength

- **Naturalistic**: knowledge of plants, animals, minerals, climate, weather
- **Interpersonal**: understand the emotion, mood, motivation of others; able to communicate effectively
- **Intrapersonal**: understanding of the self, mood, motivation, temperament, realistic knowledge of strengths, weaknesses
- **Existential**: concern about and understanding of life's larger questions, meaning of life, or spiritual matters

Gardner contends that these are also forms of intelligence. A high IQ does not always ensure success in life or necessarily indicate that a person has common sense, good interpersonal skills or other abilities important for success.

Triarchic Theory of Intelligence

Another alternative view of intelligence is presented by Sternberg (1997; 1999). Sternberg offers three types of intelligences. Sternberg provided background information about his view of intelligence in a conference I attended several years ago. He described his frustration as a committee member charged with selecting graduate students for a program in psychology. He was concerned that there was too much emphasis placed on aptitude test scores and believed that there were other, less easily measured, qualities necessary for success in a graduate program and in the world of work. Aptitude test scores indicate the first type of intelligence-academic.

- **Academic** (componential): includes the ability to solve problems of logic, verbal comprehension, vocabulary, and spatial abilities.

Sternberg noted that students who have high academic abilities may still not have what is required to be a successful graduate student

or a competent professional. To do well as a graduate student, he noted, the person needs to be creative. The second type of intelligence emphasizes this quality.

- **Creative** (experiential): the ability to apply newly found skills to novel situations.

A potential graduate student might be strong academically and have creative ideas, but still be lacking in the social skills required to work effectively with others or to practice good judgment in a variety of situations. This common sense is the third type of intelligence.

- **Practical** (contextual): the ability to use common sense and to know what is called for in a situation.

This type of intelligence helps a person know when problems need to be solved. Practical intelligence can help a person know how to act and what to wear for job interviews, when to get out of problematic relationships, how to get along with others at work, and when to make changes to reduce stress.

Let's apply these theories of intelligence to the world of children. To what extent are these types of intelligences cultivated at home and in the schools?

The World of School

Remember the ecological systems model that we explored in Lesson 2? This model helps us understand an individual by examining the contexts in which the person lives and the direct and indirect influences on that person's life. School becomes a very important component of children's lives during middle childhood and one way to understand children is to look at the world of school. We have discussed educational policies that impact the curriculum in schools above. Now let's focus on the school experience from the

standpoint of the student, the teacher and parent relationship, and the cultural messages or hidden curriculum taught in school in the United States.

Parental Involvement in School: Parents vary in their level of involvement with their children's schools. Teachers often complain that they have difficulty getting parents to participate in their child's education and devise a variety of techniques to keep parents in touch with daily and overall progress. For example, parents may be required to sign a behavior chart each evening to be returned to school or may be given information about the school's events through websites and newsletters. There are other factors that need to be considered when looking at parental involvement. To explore these, first ask yourself if all parents who enter the school with concerns about their child be received in the same way? If not, what would make a teacher or principal more likely to consider the parent's concerns? What would make this less likely?

Lareau and Horvat (2004) found that teachers seek a particular type of involvement from particular types of parents. While teachers thought they were open and neutral in their responses to parental involvement, in reality teachers were most receptive to support, praise and agreement coming from parents who were most similar in race and social class with the teachers. Parents who criticized the school or its policies were less likely to be given voice. Parents who have higher levels of income, occupational status, and other qualities favored in society have family capital. This is a form of power that can be used to improve a child's education. Parents who do not have these qualities may find it more difficult to be effectively involved. Lareau and Horvat (2004) offer three cases of African-American parents who were each concerned about discrimination in the schools. Despite evidence that such discrimination existed, their children's white, middle-class teachers were reluctant to address the situation directly. Note the variation in approaches and outcomes for these three families:

> **The Masons:** This working class, African-American couple, a minister and a beautician, voiced direct complaints about

discrimination in the schools. Their claims were thought to undermine the authority of the school and as a result, their daughter was kept in a lower reading class. However, her grade was boosted to "avoid a scene" and the parents were not told of this grade change.

The Irvings: This middle class, African-American couple was concerned that the school was discriminating against black students. They fought against it without using direct confrontation by staying actively involved in their daughter's schooling and making frequent visits to the school so make sure that discrimination could not occur. They also talked with other African-American teachers and parents about their concerns.

Ms. Caldron: This poor, single-parent was concerned about discrimination in the school. She was a recovering drug addict receiving welfare. She did not discuss her concerns with other parents because she did not know the other parents and did not monitor her child's progress or get involved with the school. She felt that her concerns would not receive attention. She requested spelling lists from the teacher on several occasions but did not receive them. The teacher complained that Ms. Caldron did not sign forms that were sent home for her signature.

Working within the system without direct confrontation seemed to yield better results for the Irvings, although the issue of discrimination in the school was not completely addressed. Ms. Caldron was the least involved and felt powerless in the school setting. Her lack of family capital and lack of knowledge and confidence keep her from addressing her concerns with the teachers. What do you think would happen if she directly addressed the teachers and complained about discrimination? Chances are, she would be dismissed as undermining the authority of the school, just as the Masons, and might be thought to lack credibility because of her poverty and drug addiction. The authors of this study suggest that teachers closely examine their biases against parents. Schools

may also need to examine their ability to dialogue with parents about school policies in more open ways. What happens when parents have concerns over school policy or view student problems as arising from flaws in the educational system? How are parents who are critical of the school treated? And are their children treated fairly even when the school is being criticized? Certainly, any efforts to improve effective parental involvement should address these concerns.

Student Perspectives

Imagine being a 3rd-grader for one day in public school. What would the daily routine involve? To what extent would the institution dictate the activities of the day and how much of the day would you spend on those activities? Would always be 'on task'? What would you say if someone asked you how your day went? Or "What happened in school today?" Chances are, you would be more inclined to talk about whom you sat at lunch with or who brought a puppy to class than to describe how fractions are added.

Ethnographer and Professor of Education Peter McLaren (1999) describes the student's typical day as filled with constrictive and unnecessary ritual that has a damaging effect on the desire to learn. Students move between various states as they negotiate the demands of the school system and their own personal interests. The majority of the day (298 minutes) takes place in the **student state**. This state is one in which the student focuses on a task or tries to stay focused on a task, is passive, compliant, and often frustrated. Long pauses before getting out the next book or finding materials sometimes indicate that frustration. The **street corner state** is one in which the child is playful, energetic, excited, and expresses personal opinions, feelings, and beliefs. About 66 minutes a day take place in this state. Children try to maximize

this by going slowly to assemblies or when getting a hall pass-always eager to say 'hello' to a friend or to wave if one of their classmates is in another room. This is the state in which friends talk and play. In fact, teachers sometimes reward students with opportunities to move freely or to talk or to be themselves. But when students initiate the street corner state on their own, they risk losing recess time, getting extra homework, or being ridiculed in front of their peers. The **home state** occurs when parents or siblings visit the school. Children in this state may enjoy special privileges such as going home early or being exempt from certain school rules in the mother's presence. Or it can be difficult if the parent is there to discuss trouble at school with a staff member. The sanctity state is a time in which the child is contemplative, quiet, or prayerful and is a very brief part of the day.

Since students seem to have so much enthusiasm and energy in street corner states, what would happen if the student and street corner states could be combined? Would it be possible? Many educators feel concern about the level of stress children experience in school. Some stress can be attributed to problems in friendship. And some can be a result of the emphasis on testing and grades, as reflected in a Newsweek article entitled "The New First Grade: Are Kids Getting Pushed Too Fast Too Soon?" (Tyre, 2006). This article reports concerns of a principal who worries that students begin to burn out as early as 3rd grade. In the book, The Homework Myth: Why Our Kids Get Too Much of a Bad Thing, Kohn (2006) argues that neither research nor experience support claims that homework reinforces learning and builds responsibility. Why do schools assign homework so frequently? A look at cultural influences on education my provide some answers.

Cultural Influences

Another way to examine the world of school is to look at the cultural values, concepts, behaviors and roles that are part of the school experience but are not part of the formal curriculum. These are part of the **hidden curriculum** but are nevertheless very powerful messages. The hidden curriculum includes ideas of patriotism, gender roles, the ranking of occupations and classes, competition, and other values. Teachers, counselors, and other students specify and make known what is considered appropriate for girls and boys. The gender curriculum continues into high school, college, and professional school. Students learn a ranking system of occupations and social classes as well. Students in gifted programs or those moving toward college preparation classes may be viewed as superior to those who are receiving tutoring.

Gracy (2004) suggests that cultural training occurs early. Kindergarten is an "academic boot camp" in which students are prepared for their future student role-that of complying with an adult imposed structure and routine designed to produce docile, obedient, children who do not question meaningless tasks that will become so much of their future lives as students. A typical day is filled with structure, ritual, and routine that allows for little creativity or direct, hands-on contact. "Kindergarten, therefore, can be seen as preparing children not only for participation in the bureaucratic organization of large modern school systems, but also for the large-scale occupational bureaucracies of modern society." (Gracy, 2004, p. 148)

What do you think? Let's examine a kindergarten class schedule taken from a website found by going to Google and typing in "kindergarten schedule". You can find more of these on your own. Most look similar to this one:

7:55 to 8:20 Math tubs (manipulatives) and small group math lessons

8:20 to 8:35 Class meeting/restroom and drinks

8:35 to 8:55 Math board/calendar
8:55 to 9:10 Whole class math lesson
9:10 to 9:20 Daily news chart
9:20 to 9:50 Shared reading (big books/poem and song charts)
9:50 to 10:15 Language Arts Centers
10:15 to 10:30 Morning recess
10:30 to 10:50 Alphabet/phonics lesson and paper
10:50 to 11:10 Reading Workshop (more centers)
11:10 to 11:20 Picture and word chart
11:20 to 11:40 Writing workshop (journals)
11:40 to 12:20 Lunch and recess
12:20 to 12:50 Rainbow Reading Lab (sequenced file folder activities) or computer lab or internet computers. Children are divided into two groups and do one of these activities each day, title 1 teacher is in my room at this time.
12:50 to 1:20 Theme related activity or art class one day per week
1:20 to 1:35 Afternoon recess (or still in art one day per week)
1:35 to 2:10 Nap/rest time
2:10 to 2:50 Special classes (music, counseling, pe, or library)
2:50 to 3:05 Show and Tell and get ready to go home
(Source: Classroom_Schedules).

To what extent do you think that students are being prepared for their future student role? What are the pros and cons of such preparation? Look at the curriculum for kindergarten and the first few grades in your own school district. Emphasizing math and reading in preschool and kindergarten classes is becoming more common in some school districts. It is not without controversy, however. Some suggest that emphasis is warranted in order to help students learn math and reading skills that will be needed throughout school and in the world of work. This will also help school districts improve their accountability through test performance. Others argue that learning is becoming too structured to be enjoyable or effective and that students are being taught only to focus on performance and test

taking. Students learn student incivility or lack of sincere concern for politeness and consideration of others is taught in kindergarten through 12th grades through the "what is on the test" mentality modeled by teachers. Students are taught to accept routinized, meaningless information in order to perform well on tests. And they are experiencing the stress felt by teachers and school districts focused on test scores and taught that their worth comes from their test scores. Genuine interest, an appreciation of the process of learning, and valuing others are important components of success in the workplace that are not part of the hidden curriculum in today's schools.

65. Learning Approaches

Learning Objectives

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

- Describe the behaviorist perspective on personality
- Describe the cognitive perspective on personality
- Describe the social cognitive perspective on personality

In contrast to the psychodynamic approaches of Freud and the neo-Freudians, which relate personality to inner (and hidden) processes, the learning approaches focus only on observable behavior. This illustrates one significant advantage of the learning approaches over psychodynamics: Because learning approaches involve observable, measurable phenomena, they can be scientifically tested.

THE BEHAVIORAL PERSPECTIVE

Behaviorists do not believe in biological determinism: They do not see personality traits as inborn. Instead, they view personality as significantly shaped by the reinforcements and consequences outside of the organism. In other words, people behave in a consistent manner based on prior learning. B. F. Skinner, a strict behaviorist, believed that environment was solely responsible for all behavior, including the enduring, consistent behavior patterns studied by personality theorists.

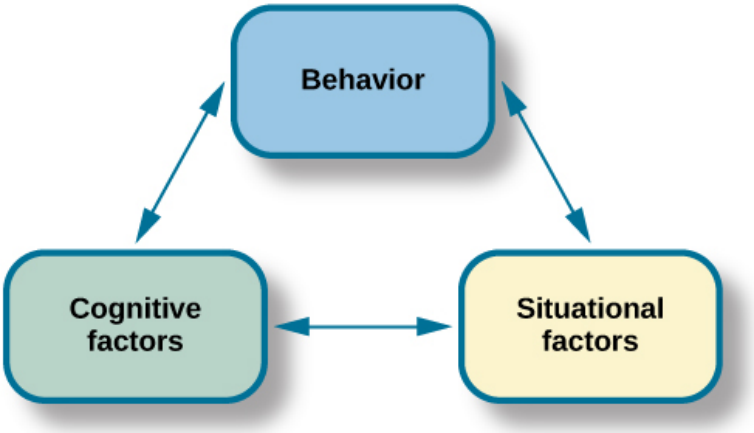
As you may recall from your study on the psychology of learning, Skinner proposed that we demonstrate consistent behavior patterns because we have developed certain response tendencies (Skinner, 1953). In other words, we *learn* to behave in particular ways. We increase the behaviors that lead to positive consequences, and we decrease the behaviors that lead to negative consequences. Skinner disagreed with Freud's idea that personality is fixed in childhood. He argued that personality develops over our entire life, not only in the first few years. Our responses can change as we come across new situations; therefore, we can expect more variability over time in personality than Freud would anticipate. For example, consider a young woman, Greta, a risk taker. She drives fast and participates in dangerous sports such as hang gliding and kiteboarding. But after she gets married and has children, the system of reinforcements and punishments in her environment changes. Speeding and extreme sports are no longer reinforced, so she no longer engages in those behaviors. In fact, Greta now describes herself as a cautious person.

THE SOCIAL-COGNITIVE PERSPECTIVE

Albert Bandura agreed with Skinner that personality develops through learning. He disagreed, however, with Skinner's strict behaviorist approach to personality development, because he felt that thinking and reasoning are important components of learning. He presented a social-cognitive theory of personality that emphasizes both learning and cognition as sources of individual differences in personality. In social-cognitive theory, the concepts of reciprocal determinism, observational learning, and self-efficacy all play a part in personality development.

Reciprocal Determinism

In contrast to Skinner's idea that the environment alone determines behavior, Bandura (1990) proposed the concept of reciprocal determinism, in which cognitive processes, behavior, and context all interact, each factor influencing and being influenced by the others simultaneously ([link]). *Cognitive processes* refer to all characteristics previously learned, including beliefs, expectations, and personality characteristics. *Behavior* refers to anything that we do that may be rewarded or punished. Finally, the *context* in which the behavior occurs refers to the environment or situation, which includes rewarding/punishing stimuli.



Bandura proposed the idea of reciprocal determinism: Our behavior, cognitive processes, and situational context all influence each other.

Consider, for example, that you're at a festival and one of the attractions is bungee jumping from a bridge. Do you do it? In this example, the behavior is bungee jumping. Cognitive factors that might influence this behavior include your beliefs and values, and your past experiences with similar behaviors. Finally, context refers

to the reward structure for the behavior. According to reciprocal determinism, all of these factors are in play.

Observational Learning

Bandura's key contribution to learning theory was the idea that much learning is vicarious. We learn by observing someone else's behavior and its consequences, which Bandura called observational learning. He felt that this type of learning also plays a part in the development of our personality. Just as we learn individual behaviors, we learn new behavior patterns when we see them performed by other people or models. Drawing on the behaviorists' ideas about reinforcement, Bandura suggested that whether we choose to imitate a model's behavior depends on whether we see the model reinforced or punished. Through observational learning, we come to learn what behaviors are acceptable and rewarded in our culture, and we also learn to inhibit deviant or socially unacceptable behaviors by seeing what behaviors are punished.

We can see the principles of reciprocal determinism at work in observational learning. For example, personal factors determine which behaviors in the environment a person chooses to imitate, and those environmental events in turn are processed cognitively according to other personal factors.

Self-Efficacy

Bandura (1977, 1995) has studied a number of cognitive and personal factors that affect learning and personality development, and most recently has focused on the concept of self-efficacy. Self-efficacy is our level of confidence in our own abilities, developed through our social experiences. Self-efficacy affects how we approach

challenges and reach goals. In observational learning, self-efficacy is a cognitive factor that affects which behaviors we choose to imitate as well as our success in performing those behaviors.

People who have high self-efficacy believe that their goals are within reach, have a positive view of challenges seeing them as tasks to be mastered, develop a deep interest in and strong commitment to the activities in which they are involved, and quickly recover from setbacks. Conversely, people with low self-efficacy avoid challenging tasks because they doubt their ability to be successful, tend to focus on failure and negative outcomes, and lose confidence in their abilities if they experience setbacks. Feelings of self-efficacy can be specific to certain situations. For instance, a student might feel confident in her ability in English class but much less so in math class.

JULIAN ROTTER AND LOCUS OF CONTROL

Julian Rotter (1966) proposed the concept of locus of control, another cognitive factor that affects learning and personality development. Distinct from self-efficacy, which involves our belief in our own abilities, locus of control refers to our beliefs about the power we have over our lives. In Rotter's view, people possess either an internal or an external locus of control ([link]). Those of us with an internal locus of control ("internals") tend to believe that most of our outcomes are the direct result of our efforts. Those of us with an external locus of control ("externals") tend to believe that our outcomes are outside of our control. Externals see their lives as being controlled by other people, luck, or chance. For example, say you didn't spend much time studying for your psychology test and went out to dinner with friends instead. When you receive your test score, you see that you earned a D. If you possess an internal locus of control, you would most likely admit that you failed because

you didn't spend enough time studying and decide to study more for the next test. On the other hand, if you possess an external locus of control, you might conclude that the test was too hard and not bother studying for the next test, because you figure you will fail it anyway. Researchers have found that people with an internal locus of control perform better academically, achieve more in their careers, are more independent, are healthier, are better able to cope, and are less depressed than people who have an external locus of control (Benassi, Sweeney, & Durfour, 1988; Lefcourt, 1982; Maltby, Day, & Macaskill, 2007; Whyte, 1977, 1978, 1980).

Locus of control occurs on a continuum from internal to external.

Link to Learning

Take the Locus of Control questionnaire. Scores range from 0 to 13. A low score on this questionnaire indicates an internal locus of control, and a high score indicates an external locus of control.

WALTER MISCHEL AND THE PERSON-SITUATION DEBATE

Walter Mischel was a student of Julian Rotter and taught for years

at Stanford, where he was a colleague of Albert Bandura. Mischel surveyed several decades of empirical psychological literature regarding trait prediction of behavior, and his conclusion shook the foundations of personality psychology. Mischel found that the data did not support the central principle of the field—that a person's personality traits are consistent across situations. His report triggered a decades-long period of self-examination, known as the person-situation debate, among personality psychologists.

Mischel suggested that perhaps we were looking for consistency in the wrong places. He found that although behavior was inconsistent across different situations, it was much more consistent within situations—so that a person's behavior in one situation would likely be repeated in a similar one. And as you will see next regarding his famous "marshmallow test," Mischel also found that behavior is consistent in equivalent situations across time.

One of Mischel's most notable contributions to personality psychology was his ideas on self-regulation. According to Lecci & Magnavita (2013), "Self-regulation is the process of identifying a goal or set of goals and, in pursuing these goals, using both internal (e.g., thoughts and affect) and external (e.g., responses of anything or anyone in the environment) feedback to maximize goal attainment" (p. 6.3). Self-regulation is also known as will power. When we talk about will power, we tend to think of it as the ability to delay gratification. For example, Bettina's teenage daughter made strawberry cupcakes, and they looked delicious. However, Bettina forfeited the pleasure of eating one, because she is training for a 5K race and wants to be fit and do well in the race. Would you be able to resist getting a small reward now in order to get a larger reward later? This is the question Mischel investigated in his now-classic marshmallow test.

Mischel designed a study to assess self-regulation in young children. In the marshmallow study, Mischel and his colleagues placed a preschool child in a room with one marshmallow on the table. The child was told that he could either eat the marshmallow

now, or wait until the researcher returned to the room and then he could have two marshmallows (Mischel, Ebbesen & Raskoff, 1972). This was repeated with hundreds of preschoolers. What Mischel and his team found was that young children differ in their degree of self-control. Mischel and his colleagues continued to follow this group of preschoolers through high school, and what do you think they discovered? The children who had more self-control in preschool (the ones who waited for the bigger reward) were more successful in high school. They had higher SAT scores, had positive peer relationships, and were less likely to have substance abuse issues; as adults, they also had more stable marriages (Mischel, Shoda, & Rodriguez, 1989; Mischel et al., 2010). On the other hand, those children who had poor self-control in preschool (the ones who grabbed the one marshmallow) were not as successful in high school, and they were found to have academic and behavioral problems.

Link to Learning

To learn more about the marshmallow test and view the test given to children in Columbia, follow the link below to Joachim de Posada's TEDTalk video.

Today, the debate is mostly resolved, and most psychologists consider both the situation and personal factors in understanding behavior. For Mischel (1993), people are situation processors. The children in the marshmallow test each processed, or interpreted, the rewards structure of that situation in their own way. Mischel's approach to personality stresses the importance of both the situation and the way the person perceives the situation. Instead of behavior being determined by the situation, people use cognitive

processes to interpret the situation and then behave in accordance with that interpretation.

Summary

Behavioral theorists view personality as significantly shaped and impacted by the reinforcements and consequences outside of the organism. People behave in a consistent manner based on prior learning. B. F. Skinner, a prominent behaviorist, said that we demonstrate consistent behavior patterns, because we have developed certain response tendencies. Mischel focused on how personal goals play a role in the self-regulation process. Albert Bandura said that one's environment can determine behavior, but at the same time, people can influence the environment with both their thoughts and behaviors, which is known as reciprocal determinism. Bandura also emphasized how we learn from watching others. He felt that this type of learning also plays a part in the development of our personality. Bandura discussed the concept of self-efficacy, which is our level of confidence in our own abilities. Finally, Rotter proposed the concept of locus of control, which refers to our beliefs about the power we have over our lives. He said that people fall along a continuum between a purely internal and a purely external locus of control.

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Self Check Questions

Critical Thinking Questions

1. Compare the personalities of someone who has high self-efficacy to someone who has low self-efficacy.

2. Compare and contrast Skinner's perspective on personality development to Freud's.

Personal Application Questions

3. Do you have an internal or an external locus of control? Provide examples to support your answer.

Answers

1. People who have high self-efficacy believe that their efforts matter. They perceive their goals as being within reach; have a positive view of challenges, seeing them as tasks to be mastered; develop a deep interest in and strong commitment to the activities in which they are involved; and quickly recover from setbacks. Conversely, people with

low self-efficacy believe their efforts have little or no effect, and that outcomes are beyond their control. They avoid challenging tasks because they doubt their abilities to be successful; tend to focus on failure and negative outcomes; and lose confidence in their abilities if they experience setbacks.

2. Skinner disagreed with Freud's idea that childhood plays an important role in shaping our personality. He argued that personality develops over our entire life, rather than in the first few years of life as Freud suggested. Skinner said that our responses can change as we come across new situations; therefore, we can see more variability over time in personality.

Glossary

locus of control beliefs about the power we have over our lives; an external locus of control is the belief that our outcomes are outside of our control; an internal locus of control is the belief that we control our own outcomes

reciprocal determinism belief that one's environment can determine behavior, but at the same time, people can influence the environment with both their thoughts and behaviors

self-efficacy someone's level of confidence in their own abilities

social-cognitive theory Bandura's theory of personality that emphasizes both cognition and learning as sources of individual differences in personality

PART XIII

MODULE 11: ADOLESCENCE

66. Introduction to Adolescense

Adolescence is a period that begins with puberty and ends with the transition to adulthood (approximately ages 10–20). Physical changes associated with puberty are triggered by hormones. Cognitive changes include improvements in complex and abstract thought, as well as development that happens at different rates in distinct parts of the brain and increases adolescents' propensity for risky behavior because increases in sensation-seeking and reward motivation precede increases in cognitive control. Adolescents' relationships with parents go through a period of redefinition in which adolescents become more autonomous, and aspects of parenting, such as distal monitoring and psychological control, become more salient. Peer relationships are important sources of support and companionship during adolescence yet can also promote problem behaviors. Same-sex peer groups evolve into mixed-sex peer groups, and adolescents' romantic relationships tend to emerge from these groups. Identity formation occurs as adolescents explore and commit to different roles and ideological positions. Nationality, gender, ethnicity, socioeconomic status, religious background, sexual orientation, and genetic factors shape how adolescents behave and how others respond to them, and are sources of diversity in adolescence.

Adolescence Defined

Adolescence is a developmental stage that has been defined as starting with puberty and ending with the transition to adulthood (approximately ages 10–20). Adolescence has evolved historically,

with evidence indicating that this stage is lengthening as individuals start puberty earlier and transition to adulthood later than in the past. Puberty today begins, on average, at age 10–11 years for girls and 11–12 years for boys. This average age of onset has decreased gradually over time since the 19th century by 3–4 months per decade, which has been attributed to a range of factors including better nutrition, obesity, increased father absence, and other environmental factors (Steinberg, 2013[1]). Completion of formal education, financial independence from parents, marriage, and parenthood have all been markers of the end of adolescence and beginning of adulthood, and all of these transitions happen, on average, later now than in the past. In fact, the prolonging of adolescence has prompted the introduction of a new developmental period called *emerging adulthood* that captures these developmental changes out of adolescence and into adulthood, occurring from approximately ages 18 to 29 (Arnett, 2000[2]).

1. Steinberg, L. (2013). Adolescence (10th ed.). New York, NY: McGraw-Hill.
2. Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. American Psychologist, 55, 469–480.

Adolescence is often characterized as a period of transformation, primarily, in terms of physical, cognitive, and social-relational change. [Image: Lorenia]

67. Physical Development

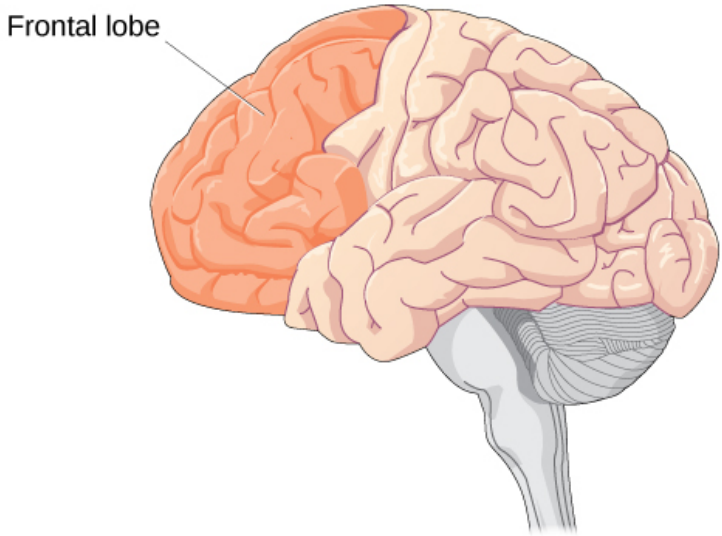
Adolescence begins with puberty. While the sequence of physical changes in puberty is predictable, the onset and pace of puberty vary widely. Several physical changes occur during puberty, such as adrenarche and gonadarche, the maturing of the adrenal glands and sex glands, respectively. Also during this time, primary and secondary sexual characteristics develop and mature. Primary sexual characteristics are organs specifically needed for reproduction, like the uterus and ovaries in females and testes in males. Secondary sexual characteristics are physical signs of sexual maturation that do not directly involve sex organs, such as development of breasts and hips in girls, and development of facial hair and a deepened voice in boys. Girls experience menarche, the beginning of menstrual periods, usually around 12–13 years old, and boys experience spermarche, the first ejaculation, around 13–14 years old.

During puberty, both sexes experience a rapid increase in height (i.e., growth spurt). For girls this begins between 8 and 13 years old, with adult height reached between 10 and 16 years old. Boys begin their growth spurt slightly later, usually between 10 and 16 years old, and reach their adult height between 13 and 17 years old. Both nature (i.e., genes) and nurture (e.g., nutrition, medications, and medical conditions) can influence height.

Because rates of physical development vary so widely among teenagers, puberty can be a source of pride or embarrassment. Early maturing boys tend to be stronger, taller, and more athletic than their later maturing peers. They are usually more popular, confident, and independent, but they are also at a greater risk for substance abuse and early sexual activity (Flannery, Rowe, & Gulley, 1993; Kaltiala-Heino, Rimpela, Rissanen, & Rantanen, 2001). Early maturing girls may be teased or overtly admired, which can cause them to feel self-conscious about their developing bodies. These

girls are at a higher risk for depression, substance abuse, and eating disorders (Ge, Conger, & Elder, 2001; Graber, Lewinsohn, Seeley, & Brooks-Gunn, 1997; Striegel-Moore & Cachelin, 1999). Late blooming boys and girls (i.e., they develop more slowly than their peers) may feel self-conscious about their lack of physical development. Negative feelings are particularly a problem for late maturing boys, who are at a higher risk for depression and conflict with parents (Graber et al., 1997) and more likely to be bullied (Pollack & Shuster, 2000).

The adolescent brain also remains under development. Up until puberty, brain cells continue to bloom in the frontal region. Adolescents engage in increased risk-taking behaviors and emotional outbursts possibly because the frontal lobes of their brains are still developing. Recall that this area is responsible for judgment, impulse control, and planning, and it is still maturing into early adulthood (Casey, Tottenham, Liston, & Durston, 2005).



Brain growth continues into the early 20s. The development of the frontal lobe, in particular, is important during this stage.

Link to Learning

According to neuroscientist Jay Giedd in the Frontline video "Inside the Teenage Brain" (2013), "It's sort of unfair to expect [teens] to have adult levels of organizational skills or decision-making before their brains are finished being built." Watch this segment on "The Wiring of the Adolescent Brain" to find out more about the developing brain during adolescence.

68. Cognitive Development

More complex thinking abilities emerge during adolescence. Some researchers suggest this is due to increases in processing speed and efficiency rather than as the result of an increase in mental capacity—in other words, due to improvements in existing skills rather than development of new ones (Bjorkland, 1987; Case, 1985). During adolescence, teenagers move beyond concrete thinking and become capable of abstract thought. Recall that Piaget refers to this stage as formal operational thought. Teen thinking is also characterized by the ability to consider multiple points of view, imagine hypothetical situations, debate ideas and opinions (e.g., politics, religion, and justice), and form new ideas. In addition, it's not uncommon for adolescents to question authority or challenge established societal norms.

Early in adolescence, changes in the brain's dopaminergic system contribute to increases in adolescents' sensation-seeking and reward motivation. Later in adolescence, the brain's cognitive control centers in the prefrontal cortex develop, increasing adolescents' self-regulation and future orientation. The difference in timing of the development of these different regions of the brain contributes to more risk taking during middle adolescence because adolescents are motivated to seek thrills that sometimes come from risky behavior, such as reckless driving, smoking, or drinking, and have not yet developed the cognitive control to resist impulses or focus equally on the potential risks (Steinberg, 2008[1]). One of the world's leading experts on adolescent development, Laurence Steinberg, likens this to engaging a powerful engine before the

1. Steinberg, L. (2013). Adolescence (10th ed.). New York, NY: McGraw-Hill.

braking system is in place. The result is that adolescents are more prone to risky behaviors than are children or adults.

Cognitive empathy, also known as theory-of-mind (which we discussed earlier with regard to egocentrism), relates to the ability to take the perspective of others and feel concern for others (Shamay-Tsoory, Tomer, & Aharon-Peretz, 2005). Cognitive empathy begins to increase in adolescence and is an important component of social problem solving and conflict avoidance. According to one longitudinal study, levels of cognitive empathy begin rising in girls around 13 years old, and around 15 years old in boys (Van der Graaff et al., 2013). Teens who reported having supportive fathers with whom they could discuss their worries were found to be better able to take the perspective of others (Miklikowska, Duriez, & Soenens, 2011).

Teenage thinking is characterized by the ability to reason logically and solve hypothetical problems such as how to design, plan, and build a structure. (credit: U.S. Army RDECOM)

69. Social Development

Psychosocial Development

Adolescents continue to refine their sense of self as they relate to others. Erikson referred to the task of the adolescent as one of identity versus role confusion. Thus, in Erikson's view, an adolescent's main questions are "Who am I?" and "Who do I want to be?" Some adolescents adopt the values and roles that their parents expect for them. Other teens develop identities that are in opposition to their parents but align with a peer group. This is common as peer relationships become a central focus in adolescents' lives.

As adolescents work to form their identities, they pull away from their parents, and the peer group becomes very important (Shanahan, McHale, Osgood, & Crouter, 2007). Despite spending less time with their parents, most teens report positive feelings toward them (Moore, Guzman, Hair, Lippman, & Garrett, 2004). Warm and healthy parent-child relationships have been associated with positive child outcomes, such as better grades and fewer school behavior problems, in the United States as well as in other countries (Hair et al., 2005).

It appears that most teens don't experience adolescent storm and stress to the degree once famously suggested by G. Stanley Hall, a pioneer in the study of adolescent development. Only small numbers of teens have major conflicts with their parents (Steinberg & Morris, 2001), and most disagreements are minor. For example, in a study of over 1,800 parents of adolescents from various cultural and ethnic groups, Barber (1994) found that conflicts occurred over day-to-day issues such as homework, money, curfews, clothing, chores, and friends. These types of arguments tend to decrease as teens develop (Galambos & Almeida, 1992).

Social Changes

Parents. Although peers take on greater importance during adolescence, family relationships remain important too. One of the key changes during adolescence involves a renegotiation of parent–child relationships. As adolescents strive for more independence and autonomy during this time, different aspects of parenting become more salient. For example, parents' distal supervision and monitoring become more important as adolescents spend more time away from parents and in the presence of peers. Parental monitoring encompasses a wide range of behaviors such as parents' attempts to set rules and know their adolescents' friends, activities, and whereabouts, in addition to adolescents' willingness to disclose information to their parents (Stattin & Kerr, 2000[1]). *Psychological control*, which involves manipulation and intrusion into adolescents' emotional and cognitive world through invalidating adolescents' feelings and pressuring them to think in particular ways (Barber, 1996[2]), is another aspect of parenting that becomes more salient during adolescence and is related to more problematic adolescent adjustment.

Peers

As children become adolescents, they usually begin spending more

1. Stattin, H., & Kerr, M. (2000). Parental monitoring: A reinterpretation. Child Development, 71, 1072–1085.
2. Barber, B. K. (1996). Parental psychological control: Revisiting a neglected construct. Child Development, 67, 3296–3319.

time with their peers and less time with their families, and these peer interactions are increasingly unsupervised by adults. Children's notions of friendship often focus on shared activities, whereas adolescents' notions of friendship increasingly focus on intimate exchanges of thoughts and feelings. During adolescence, peer groups evolve from primarily single-sex to mixed-sex. Adolescents within a peer group tend to be similar to one another in behavior and attitudes, which has been explained as being a function of *homophily* (adolescents who are similar to one another choose to spend time together in a "birds of a feather flock together" way) and influence (adolescents who spend time together shape each other's behavior and attitudes). One of the most widely studied aspects of adolescent peer influence is known as *deviant peer contagion* (Dishion & Tipsord, 2011[3]), which is the process by which peers reinforce problem behavior by laughing or showing other signs of approval that then increase the likelihood of future problem behavior.

Peers can serve both positive and negative functions during adolescence. Negative peer pressure can lead adolescents to make riskier decisions or engage in more problematic behavior than they would alone or in the presence of their family. For example, adolescents are much more likely to drink alcohol, use drugs, and commit crimes when they are with their friends than when they are alone or with their family. However, peers also serve as an important source of social support and companionship during adolescence, and adolescents with positive peer relationships are happier and better adjusted than those who are socially isolated or have conflictual peer relationships.

3. Dishion, T. J., & Tipsord, J. M. (2011). Peer contagion in child and adolescent social and emotional development. Annual Review of Psychology, 62, 189–214.

Crowds refer to different collections of people, like the "theater kids" or the "environmentalists." In a way, they are kind of like clothing brands that label the people associated with that crowd. [Image: Garry Knight]

Crowds are an emerging level of peer relationships in adolescence. In contrast to friendships (which are reciprocal dyadic relationships) and cliques (which refer to groups of individuals who interact frequently), crowds are characterized more by shared reputations or images than actual interactions (Brown & Larson, 2009[4]). These crowds reflect different prototypic identities (such as jocks or brains) and are often linked with adolescents' social status and peers' perceptions of their values or behaviors.

4. Brown, B. B., & Larson, J. (2009). Peer relationships in adolescence. In R. M. Lerner & L. Steinberg (Eds.), Handbook of adolescent psychology (pp. 74–103). New York, NY: Wiley.

Romantic relationships

Adolescence is the developmental period during which romantic relationships typically first emerge. Initially, same-sex peer groups that were common during childhood expand into mixed-sex peer groups that are more characteristic of adolescence. Romantic relationships often form in the context of these mixed-sex peer groups (Connolly, Furman, & Konarski, 2000[5]). Although romantic relationships during adolescence are often short-lived rather than long-term committed partnerships, their importance should not be minimized. Adolescents spend a great deal of time focused on romantic relationships, and their positive and negative emotions are more tied to romantic relationships (or lack thereof) than to friendships, family relationships, or school (Furman & Shaffer, 2003[6]). Romantic relationships contribute to adolescents' identity formation, changes in family and peer relationships, and adolescents' emotional and behavioral adjustment.

Furthermore, romantic relationships are centrally connected to adolescents' emerging sexuality. Parents, policymakers, and researchers have devoted a great deal of attention to adolescents' sexuality, in large part because of concerns related to sexual intercourse, contraception, and preventing teen pregnancies.

5. Connolly, J., Furman, W., & Konarski, R. (2000). The role of peers in the emergence of heterosexual romantic relationships in adolescence. Child Development, 71, 1395–1408.
6. Furman, W., & Shaffer, L. (2003). The role of romantic relationships in adolescent development. In P. Florsheim (Ed.), Adolescent romantic relations and sexual behavior: Theory, research, and practical implications (pp. 3–22). Mahwah, NJ: Erlbaum.

However, sexuality involves more than this narrow focus. For example, adolescence is often when individuals who are lesbian, gay, bisexual, or transgender come to perceive themselves as such (Russell, Clarke, & Clary, 2009[7]). Thus, romantic relationships are a domain in which adolescents experiment with new behaviors and identities.

Behavioral and Psychological Adjustment

Identity formation

Theories of adolescent development often focus on identity formation as a central issue. For example, in Erikson's (1968[8]) classic theory of developmental stages, identity formation was highlighted as the primary indicator of successful development during adolescence (in contrast to role confusion, which would be an indicator of not successfully meeting the task of adolescence). Marcia (1966[9]) described identify formation during adolescence as involving both decision points and commitments with respect to ideologies (e.g., religion, politics) and occupations. He described

7. Russell, S. T., Clarke, T. J., & Clary, J. (2009). Are teens "post-gay"? Contemporary adolescents' sexual identity labels. Journal of Youth and Adolescence, 38, 884–890.
8. Erikson, E. H. (1968). Identity, youth, and crisis. New York, NY: Norton.
9. Marcia, J. E. (1966). Development and validation of ego identity status. Journal of Personality and Social Psychology, 3, 551–558.

four identity statuses: foreclosure, identity diffusion, moratorium, and identity achievement. *Foreclosure* occurs when an individual commits to an identity without exploring options. *Identity diffusion* occurs when adolescents neither explore nor commit to any identities. *Moratorium* is a state in which adolescents are actively exploring options but have not yet made commitments. *Identity achievement* occurs when individuals have explored different options and then made identity commitments. Building on this work, other researchers have investigated more specific aspects of identity. For example, Phinney (1989[10]) proposed a model of ethnic identity development that included stages of unexplored ethnic identity, ethnic identity search, and achieved ethnic identity.

10. Phinney, J. (1989). Stages of ethnic identity in minority group adolescents. Journal of Early Adolescence, 9, 34–49.

Aggression and antisocial behavior

Early, antisocial behavior leads to befriending others who also engage in antisocial behavior, which only perpetuates the downward cycle of aggression and wrongful acts. [Image: Philippe Put]

Several major theories of the development of antisocial behavior treat adolescence as an important period. Patterson's (1982[11]) early versus late starter model of the development of aggressive and antisocial behavior distinguishes youths whose antisocial behavior begins during childhood (early starters) versus adolescence (late starters). According to the theory, early starters are at greater risk for long-term antisocial behavior that extends into adulthood than

11. Patterson, G. R. (1982). Coercive family process. Eugene, OR: Castalia Press.

are late starters. Late starters who become antisocial during adolescence are theorized to experience poor parental monitoring and supervision, aspects of parenting that become more salient during adolescence. Poor monitoring and lack of supervision contribute to increasing involvement with deviant peers, which in turn promotes adolescents' own antisocial behavior. Late starters desist from antisocial behavior when changes in the environment make other options more appealing. Similarly, Moffitt's (1993[12]) life-course persistent versus adolescent-limited model distinguishes between antisocial behavior that begins in childhood versus adolescence. Moffitt regards adolescent-limited antisocial behavior as resulting from a "maturity gap" between adolescents' dependence on and control by adults and their desire to demonstrate their freedom from adult constraint. However, as they continue to develop, and legitimate adult roles and privileges become available to them, there are fewer incentives to engage in antisocial behavior, leading to desistance in these antisocial behaviors.

Anxiety and depression

Developmental models of anxiety and depression also treat adolescence as an important period, especially in terms of the emergence of gender differences in prevalence rates that persist through adulthood (Rudolph, 2009[13]). Starting in early adolescence,

12. Moffitt, T. E. (1993). Adolescence-limited and life course persistent antisocial behavior: Developmental taxonomy. Psychological Review, 100, 674–701.
13. Rudolph, K. D. (2009). The interpersonal context of adolescent depression. In S. Nolen-Hoeksema & L. M.

compared with males, females have rates of anxiety that are about twice as high and rates of depression that are 1.5 to 3 times as high (American Psychiatric Association, 2013[14]). Although the rates vary across specific anxiety and depression diagnoses, rates for some disorders are markedly higher in adolescence than in childhood or adulthood. For example, prevalence rates for specific phobias are about 5% in children and 3%–5% in adults but 16% in adolescents. Anxiety and depression are particularly concerning because suicide is one of the leading causes of death during adolescence. Developmental models focus on interpersonal contexts in both childhood and adolescence that foster depression and anxiety (e.g., Rudolph, 2009[15]). Family adversity, such as abuse and parental psychopathology, during childhood sets the stage for social and behavioral problems during adolescence. Adolescents with such problems generate stress in their relationships (e.g., by resolving conflict poorly and excessively seeking reassurance) and select into more maladaptive social contexts (e.g., "misery loves company" scenarios in which depressed youths select other depressed youths as friends and then frequently co-ruminate as they discuss their problems, exacerbating negative affect and stress). These processes are intensified for girls compared with boys because girls have more relationship-oriented goals related to intimacy and social approval,

Hilt (Eds.), Handbook of depression in adolescents (pp. 377–418). New York, NY: Taylor and Francis.

14. American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing.
15. Rudolph, K. D. (2009). The interpersonal context of adolescent depression. In S. Nolen-Hoeksema & L. M. Hilt (Eds.), Handbook of depression in adolescents (pp. 377–418). New York, NY: Taylor and Francis.

leaving them more vulnerable to disruption in these relationships. Anxiety and depression then exacerbate problems in social relationships, which in turn contribute to the stability of anxiety and depression over time.

Academic achievement

Adolescents spend more waking time in school than in any other context (Eccles & Roeser, 2011[16]). Academic achievement during adolescence is predicted by interpersonal (e.g., parental engagement in adolescents' education), intrapersonal (e.g., intrinsic motivation), and institutional (e.g., school quality) factors. Academic achievement is important in its own right as a marker of positive adjustment during adolescence but also because academic achievement sets the stage for future educational and occupational opportunities. The most serious consequence of school failure, particularly dropping out of school, is the high risk of unemployment or underemployment in adulthood that follows. High achievement can set the stage for college or future vocational training and opportunities.

Diversity

Adolescent development does not necessarily follow the same pathway for all individuals. Certain features of adolescence, particularly with respect to biological changes associated with

16. Eccles, J. S., & Roeser, R. W. (2011). Schools as developmental contexts during adolescence. Journal of Research on Adolescence, 21, 225–241.

puberty and cognitive changes associated with brain development, are relatively universal. But other features of adolescence depend largely on circumstances that are more environmentally variable. For example, adolescents growing up in one country might have different opportunities for risk taking than adolescents in a different country, and supports and sanctions for different behaviors in adolescence depend on laws and values that might be specific to where adolescents live. Likewise, different cultural norms regarding family and peer relationships shape adolescents' experiences in these domains. For example, in some countries, adolescents' parents are expected to retain control over major decisions, whereas in other countries, adolescents are expected to begin sharing in or taking control of decision making.

Even within the same country, adolescents' gender, ethnicity, immigrant status, religion, sexual orientation, socioeconomic status, and personality can shape both how adolescents behave and how others respond to them, creating diverse developmental contexts for different adolescents. For example, early puberty (that occurs before most other peers have experienced puberty) appears to be associated with worse outcomes for girls than boys, likely in part because girls who enter puberty early tend to associate with older boys, which in turn is associated with early sexual behavior and substance use. For adolescents who are ethnic or sexual minorities, discrimination sometimes presents a set of challenges that nonminorities do not face.

Finally, genetic variations contribute an additional source of diversity in adolescence. Current approaches emphasize gene X environment interactions, which often follow a *differential susceptibility* model (Belsky & Pluess, 2009[17]). That is, particular

17. Belsky, J., & Pluess, M. (2009). Beyond diathesis-stress: Differential susceptibility to environmental influences. Psychological Bulletin, 135, 885–908.

genetic variations are considered riskier than others, but genetic variations also can make adolescents more or less susceptible to environmental factors. For example, the association between the CHRM2genotype and adolescent externalizing behavior (aggression and delinquency)has been found in adolescents whose parents are low in monitoring behaviors (Dick et al., 2011[18]). Thus, it is important to bear in mind that individual differences play an important role in adolescent development.

Conclusions

Adolescent development is characterized by biological, cognitive, and social changes. Social changes are particularly notable as adolescents become more autonomous from their parents, spend more time with peers, and begin exploring romantic relationships and sexuality. Adjustment during adolescence is reflected in identity formation, which often involves a period of exploration followed by commitments to particular identities. Adolescence is characterized by risky behavior, which is made more likely by changes in the brain in which reward-processing centers develop more rapidly than cognitive control systems, making adolescents more sensitive to rewards than to possible negative consequences. Despite these generalizations, factors such as country of residence, gender, ethnicity, and sexual orientation shape development in ways that lead to diversity of experiences across adolescence.

18. Dick, D. M., Meyers, J. L., Latendresse, S. J., Creemers, H. E., Lansford, J. E., … Huizink, A. C. (2011). CHRM2, parental monitoring, and adolescent externalizing behavior: Evidence for gene-environment interaction. Psychological Science, 22, 481–489.

Outside Resources

Podcasts: Society for Research on Adolescence website with links to podcasts on a variety of topics related to adolescent development

http://www.s-r-a.org/sra-news/podcasts

Study: Add Health website on one of the biggest longitudinal studies of adolescence to date

http://www.cpc.unc.edu/projects/addhealth

Video: A selection of TED talks on adolescent brain development

http://tinyurl.com/lku4a3k

Web: UNICEF website on adolescents around the world

http://www.unicef.org/adolescence/index.html

Discussion Questions

1. What can parents do to promote their adolescents' positive adjustment?
2. In what ways do changes in brain development and cognition make adolescents particularly susceptible to peer influence?
3. How could interventions designed to prevent or reduce adolescents' problem behavior be developed to take advantage of what we know about adolescent

development?

4. Reflecting on your own adolescence, provide examples of times when you think your experience was different from those of your peers as a function of something unique about you.
5. In what ways was your experience of adolescence different from your parents' experience of adolescence? How do you think adolescence may be different 20 years from now?

70. Lecture: Adolescence

Lecture Transcript

Adolescence is a period of transition from childhood to adulthood. It includes many physical, cognitive, and psychosocial changes. We first explore physical development.

Puberty is a period of rapid physical growth and sexual maturation that occurs during adolescence. These changes begin somewhere between ages 8 and 14. Girls begin puberty at around 10 years of age. Boys begin about a year and a half later. These changes take around 3 to 4 years for completion.

Adolescents experience an overall physical growth spurt. The growth proceeds from the extremities toward the torso. This is referred to as distal-proximal development. In other words, you may see the hands grow, then the arms, and finally the torso. The overall physical growth spurt means increases of about 10-11 inches in height and 50 to 75 pounds in weight. The head begins to grow sometime after the feet have gone through their period of growth. Growth of the head is preceded by growth of the ears, nose, and lips, however. As the torso grows, so does the internal organs. The heart and lungs experience dramatic growth during this period. Sweat, odor, and oil glands become more active. Teenagers in the United States spend a lot of money on deodorants and acne medications as a result.

The brain also undergoes dramatic change during adolescence. The prefrontal cortex, located behind the forehead, is a part of the brain that helps with judgment, planning, and strategizing. This grows in early adolescence. The cerebellum also grows during adolescence. Watch the film assigned in this lesson, Inside the Teenage Brain, for more detail.

Sexual maturation is another change we undergo during

adolescence. Changes are divided into two categories: primary sex characteristics are changes in the reproductive organs. For males, primary characteristics include growth of the testes, penis, scrotum, and the first ejaculation of semen or spermarche. This occurs between 11-15 years of age.

Secondary characteristics are those not directly linked to reproduction but changes that signal that a male is becoming sexually mature. Shoulders become broader, the areola or area around the nipples become larger. There is some temporary breast development due to hormonal changes in many boys, typically around 14 years of age. The voice becomes lower as the larynx grows.

Hair becomes more coarse and darker. And hair in the pubic area, under the arms, and on the face develops.

In females, primary characteristics include growth of the uterus and the first menstrual period or menarche. Stress and higher percentage of body fat can bring menstruation at younger ages.

Many of the secondary characteristics are the same for boys and girls. Breast development begins at around age 10 and full development takes several years. Hips broaden and legs get larger. The voice becomes lower as the larynx grows, just as it does in males. Although, it is often less noticeable in females. Hair becomes darker and coarser. Pubic and underarm hair develops as well.

There is currently a lot of attention placed on physical appearance in the United States. This can be difficult for teens. Most teens just want to fit in with their peers and those who do not may feel uncomfortable. Teens that are overweight or obese may be ridiculed or teased. Physical changes may be easier for boys than girls because while boys are moving toward the cultural ideal of getting larger, girls are moving away from the cultural ideal of remaining thin. Early maturing females may feel uncomfortable with puberty, particularly because they may be thought of as much older than they are and may be thought of sexually active and mature, even though they are not.

Late maturing females may feel that others do not respect them as having grown up. Early maturing males may be popular in school and thought of as more mature than they are. They may also be recruited into gangs or for other violent activity because of their physique if they live in neighborhoods or communities where this type of activity occurs. Late maturing males may overcompensate for their slight build by trying to act as if they are older than they are.

The growth spurt is accompanied by a need for more calories. Most teens in the United States take in enough calories, but do not eat healthy foods. High fat, sugar, and salty foods combined with a sedentary life style leave many teens struggling with being overweight or obese. Such teens experience health risks such as sleep apnea, high blood pressure, and type II diabetes.

Teens may also experience eating disorders. Teenage girls are especially vulnerable to eating disorders in cultures obsessed with thinness.

Anorexia nervosa is overall starvation that is life threatening. A person with anorexia sees fat where there is none and may become obsessed with thinness, excessive dieting, and exercise. Anorexia is difficult to treat but can lead to cardiac arrest.

Bulimia is another eating disorder in which a person eats in binging episodes and then purges through self-induced vomiting or using laxatives or enemas. Repeated exposure of the teeth to corrosive stomach acid can break down the enamel. Blood blisters may develop on the roof of the mouth, the index finger may become discolored, and the esophagus damaged by repeatedly vomiting.

With adolescence comes a potential escalation in situations of abuse. Physical abuse becomes more violent as a parent has altercations with a much bigger child in adolescence. Sexual abuse increases with puberty and the impact of such abuse can include feeling stigmatized, having a distorted sense of sexuality, feeling powerless, and distrust. The myth of mutuality is the myth that the victim of sexual abuse is somehow responsible for its occurrence. This myth makes it very difficult for a person who has been sexually

abused to overcome the negative feelings associated with the abuse. Recognizing that this is a myth is an important step toward healing.

A majority of youth become sexually active in their late teens. The use of contraception has increased and teen pregnancy rates, though still high, have decreased. Most teens engage in sexual activity with a steady partner.

In the United States, the decline in teenagers using tobacco has stopped. Over-the-counter medications are still cause for concern as many teens use these for recreation. Marijuana is now the most commonly used drug. It has surpassed smoking tobacco. The perceived risk of marijuana use has been declining.

Some drugs are considered gateway drugs which means that the use of these drugs can often lead to use of stronger drugs. Drug use often interferes with healthy nutrition and sleep so important for teens. And many dangerous decisions can be made while under the influence. Examples include engaging in risky sexual behavior or driving while high or intoxicated.

Let's turn our attention to some global concerns about youth. Youth make up 30 percent of the population in some developing countries.

We've seen an increase in the amount of schooling children receive. But often the quality of instruction is poor and teachers and educational materials are hard to obtain. Drought, war, and other circumstances often disrupt schooling. The number of youth participating in the labor force has decreased in many parts of the world. This allows children to participate in formal education.

HIV/AIDS is the leading cause of death in sub-Saharan Africa. This is due to low condom use and widespread coercive sex. Tobacco use has been increasing in developing countries. And child brides or marriage to girls under 18 has decreased. These are just a few concerns about youth in the developing world.

Let's explore cognitive development in adolescence.

Piaget believed that many adolescents reach formal operational thought. This is marked by the ability to think abstractly or to use systems of abstract thought or logic more readily. An adolescent

may now be able to understand symbolic meanings such as those found in religion. Adolescents may also thing about "what if" situations or hypothetical situations more easily. And the adolescent may become conscious of their thoughts and enjoy the game of thinking or introspection.

Psychologist David Elkind offers some insights into the unique qualities of adolescent thought.

Adolescent egocentrism is the feeling a teenager may have that no one can understand what they are going through. A consoling adult may be told, "You don't understand! Nobody understands!"

The imaginary audience refers to the feeling of self-consciousness that many adolescents feel. Even when alone, the teenager may be imagining how others would see them. Those who feel particularly uneasy or awkward may try to make the discomfort by being sarcastic or by posturing in public.

The personal fable is the notion that fame and fortune lie ahead. This belief comes as the adolescent is able to see possibilities, but not yet understand probabilities. I had a student once who raised her hand during our class discussion of the personal fable. I called on her and she said, "Oh my gosh! I did this! I kept a list of all of my teacher's names so that I could personally thank them when I became famous!"

What was your personal fable? You may have given up on it once you found out how unlikely it was.

The invincibility fable is the mistaken idea that one is indestructible. Teenagers may think they may never get hurt when engaging in risky behavior. Look for examples of the invincibility fable in the film you view for this lesson.

In youth, conformity is emphasized. Many young teenagers, especially, pressure one another to act, speak, dress, and think alike.

Formal operational thought can be accompanied by the ability to see possibilities never before considered. Youth are often idealistic as a result. However, what is possible is not the same as what is likely.

Some current concerns in education in the United States include

reducing the rate of students who drop out of school before completing their high school diplomas, the impersonal nature of large, bureaucratic high schools, and the issue of where to group students by age in school. Should sixth graders be included in elementary school or should they be part of a junior high? Should ninth graders be at the top of their school in a junior high or should they attend school with seniors? What would be the advantages and disadvantages of each?

We now turn our attention to relationships and psychosocial development in adolescence.

The beginning of our modern idea of adolescence as a time of storm and stress can be traced to G. Stanley Hall. Hall wrote a 3 volume work documenting the lives of youth in 1909. As people relocated to large industrial cities in the U. S., youth became more visible and gained the attention of social workers and others concerned with development. Hall believed that the storm and stress of adolescence is created by the biological changes associated with puberty. But for many teens, adolescence is not a period of storm and stress. It seems to be a more stressful time for those who are also experiencing other stressors, perhaps at school or at home.

Consider your adolescence. Would you like to return to that period in your life? Why or why not?

Anna Freud wrote about adolescence and saw it as a period of temporary disruption as the id, ego, and superego are out of balance.

Hopefully, the overactive id is brought under control by the ego or through the use of reason and by being realistic. The later years of adolescence are less volatile than early adolescence.

Erikson believed that the primary concern of adolescence is that of establishing identity. The teen struggles with the question, "Who am I?" Who am I physically, sexually, socially, vocationally, spiritually, academically, and so on? Hopefully, the teen postpones making any decisions that will lock him or her in prematurely. The teen needs to wait or go through a period of exploration, called

a psychosocial moratorium, before making any long term decisions. Foreclosure occurs when others take that decision-making away from the teen. Having a criminal record or becoming a parent are examples of foreclosure. The teen that goes through adolescence without establishing an identity may be apathetic about the future. This is referred to as identity confusion.

Here is a list of what some teens reported that they wanted from their parents.

- They wanted reasonable freedoms and privileges.
- The wanted their parents to show faith in the decisions they made.
- They wanted their parents to approve of them as people; not that they had to like everything the teen did or said.
- They wanted their parents to be willing to listen to them.
- The wanted their parents to show concern for them and to support them in their interests.

PART XIV

MODULE 12: INTELLIGENCE AND FACILITATING COMPLEX THINKING

71. What Is Cognition?

Learning Objectives

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

- Describe cognition
- Distinguish concepts and prototypes
- Explain the difference between natural and artificial concepts

Imagine all of your thoughts as if they were physical entities, swirling rapidly inside your mind. How is it possible that the brain is able to move from one thought to the next in an organized, orderly fashion? The brain is endlessly perceiving, processing, planning, organizing, and remembering—it is always active. Yet, you don't notice most of your brain's activity as you move throughout your daily routine. This is only one facet of the complex processes involved in cognition. Simply put, cognition is thinking, and it encompasses the processes associated with perception, knowledge, problem solving, judgment, language, and memory. Scientists who study cognition are searching for ways to understand how we integrate, organize, and utilize our conscious cognitive experiences without being aware of all of the unconscious work that our brains are doing (for example, Kahneman, 2011).

COGNITION

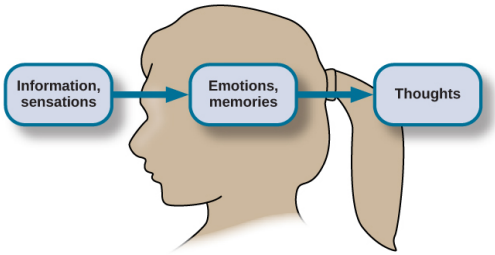
Upon waking each morning, you begin thinking—contemplating the tasks that you must complete that day. In what order should you run your errands? Should you go to the bank, the cleaners, or the grocery store first? Can you get these things done before you head to class or will they need to wait until school is done? These thoughts are one example of cognition at work. Exceptionally complex, cognition is an essential feature of human consciousness, yet not all aspects of cognition are consciously experienced.

Cognitive psychology is the field of psychology dedicated to examining how people think. It attempts to explain how and why we think the way we do by studying the interactions among human thinking, emotion, creativity, language, and problem solving, in addition to other cognitive processes. Cognitive psychologists strive to determine and measure different types of intelligence, why some people are better at problem solving than others, and how emotional intelligence affects success in the workplace, among countless other topics. They also sometimes focus on how we organize thoughts and information gathered from our environments into meaningful categories of thought, which will be discussed later.

CONCEPTS AND PROTOTYPES

The human nervous system is capable of handling endless streams of information. The senses serve as the interface between the mind and the external environment, receiving stimuli and translating it into nervous impulses that are transmitted to the brain. The brain then processes this information and uses the relevant pieces to create thoughts, which can then be expressed through language or stored in memory for future use. To make this process more complex, the brain does not gather information from external

environments only. When thoughts are formed, the brain also pulls information from emotions and memories ([link]). Emotion and memory are powerful influences on both our thoughts and behaviors.



Sensations and information are received by our brains, filtered through emotions and memories, and processed to become thoughts.

In order to organize this staggering amount of information, the brain has developed a file cabinet of sorts in the mind. The different files stored in the file cabinet are called concepts. Concepts are categories or groupings of linguistic information, images, ideas, or memories, such as life experiences. Concepts are, in many ways, big ideas that are generated by observing details, and categorizing and combining these details into cognitive structures. You use concepts to see the relationships among the different elements of your experiences and to keep the information in your mind organized and accessible.

Concepts are informed by our semantic memory (you learned about this concept when you studied memory) and are present in every aspect of our lives; however, one of the easiest places to notice concepts is inside a classroom, where they are discussed explicitly. When you study United States history, for example, you learn about more than just individual events that have happened in America's past. You absorb a large quantity of information by listening to and participating in discussions, examining maps, and reading first-hand accounts of people's lives. Your brain analyzes

these details and develops an overall understanding of American history. In the process, your brain gathers details that inform and refine your understanding of related concepts like democracy, power, and freedom.

Concepts can be complex and abstract, like justice, or more concrete, like types of birds. In psychology, for example, Piaget's stages of development are abstract concepts. Some concepts, like tolerance, are agreed upon by many people, because they have been used in various ways over many years. Other concepts, like the characteristics of your ideal friend or your family's birthday traditions, are personal and individualized. In this way, concepts touch every aspect of our lives, from our many daily routines to the guiding principles behind the way governments function.

Another technique used by your brain to organize information is the identification of prototypes for the concepts you have developed. A prototype is the best example or representation of a concept. For example, for the category of civil disobedience, your prototype could be Rosa Parks. Her peaceful resistance to segregation on a city bus in Montgomery, Alabama, is a recognizable example of civil disobedience. Or your prototype could be Mohandas Gandhi, sometimes called Mahatma Gandhi ("Mahatma" is an honorific title) ([link]).

In 1930, Mohandas Gandhi led a group in peaceful protest against a British tax on salt in India.

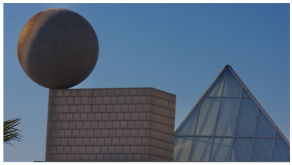
Mohandas Gandhi served as a nonviolent force for independence for India while simultaneously demanding that Buddhist, Hindu, Muslim, and Christian leaders—both Indian and British—collaborate peacefully. Although he was not always successful in preventing violence around him, his life provides a steadfast example of the civil disobedience prototype (Constitutional Rights Foundation, 2013). Just as concepts can be

abstract or concrete, we can make a distinction between concepts that are functions of our direct experience with the world and those that are more artificial in nature.

NATURAL AND ARTIFICIAL CONCEPTS

In psychology, concepts can be divided into two categories, natural and artificial. Natural concepts are created "naturally" through your experiences and can be developed from either direct or indirect experiences. For example, if you live in Essex Junction, Vermont, you have probably had a lot of direct experience with snow. You've watched it fall from the sky, you've seen lightly falling snow that barely covers the windshield of your car, and you've shoveled out 18 inches of fluffy white snow as you've thought, "This is perfect for skiing." You've thrown snowballs at your best friend and gone sledding down the steepest hill in town. In short, you know snow. You know what it looks like, smells like, tastes like, and feels like. If, however, you've lived your whole life on the island of Saint Vincent in the Caribbean, you may never have actually seen snow, much less tasted, smelled, or touched it. You know snow from the indirect experience of seeing pictures of falling snow—or from watching films that feature snow as part of the setting. Either way, snow is a natural concept because you can construct an understanding of it through direct observations or experiences of snow ([link]).

(a)



(b)

(a) Our concept of snow is an example of a natural concept—one that we understand through direct observation and experience. (b) In contrast, artificial concepts are ones that we know by a specific set of characteristics that they always exhibit, such as what defines different basic shapes. (credit a: modification of work by Maarten Takens; credit b: modification of work by "Shayan (USA)"/Flickr)

An artificial concept, on the other hand, is a concept that is defined by a specific set of characteristics. Various properties of geometric shapes, like squares and triangles, serve as useful examples of artificial concepts. A triangle always has three angles and three sides. A square always has four equal sides and four right angles.

Mathematical formulas, like the equation for area (length × width) are artificial concepts defined by specific sets of characteristics that are always the same. Artificial concepts can enhance the understanding of a topic by building on one another. For example, before learning the concept of "area of a square" (and the formula to find it), you must understand what a square is. Once the concept of "area of a square" is understood, an understanding of area for other geometric shapes can be built upon the original understanding of area. The use of artificial concepts to define an idea is crucial to communicating with others and engaging in complex thought. According to Goldstone and Kersten (2003), concepts act as building blocks and can be connected in countless combinations to create complex thoughts.

SCHEMATA

A schema is a mental construct consisting of a cluster or collection of related concepts (Bartlett, 1932). There are many different types of schemata, and they all have one thing in common: schemata are a method of organizing information that allows the brain to work more efficiently. When a schema is activated, the brain makes immediate assumptions about the person or object being observed.

There are several types of schemata. A role schema makes assumptions about how individuals in certain roles will behave (Callero, 1994). For example, imagine you meet someone who introduces himself as a firefighter. When this happens, your brain automatically activates the "firefighter schema" and begins making assumptions that this person is brave, selfless, and community-oriented. Despite not knowing this person, already you have unknowingly made judgments about him. Schemata also help you fill in gaps in the information you receive from the world around you. While schemata allow for more efficient information processing, there can be problems with schemata, regardless of whether they

are accurate: Perhaps this particular firefighter is not brave, he just works as a firefighter to pay the bills while studying to become a children's librarian.

An event schema, also known as a cognitive script, is a set of behaviors that can feel like a routine. Think about what you do when you walk into an elevator ([link]). First, the doors open and you wait to let exiting passengers leave the elevator car. Then, you step into the elevator and turn around to face the doors, looking for the correct button to push. You never face the back of the elevator, do you? And when you're riding in a crowded elevator and you can't face the front, it feels uncomfortable, doesn't it? Interestingly, event schemata can vary widely among different cultures and countries. For example, while it is quite common for people to greet one another with a handshake in the United States, in Tibet, you greet someone by sticking your tongue out at them, and in Belize, you bump fists (Cairns Regional Council, n.d.)

What event schema do you perform when riding in an elevator? (credit: "Gideon"/Flickr)

Because event schemata are automatic, they can be difficult to change. Imagine that you are driving home from work or school. This event schema involves getting in the car, shutting the door, and buckling your seatbelt before putting the key in the ignition. You might perform this script two or three times each day. As you drive home, you hear your phone's ring tone. Typically, the event schema that occurs when you hear your phone ringing involves locating the phone and answering it or responding to your latest text message. So without thinking, you reach for your phone, which could be in your pocket, in your bag, or on the passenger seat of the car. This powerful event schema is informed by your pattern of behavior and the pleasurable stimulation that a phone call or text message gives your brain. Because it is a schema, it is extremely challenging for us to stop reaching for the phone, even though we know that we endanger our own lives and the lives of others while we do it (Neyfakh, 2013) ([link]).

Texting while driving is dangerous, but it is a difficult event schema for some people to resist.

Remember the elevator? It feels almost impossible to walk in and *not* face the door. Our powerful event schema dictates our behavior

in the elevator, and it is no different with our phones. Current research suggests that it is the habit, or event schema, of checking our phones in many different situations that makes refraining from checking them while driving especially difficult (Bayer & Campbell, 2012). Because texting and driving has become a dangerous epidemic in recent years, psychologists are looking at ways to help people interrupt the "phone schema" while driving. Event schemata like these are the reason why many habits are difficult to break once they have been acquired. As we continue to examine thinking, keep in mind how powerful the forces of concepts and schemata are to our understanding of the world.

Summary

In this section, you were introduced to cognitive psychology, which is the study of cognition, or the brain's ability to think, perceive, plan, analyze, and remember. Concepts and their corresponding prototypes help us quickly organize our thinking by creating categories into which we can sort new information. We also develop schemata, which are clusters of related concepts. Some schemata involve routines of thought and behavior, and these help us function properly in various situations without having to "think twice" about them. Schemata show up in social situations and routines of daily behavior.

https://www.openassessments.com/assessments/833

Self Check Questions

Critical Thinking Questions

1. Describe a social schema that you would notice at a sporting event.

2. Explain why event schemata have so much power over human behavior.

Personal Application Question

3. Describe a natural concept that you know fully but that would be difficult for someone else to understand and explain why it would be difficult.

Answers

1. Answers will vary. When attending a basketball game, it is typical to support your team by wearing the team colors and sitting behind their bench.

2. Event schemata are rooted in the social fabric of our communities. We expect people to behave in certain ways in certain types of situations, and we hold ourselves to the same social standards. It is uncomfortable to go against an

event schema—it feels almost like we are breaking the rules.

Glossary

artificial concept concept that is defined by a very specific set of characteristics

cognition thinking, including perception, learning, problem solving, judgment, and memory

cognitive psychology field of psychology dedicated to studying every aspect of how people think

concept category or grouping of linguistic information, objects, ideas, or life experiences

cognitive script set of behaviors that are performed the same way each time; also referred to as an event schema

event schema set of behaviors that are performed the same way each time; also referred to as a cognitive script

natural concept mental groupings that are created "naturally" through your experiences

prototype

best representation of a concept

role schema set of expectations that define the behaviors of a person occupying a particular role

schema (plural = schemata) mental construct consisting of a cluster or collection of related concepts

72. Video: The Growth of Knowledge

How does our knowledge grow? It turns out there are some different ideas about that. Schemas, Four-Stage Theory of Cognitive Development, and Vygotsky's Theory of Scaffolding all play different roles but the basic idea is that children think about things very differently than adults.

A YouTube element has been excluded from this version of the text. You can view it online here: https://library.achievingthedream.org/hostoschilddevelopmenteducation/?p=101

73. Critical thinking

Critical thinking requires skill at analyzing the reliability and validity of information, as well as the attitude or disposition to do so. The skill and attitude may be displayed with regard to a particular subject matter or topic, but in principle it can occur in any realm of knowledge (Halpern, 2003; Williams, Oliver, & Stockade, 2004). A critical thinker does not necessarily have a negative attitude in the everyday sense of constantly criticizing someone or something. Instead, he or she can be thought of as *astute*: the critical thinker asks key questions, evaluates the evidence for ideas, reasons for problems both logically and objectively, and expresses ideas and conclusions clearly and precisely. Last (but not least), the critical thinker can apply these habits of mind in more than one realm of life or knowledge.

With such a broad definition, it is not surprising that educators have suggested a variety of specific cognitive skills as contributing to critical thinking. In one study, for example, the researcher found how critical thinking can be reflected in regard to a published article was stimulated by **annotation**—writing questions and comments in the margins of the article (Liu, 2006). In this study, students were initially instructed in ways of annotating reading materials. Later, when the students completed additional readings for assignments, it was found that some students in fact used their annotation skills much more than others—some simply underlined passages, for example, with a highlighting pen. When essays written about the readings were later analyzed, the ones written by the annotators were found to be more well reasoned—more critically astute—than the essays written by the other students.

In another study, on the other hand, a researcher found that critical thinking can also involve oral discussion of personal issues or dilemmas (Hawkins, 2006). In this study, students were asked to verbally describe a recent, personal incident that disturbed them.

Classmates then discussed the incident together in order to identify the precise reasons why the incident was disturbing, as well as the assumptions that the student made in describing the incident. The original student—the one who had first told the story—then used the results of the group discussion to frame a topic for a research essay. In one story of a troubling incident, a student told of a time when a store clerk has snubbed or rejected the student during a recent shopping errand. Through discussion, classmates decided that an assumption underlying the student's disturbance was her suspicion that she had been a victim of racial profiling based on her skin color. The student then used this idea as the basis for a research essay on the topic of "racial profiling in retail stores." The oral discussion thus stimulated critical thinking in the student and the classmates, but it also *relied* on their prior critical thinking skills at the same time.

Notice that in both of these research studies, as in others like them, what made the thinking "critical" was students' use of **metacognition**—strategies for thinking *about* thinking and for monitoring the success and quality of one's own thinking. This concept was discussed in the chapter, "The learning process," as a feature of constructivist views about learning. There we pointed out that when students acquire experience in building their own knowledge, they also become skilled both at knowing *how* they learn, and at knowing *whether* they have learned something well. These are two defining qualities of metacognition, but they are part of critical thinking as well. In fostering critical thinking, a teacher is really fostering a student's ability to construct or control his or her own thinking and to avoid being controlled by ideas unreflectively.

How best to teach critical thinking remains a matter of debate. One issue is whether to infuse critical skills into existing courses or to teach them through separate, free-standing units or courses. The first approach has the potential advantage of integrating critical thinking into students' entire educations. But it risks diluting students' understanding and use of critical thinking simply because critical thinking takes on a different form in each learning context.

Its details and appearance vary among courses and teachers. The free-standing approach has the opposite qualities: it stands a better chance of being understood clearly and coherently, but at the cost of obscuring how it is related to other courses, tasks, and activities. This dilemma is the issue—again—of **transfer**, discussed in the chapter, "The learning process." Unfortunately, research to compare the different strategies for teaching critical thinking does not settle the matter. The research suggests simply that either infusion or free-standing approaches can work as long as it is implemented thoroughly and teachers are committed to the value of critical thinking (Halpern, 2003).

A related issue about teaching critical thinking is about deciding who needs to learn critical thinking skills the most. Should it be all students, or only some of them? Teaching all students seems the more democratic alternative and thus appropriate for educators. Surveys have found, however, that teachers sometimes favor teaching of critical thinking only to high-advantage students—the ones who already achieve well, who come from relatively high-income families, or (for high school students) who take courses intended for university entrance (Warburton & Torff, 2005). Presumably the rationale for this bias is that high-advantage students can benefit and/or understand and use critical thinking better than other students. Yet, there is little research evidence to support this idea, even if it were not ethically questionable. The study by Hawkins (2006) described above, for example, is that critical thinking was fostered even with students considered low-advantage.

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74. Creative thinking

Creativity is the ability to make or do something new that is also useful or valued by others (Gardner, 1993). The "something" can be an object (like an essay or painting), a skill (like playing an instrument), or an action (like using a familiar tool in a new way). To be creative, the object, skill, or action cannot simply be bizarre or strange; it cannot be new without also being useful or valued, and not simply be the result of accident. If a person types letters at random that form a poem by chance, the result may be beautiful, but it would not be creative by the definition above. Viewed this way, creativity includes a wide range of human experience that many people, if not everyone, have had at some time or other (Kaufman & Baer, 2006). The experience is not restricted to a few geniuses, nor exclusive to specific fields or activities like art or the composing of music.

Especially important for teachers are two facts. The first is that an important form of creativity is **creative thinking**, the generation of ideas that are new as well as useful, productive, and appropriate. The second is that creative thinking can be stimulated by teachers' efforts. Teachers can, for example, encourage students' **divergent thinking**—ideas that are open-ended and that lead in many directions (Torrance, 1992; Kim, 2006). Divergent thinking is stimulated by open-ended questions—questions with many possible answers, such as the following:

- How many uses can you think of for a cup?
- Draw a picture that somehow incorporates all of these words: cat, fire engine, and banana.
- What is the most unusual use you can think of for a shoe?

Note that answering these questions creatively depends partly on having already acquired knowledge about the objects to which the questions refer. In this sense divergent thinking depends partly

on its converse, **convergent thinking**, which is focused, logical reasoning about ideas and experiences that lead to specific answers. Up to a point, then, developing students' convergent thinking—as schoolwork often does by emphasizing mastery of content—facilitates students' divergent thinking indirectly, and hence also their creativity (Sternberg, 2003; Runco, 2004; Cropley, 2006). But carried to extremes, excessive emphasis on convergent thinking may discourage creativity.

Whether in school or out, creativity seems to flourish best when the creative activity is its own intrinsic reward, and a person is relatively unconcerned with what others think of the results. Whatever the activity—composing a song, writing an essay, organizing a party, or whatever—it is more likely to be creative if the creator focuses on and enjoys the activity in itself, and thinks relatively little about how others may evaluate the activity (Brophy, 2004). Unfortunately, encouraging students to ignore others' responses can sometimes pose a challenge for teachers. Not only is it the teachers' job to evaluate students' learning of particular ideas or skills, but also they have to do so within restricted time limits of a course or a school year. In spite of these constraints, though, creativity still can be encouraged in classrooms at least some of the time (Claxton, Edwards, & Scale-Constantinou, 2006). Suppose, for example, that students have to be assessed on their understanding and use of particular vocabulary. Testing their understanding may limit creative thinking; students will understandably focus their energies on learning "right" answers for the tests. But assessment does not have to happen constantly. There can also be times to encourage experimentation with vocabulary through writing poems, making word games, or in other thought-provoking ways. These activities are all potentially creative. To some extent, therefore, learning content and experimenting or playing with content can both find a place—in fact one of these activities can often support the other. We return to this point later in this chapter, when we discuss student-centered strategies of instruction, such as cooperative learning and play as a learning medium

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75. Problem-solving

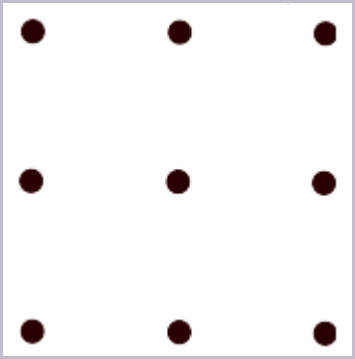
Somewhat less open-ended than creative thinking is **problem solving**, the analysis and solution of tasks or situations that are complex or ambiguous and that pose difficulties or obstacles of some kind (Mayer & Wittrock, 2006). Problem solving is needed, for example, when a physician analyzes a chest X-ray: a photograph of the chest is far from clear and requires skill, experience, and resourcefulness to decide which foggy-looking blobs to ignore, and which to interpret as real physical structures (and therefore real medical concerns). Problem solving is also needed when a grocery store manager has to decide how to improve the sales of a product: should she put it on sale at a lower price, or increase publicity for it, or both? Will these actions actually increase sales enough to pay for their costs?

Example 1: Problem Solving in the Classroom

Problem solving happens in classrooms when teachers present tasks or challenges that are deliberately complex and for which finding a solution is not straightforward or obvious. The responses of students to such problems, as well as the strategies for assisting them, show the key features of problem solving. Consider this example, and students' responses to it. We have numbered and named the paragraphs to make it easier to comment about them individually:

Scene #1: A problem to be solved

A teacher gave these instructions: "Can you connect all of the dots below using only ***four*** straight lines?" She drew the following display on the chalkboard:



The problem itself and the procedure for solving it seemed very clear: simply experiment with different arrangements of four lines. But two volunteers tried doing it at the board, but were unsuccessful. Several others worked at it at their seats, but also without success.

Scene #2: Coaxing students to re-frame the problem

When no one seemed to be getting it, the teacher asked, "Think about how you've set up the problem in your mind—about what you believe the problem is about. For instance, have you made any assumptions about how long

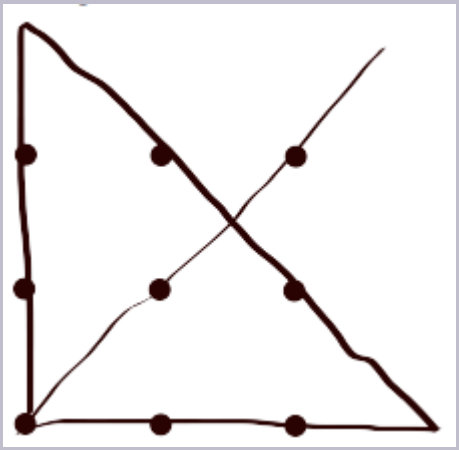
the lines ought to be? Don't stay stuck on one approach if it's not working!"

Scene #3: Alicia abandons a fixed response

After the teacher said this, Alicia indeed continued to think about how she saw the problem. "The lines need to be no longer than the distance across the square," she said to herself. So she tried several more solutions, but none of them worked either.

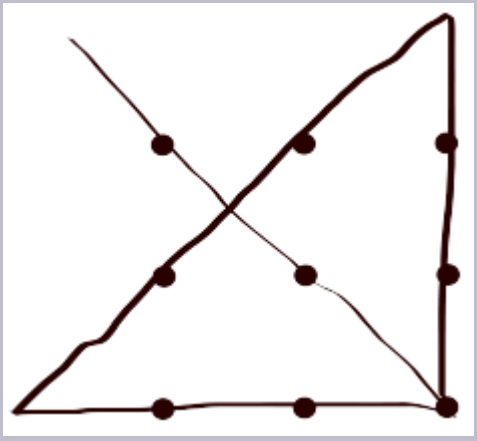
The teacher walked by Alicia's desk and saw what Alicia was doing. She repeated her earlier comment: "Have you assumed anything about how long the lines ought to be?"

Alicia stared at the teacher blankly, but then smiled and said, "Hmm! You didn't actually **say** that the lines could be no longer than the matrix! Why not make them longer?" So she experimented again using oversized lines and soon discovered a solution:



Scene #4: Willem's and Rachel's alternative strategies

Meanwhile, Willem worked on the problem. As it happened, Willem loved puzzles of all kinds, and had ample experience with them. He had not, however, seen this particular problem. "It **must** be a trick," he said to himself, because he knew from experience that problems posed in this way often were not what they first appeared to be. He mused to himself: "Think outside the box, they always tell you. . ." And **that** was just the hint he needed: he drew lines outside the box by making them longer than the matrix and soon came up with this solution:



When Rachel went to work, she took one look at the problem and knew the answer immediately: she had seen this problem before, though she could not remember where. She had also seen other drawing-related puzzles, and knew that their solution always depended on making the lines longer, shorter, or differently angled than first

expected. After staring at the dots briefly, she drew a solution faster than Alicia or even Willem. Her solution looked exactly like Willem's.

This story illustrates two common features of problem solving: the effect of degree of structure or constraint on problem solving, and the effect of mental obstacles to solving problems. The next sections discuss each of these features, and then looks at common techniques for solving problems.

The effect of constraints: well-structured versus ill-structured problems

Problems vary in how much information they provide for solving a problem, as well as in how many rules or procedures are needed for a solution. A **well-structured problem** provides much of the information needed and can in principle be solved using relatively few clearly understood rules. Classic examples are the word problems often taught in math lessons or classes: everything you need to know is contained within the stated problem and the solution procedures are relatively clear and precise. An **ill-structured problem** has the converse qualities: the information is not necessarily within the problem, solution procedures are potentially quite numerous, and a multiple solutions are likely (Voss, 2006). Extreme examples are problems like "How can the world achieve lasting peace?" or "How can teachers insure that students learn?"

By these definitions, the nine-dot problem is relatively well-structured—though not completely. Most of the information needed for a solution is provided in Scene #1: there are nine dots shown

and instructions given to draw four lines. But not *all* necessary information was given: students needed to consider lines that were longer than implied in the original statement of the problem. Students had to "think outside the box," as Willem said—in this case, literally.

When a problem is well-structured, so are its solution procedures likely to be as well. A well-defined procedure for solving a particular kind of problem is often called an **algorithm**; examples are the procedures for multiplying or dividing two numbers or the instructions for using a computer (Leiserson, et al., 2001). Algorithms are only effective when a problem is very well-structured and there is no question about whether the algorithm is an appropriate choice for the problem. In that situation it pretty much guarantees a correct solution. They do not work well, however, with ill-structured problems, where they are ambiguities and questions about how to proceed or even about precisely *what* the problem is about. In those cases it is more effective to use **heuristics**, which are general strategies—"rules of thumb," so to speak—that do not always work, but often do, or that provide at least partial solutions. When beginning research for a term paper, for example, a useful heuristic is to scan the library catalogue for titles that look relevant. There is no guarantee that this strategy will yield the books most needed for the paper, but the strategy works enough of the time to make it worth trying.

In the nine-dot problem, most students began in Scene #1 with a simple algorithm that can be stated like this: "Draw one line, then draw another, and another, and another." Unfortunately this simple procedure did not produce a solution, so they had to find other strategies for a solution. Three alternatives are described in Scenes #3 (for Alicia) and 4 (for Willem and Rachel). Of these, Willem's response resembled a heuristic the most: he knew from experience that a good *general* strategy that *often* worked for such problems was to suspect a deception or trick in how the problem was originally stated. So he set out to question what the teacher had

meant by the word *line*, and came up with an acceptable solution as a result.

Common obstacles to solving problems

The example also illustrates two common problems that sometimes happen during problem solving. One of these is **functional fixedness**: a tendency to regard the *functions* of objects and ideas as *fixed* (German & Barrett, 2005). Over time, we get so used to one particular purpose for an object that we overlook other uses. We may think of a dictionary, for example, as necessarily something to verify spellings and definitions, but it also can function as a gift, a doorstop, or a footstool. For students working on the nine-dot matrix described in the last section, the notion of "drawing" a line was also initially fixed; they assumed it to be connecting dots but not extending lines beyond the dots. Functional fixedness sometimes is also called **response set**, the tendency for a person to frame or think about each problem in a series in the same way as the previous problem, even when doing so is not appropriate to later problems. In the example of the nine-dot matrix described above, students often tried one solution after another, but each solution was constrained by a set response *not* to extend any line beyond the matrix.

Functional fixedness and the response set are obstacles in **problem representation**, the way that a person understands and organizes information provided in a problem. If information is misunderstood or used inappropriately, then mistakes are likely—if indeed the problem can be solved at all. With the nine-dot matrix problem, for example, construing the instruction to draw four lines as meaning "draw four lines entirely within the matrix" means that the problem simply could not be solved. For another, consider this problem: "The number of water lilies on a lake doubles each day. Each water lily covers exactly one square foot. If it takes 100 days

for the lilies to cover the lake exactly, how many days does it take for the lilies to cover exactly half of the lake?" If you think that the size of the lilies affects the solution to this problem, you have not represented the problem correctly. Information about lily size is *not* relevant to the solution, and only serves to distract from the truly crucial information, the fact that the lilies *double* their coverage each day. (The answer, incidentally, is that the lake is half covered in 99 days; can you think why?)

Strategies to assist problem solving

Just as there are cognitive obstacles to problem solving, there are also general strategies that help the process be successful, regardless of the specific content of a problem (Thagard, 2005). One helpful strategy is **problem analysis**—identifying the parts of the problem and working on each part separately. Analysis is especially useful when a problem is ill-structured. Consider this problem, for example: "Devise a plan to improve bicycle transportation in the city." Solving this problem is easier if you identify its parts or component subproblems, such as (1) installing bicycle lanes on busy streets, (2) educating cyclists and motorists to ride safely, (3) fixing potholes on streets used by cyclists, and (4) revising traffic laws that interfere with cycling. Each separate subproblem is more manageable than the original, general problem. The solution of each subproblem contributes the solution of the whole, though of course is not equivalent to a whole solution.

Another helpful strategy is **working backward** *from* a final solution to the originally stated problem. This approach is especially helpful when a problem is well-structured but also has elements that are distracting or misleading when approached in a forward, normal direction. The water lily problem described above is a good example: starting with the day when *all* the lake is covered (Day 100), ask what day would it therefore be *half* covered (by the terms of the

problem, it would have to be the day before, or Day 99). Working backward in this case encourages reframing the extra information in the problem (i. e. the size of each water lily) as merely distracting, not as crucial to a solution.

A third helpful strategy is **analogical thinking**—using knowledge or experiences with similar features or structures to help solve the problem at hand (Bassok, 2003). In devising a plan to improve bicycling in the city, for example, an analogy of cars with bicycles is helpful in thinking of solutions: improving conditions for both vehicles requires many of the same measures (improving the roadways, educating drivers). Even solving simpler, more basic problems is helped by considering analogies. A first grade student can partially decode unfamiliar printed words by analogy to words he or she has learned already. If the child cannot yet read the word *screen*, for example, he can note that part of this word looks similar to words he may already know, such as *seen* or *green*, and from this observation derive a clue about how to read the word *screen*. Teachers can assist this process, as you might expect, by suggesting reasonable, helpful analogies for students to consider.

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76. Broad instructional strategies that stimulate complex thinking

Because the forms of thinking just described—critical thinking, creativity and problem solving—are broad and important educationally, it is not surprising that educators have identified strategies to encourage their development. Some of the possibilities are shown in Table 1 and group several instructional strategies along two dimensions: how much the strategy is student-centered and how much a strategy depends on group interaction. It should be emphasized that the two-way classification in Table 1 is not very precise, but it gives a useful framework for understanding the options available for planning and implementing instruction. The more important of the two dimensions in the table is the first one—the extent to which an instructional strategy is either directed by the teacher or initiated by students. We take a closer look at this dimension in the next part of this chapter, followed by discussion of group-oriented teaching strategies.

Table 1: Major instructional strategies grouped by level of teacher direction and student focus

	Directed by student(s) more		
	Cooperative learning	Self-reflection	
	Inquiry Discovery learning	Independent study Concept maps	
Emphasizes groups somewhat more		Mastery learning	**Emphasizes individuals somewhat more**
	Lectures	Textbook readings Advance organizers Outlining Recalling, relating, and elaborating	
	Direct instruction Madeline Hunter's "Effective Teaching"		
	Directed by teacher more		

Definitions of Terms in Table 1

- **Lecture:** Telling or explaining previously organized information—usually to a group
- **Assigned reading:** Reading, usually individually, of previously organized information
- **Advance organizers:** Brief overview, either verbally or graphically, of material about to be covered in a lecture or text
- **Outlining:** Writing important points of a lecture or reading, usually in a hierarchical format

- **Taking notes:** Writing important points of a lecture or reading, often organized according to the learning needs of an individual student
- **Concept maps:** Graphic depiction of relationships among a set of concepts, terms, or ideas; usually organized by the student, but not always
- **Madeline Hunter's "Effective Teaching":** A set of strategies that emphasizes clear presentation of goals, the explanation and modeling of tasks to students and careful monitoring of students' progress toward the goals

Teacher-directed instruction

As the name implies, teacher-directed instruction includes any strategies initiated and guided primarily by the teacher. A classic example is exposition or lecturing (simply telling or explaining important information to students) combined with assigning reading from texts. But teacher-directed instruction also includes strategies that involve more active response from students, such as encouraging students to elaborate on new knowledge or to explain how new information relates to prior knowledge. Whatever their form, teacher-directed instructional methods normally include the organizing of information on behalf of students, even if teachers also expect students to organize it further on their own. Sometimes, therefore, teacher-directed methods are thought of as transmitting knowledge from teacher to student as clearly and efficiently as

possible, even if they also require mental work on the part of the student.

Lectures and readings

Lectures and readings are traditional staples of educators, particularly with older students (including university students). At their best, they pre-organize information so that (at least in theory) the student only has to remember what was said in the lecture or written in the text in order to begin understanding it (Exley & Dennick, 2004). Their limitation is the ambiguity of the responses they require: listening and reading are by nature quiet and stationary, and do not in themselves indicate whether a student is comprehending or even attending to the material. Educators sometimes complain that "students are too passive" during lectures or when reading. But physical quietness is intrinsic to these activities, not to the students who do them. A book just sits still, after all, unless a student makes an effort to read it, and a lecture may not be heard unless a student makes the effort to listen to it.

Advance organizers

In spite of these problems, there are strategies for making lectures and readings effective. A teacher can be especially careful about organizing information *for* students, and she can turn part of the mental work over to students themselves. An example of the first approach is the use of **advance organizers**—brief overviews or introductions to new material before the material itself is presented (Ausubel, 1978). Textbook authors (including ourselves) often try deliberately to insert periodic advance organizers to introduce new sections or chapters in the text. When used in a lecture, advance

organizers are usually statements in the form of brief introductory remarks, though sometimes diagrams showing relationships among key ideas can also serve the same purpose (Robinson, et al., 2003). Whatever their form, advance organizers partially organize the material on behalf of the students, so that they know where to put it all, so to speak, as they learn them in more detail.

Recalling and relating prior knowledge

Another strategy for improving teacher-directed instruction is to encourage students to relate the new material to prior familiar knowledge. When one of us (Kelvin) first learned a foreign language (in his case French), for example, he often noticed similarities between French and English vocabulary. A French word for picture, for example, was *image*, spelled exactly as it is in English. The French word for *splendid* was *splendide*, spelled almost the same as in English, though not quite. Relating the French vocabulary to English vocabulary helped in learning and remembering the French.

As children and youth become more experienced in their academics, they tend to relate new information to previously learned information more frequently and automatically (Goodwin, 1999; Oakhill, Hartt, & Samols, 2005). But teachers can also facilitate students' use of this strategy. When presenting new concepts or ideas, the teacher can relate them to previously learned ideas deliberately—essentially modeling a memory strategy that students learn to use for themselves. In a science class, for example, she can say, "This is another example of. . ., which we studied before"; in social studies she can say, "Remember what we found out last time about the growth of the railroads? We saw that. . ."

If students are relatively young or are struggling academically, it is especially important to remind them of their prior knowledge. Teachers can periodically ask questions like "What do you already know about this topic?" or "How will your new knowledge about

this topic change what you know already?" Whatever the age of students, connecting new with prior knowledge is easier with help from someone more knowledgeable, such as the teacher. When learning algorithms for multiplication, for example, students may not at first see how multiplication is related to addition processes which they probably learned previously (Burns, 2001). But if a teacher takes time to explain the relationship and to give students time to explore it, then the new skill of multiplication may be learned more easily.

Elaborating information

Elaborating new information means asking questions about the new material, inferring ideas and relationships among the new concepts. Such strategies are closely related to the strategy of recalling prior knowledge as discussed above: elaboration enriches the new information and connects it to other knowledge. In this sense elaboration makes the new learning more meaningful and less arbitrary.

A teacher can help students use elaboration by modeling this behavior. The teacher can interrupt his or her explanation of an idea, for example, by asking how it relates to other ideas, or by speculating about where the new concept or idea may lead. He or she can also encourage students to do the same, and even give students questions to guide their thinking. When giving examples of a concept, for example, a teacher can hold back from offering all of the examples, and instead ask students to think of additional examples themselves. The same tactic can work with assigned readings; if the reading includes examples, the teacher can instruct students to find or make up additional examples of their own.

Organizing new information

There are many ways to organize new information that are especially well-suited to teacher-directed instruction. A common way is simply to ask students to **outline information** read in a text or heard in a lecture. Outlining works especially well when the information is already organized somewhat hierarchically into a series of main topics, each with supporting subtopics or subpoints. Outlining is basically a form of the more general strategy of **taking notes**, or writing down key ideas and terms from a reading or lecture. Research studies find that that the precise style or content of notes is less important that the quantity of notes taken: more detail is usually better than less (Ward & Tatsukawa, 2003). Written notes insure that a student thinks about the material not only while writing it down, but also when reading the notes later. These benefits are especially helpful when students are relatively inexperienced at school learning in general (as in the earlier grade levels), or relatively inexperienced about a specific topic or content in particular. Not surprisingly, such students may also need more guidance than usual about what and how to write notes. It can be helpful for the teacher to provide a note-taking guide, like the ones in Note-Taking Guides 1 and 2.

Note-Taking Guide 1

Notes on Science Experiment

1. Purpose of the experiment (in one sentence):

2. Equipment needed (list each item and define any special terms):

1)

2)

3)

4)

3. Procedure used (be specific!):

4. Results (include each measurement, rounded to the nearest integer):

Observation #1

Observation #2

Observation #3

Observation #4

Average measurement, #1–4:

Note-Taking Guide 2

Guide to Notes About Tale of Two Cities

1. Main characters (list and describe in just a few words):

a)

b)

c)

d)

2. Setting of the story (time and place):

3. Unfamiliar vocabulary in the story (list and define):

a)

b)

c)

d)

4. Plot (write down only the main events):

a)

b)

c)

d)

5. Theme (or underlying "message") of the story:

In learning expository material, another helpful strategy—one that is more visually oriented—is to make **concept maps**, or diagrams of the connections among concepts or ideas. Figure 1 shows concept maps made by two individuals that graphically depict how a key idea, *child development*, relates to learning and education. One of the maps was drawn by a classroom teacher and the other by a university professor of psychology (Seifert, 1991). They suggest possible differences in how the two individuals think about children and their development. Not surprisingly, the teacher gave more prominence to practical concerns (for example, classroom learning and child abuse), and the professor gave more prominence to theoretical ones (for example, Erik Erikson and Piaget). The differences suggest that these two people may have something

different in mind when they use the same term, child development. The differences have the potential to create misunderstandings between them (Seifert, 1999; Super & Harkness, 2003). By the same token, the two maps also suggest what each person might need to learn in order to achieve better understanding of the other person's thinking and ideas

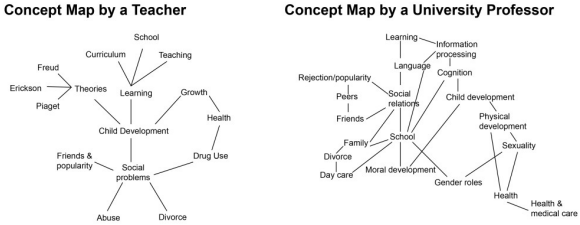

Figure 1: Maps of personal definitions of "child development"

Mastery learning

This term refers to an instructional approach in which all students learn material to an identically high level, even if some students require more time than others to do so (Gentile, 2004). In mastery learning, the teacher directs learning, though sometimes only in the sense of finding, writing, and orchestrating specific modules or units for students to learn. In one typical mastery learning program, the teacher introduces a few new concepts or topics through a brief lecture or teacher-led demonstration. Then she gives an ungraded assignment or test immediately in order to assess how well students have learned the material, and which ones still need help. The students who have already learned the unit are given enrichment activities. Those needing more help are provided individual tutoring or additional self-guiding materials that clarify the initial content; they work until they have in fact mastered the content (hence the name *mastery learning*). At that point students take another test or do another assignment to show that they have in fact learned the material to the expected high standard. When the system is working

well, all students end up with high scores or grades, although usually some take longer to do so than others.

As you might suspect, mastery learning poses two challenges. The first is ethical: is it really fair to give enrichment only to faster students and remediation only to slower students? This practice could deteriorate into continually providing the fast with an interesting education, while continually providing the slow only with boring, repetitious material. In using the approach, therefore, it is important to make all materials interesting, whether enrichment or remedial. It is also important to make sure that the basic learning goals of each unit are truly important—even crucial—for everyone to learn, so that even slower individuals spend their time well.

The other challenge of mastery learning is more practical: the approach makes strong demands for detailed, highly organized curriculum. If the approach is to work, the teacher must either locate such a curriculum, write one herself, or assemble a suitable mixture of published and self-authored materials. However the curriculum is created, the end result has to be a program filled with small units of study as well as ample enrichment and remedial materials. Sometimes providing these practical requirements can be challenging. But not always: some subjects (like mathematics) lend themselves to detailed, sequential organization especially well. In many cases, too, commercial publishers have produced curricula already organized for use in mastery learning programs (Fox, 2004).

Direct instruction

Although the term *direct instruction* is sometimes a synonym for *teacher-directed instruction*, more often it refers to a version of mastery learning that is highly scripted, meaning that it not only organizes the curriculum into small modules or units as described above, but also dictates *how* teachers should teach and sometimes

even the words they should speak (Adams & Engelmann, 1996; Magliaro, Lockee, & Burton, 2005). Direct instruction programs are usually based on a mix of ideas from behaviorism and cognitive theories of learning. In keeping with behaviorism, the teacher is supposed to praise students immediately and explicitly when they give a correct answer. In keeping with cognitive theory, she is supposed to state learning objectives in advance of teaching them (providing a sort of mini-advance organizer), provide frequent reviews of materials, and check deliberately on how well students are learning. Direct instruction usually also introduces material in small, logical steps, and calls for plenty of time for students to practice.

Direct instruction programs share one of the challenges of other mastery learning approaches: because they hold all students to the same high standard of achievement, they must deal with differences in how long students require to reach the standard. But direct instruction has an additional challenge, in that they often rely on small-group interaction more heavily than other mastery learning programs, and use self-guiding materials less. This difference has the benefit that direct instruction works especially well with younger students (especially kindergarten through third grade), who may have limited skills at working alone for extended periods. The challenge is that reliance on small-group interaction can make it impractical to use direct instruction with an entire class or for an entire school day. In spite of these limits, however, research has found direct instruction to be very effective in teaching basic skills such as early reading and arithmetic (Adams & Engelmann, 1996).

Madeline Hunter's effective teaching model

A number of direct instruction strategies have been combined by Madeline Hunter into a single, relatively comprehensive approach that she calls **mastery teaching** (not to be confused with the related

term mastery learning) or the **effective teaching model** (M. Hunter, 1982; R. Hunter, 2004). Important features of the model are summarized in the outline below (R. Hunter, 2004). As you can see, the features span all phases of contact with students—before, during, and after lessons.

- Prepare students to learn.
  - Make good use of time at the beginning of a lesson or activity, when attention is best
  - Direct students' attention to what lies ahead in a lesson—for example, by offering "advance organizers"
  - Explain lesson objectives explicitly
- Present information clearly and explicitly.
  - Set a basic structure to the lesson and stay with it throughout
  - Use familiar terms and examples
  - Be concise
- Check for understanding and give guided practice.
  - Ask questions that everyone responds to—for example, "Raise your hand if you think the answer is X"
  - Invite choral responses—for example, "Is this a correct answer or not?"
  - Sample individuals' understanding—for example, "Barry, what's your example of X?"
- Provide for independent practice.
  - Work through the first few exercises or problems together
  - Keep independent practice periods brief and intersperse with discussions that offer feedback

What happens even before a lesson begins? Like many forms of teacher-directed instruction, the effective teaching model requires curricula and learning goals that are tightly organized and divisible into small parts, ideas, or skills. In teaching about photosynthesis, for example, the teacher (or at least her curriculum) needs to

identify the basic elements that contribute to this process, and how they relate to each other. With photosynthesis, the elements include the sun, plants, animals, chlorophyll, oxygen produced by plants and consumed by animals, and carbon dioxide that produced by animals and consumed by plants. The roles of these elements need to be identified and expressed at a level appropriate for the students. With advanced science students, oxygen, chlorophyll, and carbon dioxide may be expressed as part of complex chemical reactions; with first-grade students, though, they may be expressed simply as parts of a process akin to breathing or respiration.

Once this analysis of the curriculum has been done, the Hunter's effective teaching model requires making the most of the lesson time by creating an **anticipatory set**, which is an activity that focuses or orients the attention of students to the upcoming content. Creating an anticipatory set may consist, for example, of posing one or more questions about students' everyday knowledge or knowledge of prior lessons. In teaching about differences between fruits and vegetables, the teacher could start by asking: "If you are making a salad strictly of fruit, which of these would be OK to use: apple, tomato, cucumber, or orange?" As the lesson proceeds, information needs to be offered in short, logical pieces, using language as familiar as possible to the students. Examples should be plentiful and varied: if the purpose is to define and distinguish fruits and vegetables, for example, then features defining each group should be presented singularly or at most just a few at a time, with clear-cut examples presented of each feature. Sometimes models or analogies also help to explain examples. A teacher can say: "Think of a fruit as a sort of 'decoration' on the plant, because if you pick it, the plant will go on living." But models can also mislead students if they are not used thoughtfully, since they may contain features that differ from the original concepts. In likening a fruit to a decoration, for example, students may overlook the essential role of fruit in plant reproduction, or think that lettuce qualifies as a fruit, since picking a few lettuce leaves does not usually kill a lettuce plant.

Throughout a lesson, the teacher repeatedly **checks for understanding** by asking questions that call for active thinking on the part of students. One way is to require all students to respond somehow, either with an actual choral response (speaking in unison together), another way with a non-verbal signal like raising hands to indicate answers to questions. In teaching about fruits and vegetables, for example, a teacher can ask, "Here's a list of fruits and vegetables. As I point to each one, raise your hand if it's a fruit, but not if it's a vegetable." Or she can ask: "Here's a list of fruits and vegetables. Say together what each on is as I point to it; you say 'fruit' or 'vegetable'—whichever applies." Even though some students may hide their ignorance by letting more knowledgeable classmates do the responding, the general level or quality of response can still give a rough idea of how well students are understanding. These checks can be supplemented, of course, with questions addressed to individuals, or with questions to which individuals must respond briefly in writing. A teacher can ask everyone, "Give me an example of one fruit and one vegetable," and then call on individuals to answer. She can also say: "I want everyone to make a list with two columns, one listing all the fruits you can think of and the other listing all the vegetables you can think of."

As a lesson draws to a close, the teacher arranges for students to have **further independent practice**. The point of the practice is not to explore new material or ideas, but to consolidate or strengthen the recent learning. At the end of a lesson about long division, for example, the teacher can make a transition to independent practice by providing a set of additional problems similar to the ones she explained during the lesson. After working one or two with students, she can turn the rest of the task over to the students to practice on their own. But note that even though the practice is supposedly "independent," students' understanding still has be checked frequently. A long set of practice problems therefore needs to be broken up into small subsets of problems, and written or oral feedback offered periodically

What are the limits of teacher-directed instruction?

Whatever the grade level, most subjects taught in schools have at least some features, skills, or topics that benefit from direct instruction. Even subjects usually considered "creative" can benefit from a direct approach at times: to draw, sing, or write a poem, for example, requires skills that may be easier to learn if presented sequentially in small units with frequent feedback from a teacher. Research supports the usefulness of teacher-directed instruction for a variety of educational contexts when it is designed well and implemented as intended (Rosenshine & Mesister,1995; Good & Brophy, 2004). Teachers themselves also tend to support the approach in principle (Demant & Yates, 2003).

But there are limits to its usefulness. Some are the practical ones are pointed out above. Teacher-directed instruction, whatever the form, requires well-organized units of instruction in advance of when students are to learn. Such units may not always be available, and it may not be realistic to expect busy teachers to devise their own. Other limits of direct instruction have more to do with the very nature of learning. Some critics argue that organizing material on behalf of the students encourages students to be passive—an ironic and undesirable result if true (Kohn, 2000, 2006). According to this criticism, the mere fact that a curriculum or unit of study is constructed by a teacher (or other authority) makes some students think that they should not bother seeking information actively on their own, but wait for it to arrive of its own accord. In support of this argument, critics point to the fact that direct instruction approaches sometimes contradict their own premises by requiring students to do a bit of cognitive organizational work of their own. This happens, for example, when a mastery learning program provides enrichment material to faster students to work on independently; in that case the teacher may be involved in the enrichment activities only minimally.

Criticisms like these have led to additional instructional approaches that rely more fully on students to seek and organize their own learning. In the next section we discuss some of these options. As you will see, student-centered models of learning do solve certain problems of teacher-directed instruction, but they also have problems of their own.

Student-centered models of learning

Student-centered models of learning shift some of the responsibility for directing and organizing learning from the teacher to the student. Being student-centered does not mean, however, that a teacher gives up organizational and leadership responsibilities completely. It only means a relative shift in the teacher's role, toward one with more emphasis on guiding students' self-chosen directions. As we explained earlier in this chapter, teacher-directed strategies do not take over responsibility for students' learning completely; no matter how much a teacher structures or directs learning, the students still have responsibility for working and expending effort to comprehend new material. By the same token, student-centered models of learning do not mean handing over all organizational work of instruction to students. The teacher is still the most knowledgeable member of the class, and still has both the opportunity and the responsibility to guide learning in directions that are productive.

As you might suspect, therefore, teacher-directed and student-centered approaches to instruction may overlap in practice. You can see the overlap clearly, for example, in two instructional strategies commonly thought of as student-centered, *independent study* and *self-reflection*. In **independent study**, as the name implies, a student works alone a good deal of the time, consulting with a teacher only occasionally. Independent study may be student-centered in the sense that the student may be learning a topic or skill—an

exotic foreign language, for example—that is personally interesting. But the opposite may also be true: the student may be learning a topic or skill that a teacher or an official school curriculum has directed the student to learn—a basic subject for which the student is missing a credit, for example. Either way, though, the student will probably need guidance, support, and help from a teacher. In this sense even independent study always contain elements of teacher-direction.

Similarly, **self-reflection** refers to thinking about beliefs and experiences in order to clarify their personal meaning and importance. In school it can be practiced in a number of ways: for example by keeping diaries or logs of learning or reading, or by retelling stories of important experiences or incidents in a student's life, or by creating concept maps like the ones described earlier in this chapter. Whatever form it takes, self-reflection by definition happens inside a single student's mind, and in this sense is always directed by the student. Yet most research on self-reflection finds that self-reflection only works well when it involves and generates responses and interaction with other students or with a teacher (Seifert, 1999; Kuit, Reay, & Freeman, 2001). To be fully self-reflective, students need to have access to more than their existing base of knowledge and ideas—more than what they know already. In one study about students' self-reflections of cultural and racial prejudices (Gay & Kirkland, 2003), for example, the researchers found that students tended to reflect on these problems in relatively shallow ways if they worked on their own. It was not particularly effective to write about prejudice in a journal that no one read except themselves, or to describe beliefs in a class discussion in which neither the teacher nor classmates commented or challenged the beliefs. Much more effective in both cases was for the teacher to respond thoughtfully to students' reflective comments. In this sense the use of self-reflection, like independent study, required elements of teacher-direction to be successful.

How might a teacher emphasize students' responsibility for directing and organizing their own learning? The alternatives are

numerous, as they are for teacher-directed strategies, so we can only sample some of them here. We concentrate on ones that are relatively well known and used most widely, and especially on two: inquiry learning and cooperative learning.

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77. Individual styles of learning and thinking

All of us, including our students, have preferred ways of learning. Teachers often refer to these differences as **learning styles**, though this term may imply that students are more consistent across situations than is really the case. One student may like to make diagrams to help remember a reading assignment, whereas another student may prefer to write a sketchy outline instead. Yet in many cases, the students could in principle reverse the strategies and still learn the material: if coaxed (or perhaps required), the diagram-maker could take notes for a change and the note-taker could draw diagrams. Both would still learn, though neither might feel as comfortable as when using the strategies that they prefer. This reality suggests that a balanced, middle-of-the-road approach may be a teacher's best response to students' learning styles. Or put another way, it is good to support students' preferred learning strategies where possible and appropriate, but neither necessary nor desirable to do so all of the time (Loo, 2004; Stahl, 2002). Most of all, it is neither necessary nor possible to classify or label students according to seemingly fixed learning styles and then allow them to learn only according to those styles. A student may prefer to hear new material rather than see it; he may prefer for you to explain something orally, for example, rather than to see it demonstrated in a video. But he may nonetheless tolerate or sometimes even prefer to see it demonstrated. In the long run, in fact, he may learn it best by encountering the material in both ways, regardless of his habitual preferences.

That said, there is evidence that individuals, including students, do differ in how they habitually think. These differences are more specific than learning styles or preferences, and psychologists sometimes call them **cognitive styles**, meaning typical ways of

perceiving and remembering information, and typical ways of solving problems and making decisions (Zhang & Sternberg, 2006). In a style of thinking called field dependence, for example, individuals perceive patterns as a whole rather than focus on the parts of the pattern separately. In a complementary tendency, called **field independence**, individuals are more inclined to analyze overall patterns into their parts. Cognitive research from the 1940s to the present has found field dependence/independence differences to be somewhat stable for any given person across situations, though not completely so (Witkin, Moore, Goodenough, & Cox, 1977; Zhang & Sternberg, 2005). Someone who is field dependent (perceives globally or "wholistically") in one situation, tends to a modest extent to perceive things globally or wholistically in other situations. Field dependence and independence can be important in understanding students because the styles affect students' behaviors and preferences in school and classrooms. Field dependent persons tend to work better in groups, it seems, and to prefer "open-ended" fields of study like literature and history. Field *in*dependent persons, on the other hand, tend to work better alone and to prefer highly analytic studies like math and science. The differences are only a tendency, however, and there are a lot of students who contradict the trends. As with the broader notion of learning styles, the cognitive styles of field dependence and independence are useful for tailoring instruction to particular students, but their guidance is only approximate. They neither can nor should be used to "lock" students to particular modes of learning or to replace students' own expressed preferences and choices about curriculum.

Another cognitive style is **impulsivity** as compared to **reflectivity**. As the names imply, an *impulsive* cognitive style is one in which a person reacts quickly, but as a result makes comparatively more errors. A *reflective* style is the opposite: the person reacts more slowly and therefore makes fewer errors. As you might expect, the reflective style would seem better suited to many academic demands of school. Research has found that this is indeed the case for academic skills that clearly benefit from reflection, such as

mathematical problem solving or certain reading tasks (Evans, 2004). Some classroom or school-related skills, however, may actually develop better if a student is relatively impulsive. Being a good partner in a cooperative learning group, for example, may depend partly on responding spontaneously (i.e. just a bit "impulsively") to others' suggestions; and being an effective member of an athletic team may depend on *not* taking time to reflect carefully on every move that you or your team mates make.

There are two major ways to use knowledge of students' cognitive styles (Pritchard, 2005). The first and the more obvious is to build on students' existing style strengths and preferences. A student who is field independent and reflective, for example, can be encouraged to explore tasks and activities that are relatively analytic and that require relatively independent work. One who is field dependent and impulsive, on the other hand, can be encouraged and supported to try tasks and activities that are more social or spontaneous. But a second, less obvious way to use knowledge of cognitive styles is to encourage more balance in cognitive styles for students who need it. A student who *lacks* field independence, for example, may need explicit help in organizing and analyzing key academic tasks (like organizing a lab report in a science class). One who is already highly reflective may need encouragement to try ideas spontaneously, as in a creative writing lesson.

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78. Multiple intelligences

For nearly a century, educators and psychologists have debated the nature of intelligence, and more specifically whether intelligence is just one broad ability or can take more than one form. Many classical definitions of the concept have tended to define **intelligence** as a single broad ability that allows a person to solve or complete many sorts of tasks, or at least many academic tasks like reading, knowledge of vocabulary, and the solving of logical problems (Garlick, 2002). There is research evidence of such a global ability, and the idea of general intelligence often fits with society's everyday beliefs about intelligence. Partly for these reasons, an entire mini-industry has grown up around publishing tests of intelligence, academic ability, and academic achievement. Since these tests affect the work of teachers, I return to discussing them later in this book.

But there are also problems with defining intelligence as one general ability. One way of summing up the problems is to say that conceiving of intelligence as something general tends to put it beyond teachers' influence. When viewed as a single, all-purpose ability, students either have a lot of intelligence or they do not, and strengthening their intelligence becomes a major challenge, or perhaps even an impossible one (Gottfredson, 2004; Lubinski, 2004). This conclusion is troubling to some educators, especially in recent years as testing school achievements have become more common and as students have become more diverse.

But alternate views of intelligence also exist that portray intelligence as having multiple forms, whether the forms are subparts of a single broader ability or are multiple "intelligences" in their own right. For various reasons such this perspective has gained in popularity among teachers in recent years, probably because it reflects many teachers' beliefs that students cannot

simply be rated along a single scale of ability, but are fundamentally diverse (Kohn, 2004).

One of the most prominent of these models is **Howard Gardner's theory of multiple intelligences** (Gardner, 1983, 2003). Gardner proposes that there are eight different forms of intelligence, each of which functions independently of the others. (The eight intelligences are summarized in Table 1. Each person has a mix of all eight abilities—more of one and less of another—that helps to constitute that person's individual cognitive profile. Since most tasks—including most tasks in classrooms—require several forms of intelligence and can be completed in more than one way, it is possible for people with various profiles of talents to succeed on a task equally well. In writing an essay, for example, a student with high interpersonal intelligence but rather average verbal intelligence might use his or her interpersonal strength to get a lot of help and advice from classmates and the teacher. A student with the opposite profile might work well alone, but without the benefit of help from others. Both students might end up with essays that are good, but good for different reasons.

Table 1: Multiple intelligences according to Howard Gardner

Form of intelligence	Examples of activities using the intelligence
Linguistic: Verbal skill; ability to use language well	• verbal persuasion • writing a term paper skillfully
Musical: Ability to create and understand music	• singing, playing a musical instrument • composing a tune
Logical: Mathematical: logical skill; ability to reason, often using mathematics	• solving mathematical problems easily and accurately • developing and testing hypotheses
Spatial: Ability to imagine and manipulate the arrangement of objects in the environment	• completing a difficult jigsaw puzzle • assembling a complex appliance (e.g. a bicycle)
Bodily: Kinesthetic: sense of balance; coordination in use of one's body	• dancing • gymnastics
Interpersonal: Ability to discern others' nonverbal feelings and thoughts	• sensing when to be tactful • sensing a "subtext" or implied message in a person's statements
Intrapersonal: Sensitivity to one's own thoughts and feelings	• noticing complex of ambivalent feelings in oneself • identifying true motives for an action in oneself

Table 1: Multiple intelligences according to Howard Gardner

Naturalist: Sensitivity to subtle differences and patterns found in the natural environment	• identifying examples of species of plants or animals • noticing relationships among species and natural processes in the environment

Source: Gardner, 1983, 2003

As evidence for the possibility of multiple intelligences, Gardner cites descriptions of individuals with exceptional talent in one form of intelligence (for example, in playing the piano) but who are neither above nor below average in other areas. He also cites descriptions of individuals with brain damage, some of whom lose one particular form of intelligence (like the ability to talk) but retain other forms. In the opinion of many psychologists, however, the evidence for multiple intelligences is not strong enough to give up the "classical" view of general intelligence. Part of the problem is that the evidence for multiple intelligences relies primarily on anecdotes— examples or descriptions of particular individuals who illustrate the model—rather than on more widespread information or data (Eisner, 2004).

Nonetheless, whatever the status of the research evidence, the model itself can be useful as a way for teachers to think about their work. Multiple intelligences suggest the importance of diversifying instruction in order to honor and to respond to diversity in students' talents and abilities. Viewed like this, whether Gardner's classification scheme is actually accurate is probably less important than the fact there is (or may be) more than one way to be "smart." In the end, as with cognitive and learning styles, it may not be important to label students' talents or intellectual strengths. It may be more important simply to provide important learning and knowledge in several modes or styles, ways that draw on more than one possible form of intelligence or skill. A good example of this principle is your own development in learning to teach. It is well and

good to read books about teaching (like this one, perhaps), but it is even better to read books and talk with classmates and educators about teaching and getting actual experience in classrooms. The combination both invites and requires a wide range of your talents and usually proves more effective than any single type of activity, whatever your profile of cognitive styles or intellectual abilities happens to be.

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79. Measures of Intelligence

Learning Objectives

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

- Explain how intelligence tests are developed
- Describe the history of the use of IQ tests
- Describe the purposes and benefits of intelligence testing

While you're likely familiar with the term "IQ" and associate it with the idea of intelligence, what does IQ really mean? IQ stands for intelligence quotient and describes a score earned on a test designed to measure intelligence. You've already learned that there are many ways psychologists describe intelligence (or more aptly, intelligences). Similarly, IQ tests—the tools designed to measure intelligence—have been the subject of debate throughout their development and use.

When might an IQ test be used? What do we learn from the results, and how might people use this information? IQ tests are expensive to administer and must be given by a licensed psychologist. Intelligence testing has been considered both a bane and a boon for education and social policy. In this section, we will explore what intelligence tests measure, how they are scored, and how they were developed.

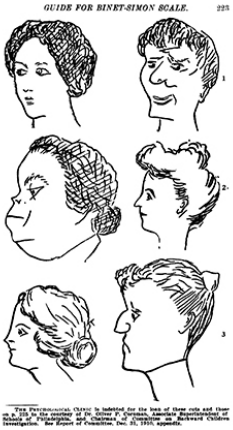
MEASURING INTELLIGENCE

It seems that the human understanding of intelligence is somewhat limited when we focus on traditional or academic-type intelligence. How then, can intelligence be measured? And when we measure intelligence, how do we ensure that we capture what we're really trying to measure (in other words, that IQ tests function as valid measures of intelligence)? In the following paragraphs, we will explore the how intelligence tests were developed and the history of their use.

The IQ test has been synonymous with intelligence for over a century. In the late 1800s, Sir Francis Galton developed the first broad test of intelligence (Flanagan & Kaufman, 2004). Although he was not a psychologist, his contributions to the concepts of intelligence testing are still felt today (Gordon, 1995). Reliable intelligence testing (you may recall from earlier chapters that reliability refers to a test's ability to produce consistent results) began in earnest during the early 1900s with a researcher named Alfred Binet ([link]). Binet was asked by the French government to develop an intelligence test to use on children to determine which ones might have difficulty in school; it included many verbally based tasks. American researchers soon realized the value of such testing. Louis Terman, a Stanford professor, modified Binet's work by standardizing the administration of the test and tested thousands of different-aged children to establish an average score for each age. As a result, the test was normed and standardized, which means that the test was administered consistently to a large enough representative sample of the population that the range of scores resulted in a bell curve (bell curves will be discussed later). Standardization means that the manner of administration, scoring, and interpretation of results is consistent. Norming involves giving a test to a large population so data can be collected comparing groups, such as age groups. The resulting data provide norms, or referential scores, by which to interpret future scores. Norms are

not expectations of what a given group *should* know but a demonstration of what that group *does* know. Norming and standardizing the test ensures that new scores are reliable. This new version of the test was called the Stanford-Binet Intelligence Scale (Terman, 1916). Remarkably, an updated version of this test is still widely used today.

(a)



(b)

French psychologist Alfred Binet helped to develop intelligence testing. (b) This page is from a 1908 version of the Binet-Simon Intelligence Scale. Children being tested were asked which face, of each pair, was prettier.

In 1939, David Wechsler, a psychologist who spent part of his career working with World War I veterans, developed a new IQ test in the United States. Wechsler combined several subtests from other intelligence tests used between 1880 and World War I. These subtests tapped into a variety of verbal and nonverbal skills, because Wechsler believed that intelligence encompassed "the global capacity of a person to act purposefully, to think rationally, and to deal effectively with his environment" (Wechsler, 1958, p. 7). He named the test the Wechsler-Bellevue Intelligence Scale (Wechsler,

1981). This combination of subtests became one of the most extensively used intelligence tests in the history of psychology. Although its name was later changed to the Wechsler Adult Intelligence Scale (WAIS) and has been revised several times, the aims of the test remain virtually unchanged since its inception (Boake, 2002). Today, there are three intelligence tests credited to Wechsler, the Wechsler Adult Intelligence Scale-fourth edition (WAIS-IV), the Wechsler Intelligence Scale for Children (WISC-V), and the Wechsler Preschool and Primary Scale of Intelligence—Revised (WPPSI-III) (Wechsler, 2002). These tests are used widely in schools and communities throughout the United States, and they are periodically normed and standardized as a means of recalibration. Interestingly, the periodic recalibrations have led to an interesting observation known as the Flynn effect. Named after James Flynn, who was among the first to describe this trend, the Flynn effect refers to the observation that each generation has a significantly higher IQ than the last. Flynn himself argues, however, that increased IQ scores do not necessarily mean that younger generations are more intelligent per se (Flynn, Shaughnessy, & Fulgham, 2012). As a part of the recalibration process, the WISC-V (which is scheduled to be released in 2014) was given to thousands of children across the country, and children taking the test today are compared with their same-age peers ([link]).

The WISC-V is composed of 10 subtests, which comprise four indices, which then render an IQ score. The four indices are Verbal Comprehension, Perceptual Reasoning, Working Memory, and Processing Speed. When the test is complete, individuals receive a score for each of the four indices and a Full Scale IQ score (Heaton, 2004). The method of scoring reflects the understanding that intelligence is comprised of multiple abilities in several cognitive realms and focuses on the mental processes that the child used to arrive at his or her answers to each test item (Heaton, 2004).

Ultimately, we are still left with the question of how valid intelligence tests are. Certainly, the most modern versions of these

tests tap into more than verbal competencies, yet the specific skills that should be assessed in IQ testing, the degree to which any test can truly measure an individual's intelligence, and the use of the results of IQ tests are still issues of debate (Gresham & Witt, 1997; Flynn, Shaughnessy, & Fulgham, 2012; Richardson, 2002; Schlinger, 2003).

What Do You Think: Intellectually Disabled Criminals and Capital Punishment

The case of *Atkins v. Virginia* was a landmark case in the United States Supreme Court. On August 16, 1996, two men, Daryl Atkins and William Jones, robbed, kidnapped, and then shot and killed Eric Nesbitt, a local airman from the U.S. Air Force. A clinical psychologist evaluated Atkins and testified at the trial that Atkins had an IQ of 59. The mean IQ score is 100. The psychologist concluded that Atkins was mildly mentally retarded.

The jury found Atkins guilty, and he was sentenced to death. Atkins and his attorneys appealed to the Supreme Court. In June 2002, the Supreme Court reversed a previous decision and ruled that executions of mentally retarded criminals are 'cruel and unusual punishments' prohibited by the Eighth Amendment. The court wrote in their decision:

> Clinical definitions of mental retardation

> require not only subaverage intellectual functioning, but also significant limitations in adaptive skills. Mentally retarded persons frequently know the difference between right and wrong and are competent to stand trial. Because of their impairments, however, by definition they have diminished capacities to understand and process information, to communicate, to abstract from mistakes and learn from experience, to engage in logical reasoning, to control impulses, and to understand others' reactions. Their deficiencies do not warrant an exemption from criminal sanctions, but diminish their personal culpability (*Atkins v. Virginia*, 2002, par. 5).

The court also decided that there was a state legislature consensus against the execution of the mentally retarded and that this consensus should stand for all of the states. The Supreme Court ruling left it up to the states to determine their own definitions of mental retardation and intellectual disability. The definitions vary among states as to who can be executed. In the Atkins case, a jury decided that because he had many contacts with his lawyers and thus was provided with intellectual stimulation, his IQ had reportedly increased, and he was now smart enough to be executed. He was given an execution date and then received a stay of execution after it was revealed that lawyers for co-defendant, William Jones, coached Jones to "produce a testimony against Mr. Atkins that did

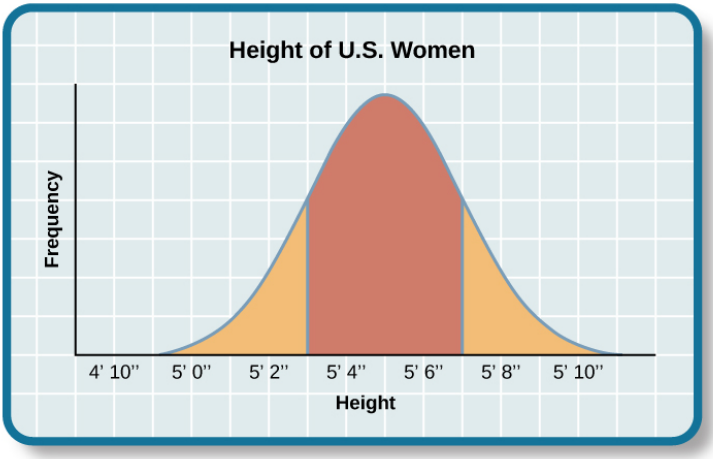
match the evidence" (Liptak, 2008). After the revelation of this misconduct, Atkins was re-sentenced to life imprisonment.

Atkins v. Virginia (2002) highlights several issues regarding society's beliefs around intelligence. In the Atkins case, the Supreme Court decided that intellectual disability *does* affect decision making and therefore should affect the nature of the punishment such criminals receive. Where, however, should the lines of intellectual disability be drawn? In May 2014, the Supreme Court ruled in a related case (*Hall v. Florida*) that IQ scores cannot be used as a final determination of a prisoner's eligibility for the death penalty (Roberts, 2014).

THE BELL CURVE

The results of intelligence tests follow the bell curve, a graph in the general shape of a bell. When the bell curve is used in psychological testing, the graph demonstrates a normal distribution of a trait, in this case, intelligence, in the human population. Many human traits naturally follow the bell curve. For example, if you lined up all your female schoolmates according to height, it is likely that a large cluster of them would be the average height for an American woman: 5'4"–5'6". This cluster would fall in the center of the bell curve, representing the average height for American women ([link]). There would be fewer women who stand closer to 4'11". The same would be true for women of above-average height: those who stand closer to 5'11". The trick to finding a bell curve in nature is to use a

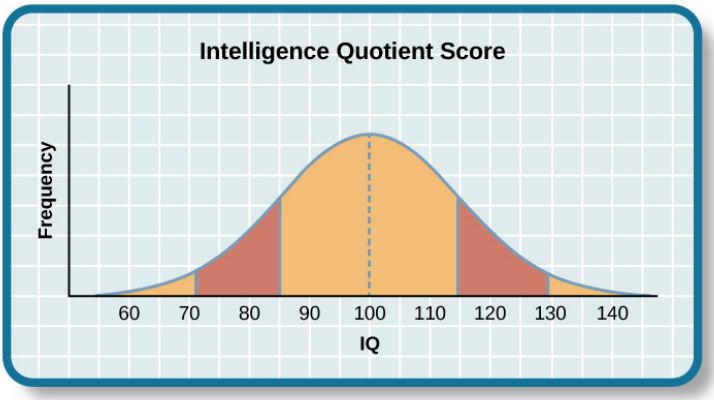
large sample size. Without a large sample size, it is less likely that the bell curve will represent the wider population. A representative sample is a subset of the population that accurately represents the general population. If, for example, you measured the height of the women in your classroom only, you might not actually have a representative sample. Perhaps the women's basketball team wanted to take this course together, and they are all in your class. Because basketball players tend to be taller than average, the women in your class may not be a good representative sample of the population of American women. But if your sample included all the women at your school, it is likely that their heights would form a natural bell curve.



Are you of below-average, average, or above-average height?

The same principles apply to intelligence tests scores. Individuals earn a score called an intelligence quotient (IQ). Over the years, different types of IQ tests have evolved, but the way scores are interpreted remains the same. The average IQ score on an IQ test is 100. Standard deviations describe how data are dispersed in a population and give context to large data sets. The bell curve uses

the standard deviation to show how all scores are dispersed from the average score ([link]). In modern IQ testing, one standard deviation is 15 points. So a score of 85 would be described as "one standard deviation below the mean." How would you describe a score of 115 and a score of 70? Any IQ score that falls within one standard deviation above and below the mean (between 85 and 115) is considered average, and 82% of the population has IQ scores in this range. An IQ score of 130 or above is considered a superior level.



The majority of people have an IQ score between 85 and 115.

Only 2.2% of the population has an IQ score below 70 (American Psychological Association [APA], 2013). A score of 70 or below indicates significant cognitive delays, major deficits in adaptive functioning, and difficulty meeting "community standards of personal independence and social responsibility" when compared to same-aged peers (APA, 2013, p. 37). An individual in this IQ range would be considered to have an intellectual disability and exhibit deficits in intellectual functioning and adaptive behavior (American Association on Intellectual and Developmental Disabilities, 2013). Formerly known as mental retardation, the accepted term now is intellectual disability, and it has four subtypes: mild, moderate,

severe, and profound ([link]). *The Diagnostic and Statistical Manual of Psychological Disorders* lists criteria for each subgroup (APA, 2013).

Characteristics of Cognitive Disorders

Intellectual Disability Subtype	Percentage of Intellectually Disabled Population	Description
Mild	85%	3rd- to 6th-grade skill level in reading, writing, and math; may be employed and live independently
Moderate	10%	Basic reading and writing skills; functional self-care skills; requires some oversight
Severe	5%	Functional self-care skills; requires oversight of daily environment and activities
Profound	<1%	May be able to communicate verbally or nonverbally; requires intensive oversight

On the other end of the intelligence spectrum are those individuals whose IQs fall into the highest ranges. Consistent with the bell curve, about 2% of the population falls into this category. People are considered gifted if they have an IQ score of 130 or higher, or superior intelligence in a particular area. Long ago, popular belief suggested that people of high intelligence were maladjusted. This idea was disproven through a groundbreaking study of gifted children. In 1921, Lewis Terman began a longitudinal study of over 1500 children with IQs over 135 (Terman, 1925). His findings showed that these children became well-educated, successful adults who were, in fact, well-adjusted (Terman & Oden, 1947). Additionally, Terman's study showed that the subjects were above average in physical build and attractiveness, dispelling an earlier popular notion that highly intelligent people were "weaklings." Some people with very high IQs elect to join Mensa, an organization dedicated to identifying, researching, and fostering intelligence. Members must

have an IQ score in the top 2% of the population, and they may be required to pass other exams in their application to join the group.

Dig Deeper: What's in a Name? Mental Retardation

In the past, individuals with IQ scores below 70 and significant adaptive and social functioning delays were diagnosed with mental retardation. When this diagnosis was first named, the title held no social stigma. In time, however, the degrading word "retard" sprang from this diagnostic term. "Retard" was frequently used as a taunt, especially among young people, until the words "mentally retarded" and "retard" became an insult. As such, the DSM-5 now labels this diagnosis as "intellectual disability." Many states once had a Department of Mental Retardation to serve those diagnosed with such cognitive delays, but most have changed their name to Department of Developmental Disabilities or something similar in language. The Social Security Administration still uses the term "mental retardation" but is considering eliminating it from its programming (Goad, 2013). Earlier in the chapter, we discussed how language affects how we think. Do you think changing the title of this department has any impact on how people regard those with developmental disabilities? Does a different name give people more dignity, and if so, how? Does it change the expectations

for those with developmental or cognitive disabilities? Why or why not?

WHY MEASURE INTELLIGENCE?

The value of IQ testing is most evident in educational or clinical settings. Children who seem to be experiencing learning difficulties or severe behavioral problems can be tested to ascertain whether the child's difficulties can be partly attributed to an IQ score that is significantly different from the mean for her age group. Without IQ testing—or another measure of intelligence—children and adults needing extra support might not be identified effectively. In addition, IQ testing is used in courts to determine whether a defendant has special or extenuating circumstances that preclude him from participating in some way in a trial. People also use IQ testing results to seek disability benefits from the Social Security Administration. While IQ tests have sometimes been used as arguments in support of insidious purposes, such as the eugenics movement (Severson, 2011), the following case study demonstrates the usefulness and benefits of IQ testing.

Candace, a 14-year-old girl experiencing problems at school, was referred for a court-ordered psychological evaluation. She was in regular education classes in ninth grade and was failing every subject. Candace had never been a stellar student but had always been passed to the next grade. Frequently, she would curse at any of her teachers who called on her in class. She also got into fights with other students and occasionally shoplifted. When she arrived for the evaluation, Candace immediately said that she hated everything about school, including the teachers, the rest of the staff, the building, and the homework. Her parents stated that they felt their

daughter was picked on, because she was of a different race than the teachers and most of the other students. When asked why she cursed at her teachers, Candace replied, "They only call on me when I don't know the answer. I don't want to say, 'I don't know' all of the time and look like an idiot in front of my friends. The teachers embarrass me." She was given a battery of tests, including an IQ test. Her score on the IQ test was 68. What does Candace's score say about her ability to excel or even succeed in regular education classes without assistance?

Summary

In this section, we learned about the history of intelligence testing and some of the challenges regarding intelligence testing. Intelligence tests began in earnest with Binet; Wechsler later developed intelligence tests that are still in use today: the WAIS-IV and WISC-V. The Bell curve shows the range of scores that encompass average intelligence as well as standard deviations.

https://www.openassessments.com/assessments/837

Self Check Questions

Critical Thinking Questions

1. Why do you think different theorists have defined intelligence in different ways?

2. Compare and contrast the benefits of the Stanford-Binet IQ test and Wechsler's IQ tests.

Personal Application Question

3. In thinking about the case of Candace described earlier, do you think that Candace benefitted or suffered as a result of consistently being passed on to the next grade?

Answers

1. Since cognitive processes are complex, ascertaining them in a measurable way is challenging. Researchers have taken different approaches to define intelligence in an attempt to comprehensively describe and measure it.

2. The Wechsler-Bellevue IQ test combined a series of subtests that tested verbal and nonverbal skills into a single IQ test in order to get a reliable, descriptive score of intelligence. While the Stanford-Binet test was normed and standardized, it focused more on verbal skills than variations in other cognitive processes.

Glossary

Flynn effect observation that each generation has a significantly higher IQ than the previous generation

intelligence quotient (also, IQ) score on a test designed to measure intelligence

norming administering a test to a large population so data can be collected to reference the normal scores for a population and its groups

representative sample subset of the population that accurately represents the general population

standard deviation measure of variability that describes the difference between a set of scores and their mean

standardization method of testing in which administration, scoring, and interpretation of results are consistent

80. The Source of Intelligence

Learning Objectives

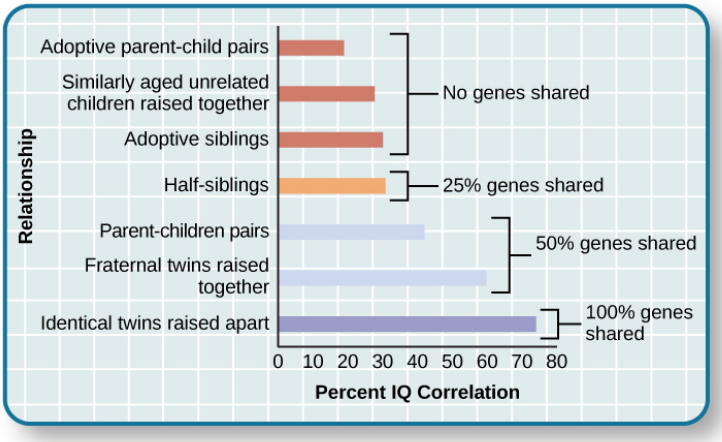
By the end of this section, you will be able to:

- Describe how genetics and environment affect intelligence
- Explain the relationship between IQ scores and socioeconomic status
- Describe the difference between a learning disability and a developmental disorder

A young girl, born of teenage parents, lives with her grandmother in rural Mississippi. They are poor—in serious poverty—but they do their best to get by with what they have. She learns to read when she is just 3 years old. As she grows older, she longs to live with her mother, who now resides in Wisconsin. She moves there at the age of 6 years. At 9 years of age, she is raped. During the next several years, several different male relatives repeatedly molest her. Her life unravels. She turns to drugs and sex to fill the deep, lonely void inside her. Her mother then sends her to Nashville to live with her father, who imposes strict behavioral expectations upon her, and over time, her wild life settles once again. She begins to experience success in school, and at 19 years old, becomes the youngest and first African-American female news anchor ("Dates and Events," n.d.). The woman—Oprah Winfrey—goes on to become a media giant known for both her intelligence and her empathy.

HIGH INTELLIGENCE: NATURE OR NURTURE?

Where does high intelligence come from? Some researchers believe that intelligence is a trait inherited from a person's parents. Scientists who research this topic typically use twin studies to determine the heritability of intelligence. The Minnesota Study of Twins Reared Apart is one of the most well-known twin studies. In this investigation, researchers found that identical twins raised together and identical twins raised apart exhibit a higher correlation between their IQ scores than siblings or fraternal twins raised together (Bouchard, Lykken, McGue, Segal, & Tellegen, 1990). The findings from this study reveal a genetic component to intelligence ([link]). At the same time, other psychologists believe that intelligence is shaped by a child's developmental environment. If parents were to provide their children with intellectual stimuli from before they are born, it is likely that they would absorb the benefits of that stimulation, and it would be reflected in intelligence levels.



The correlations of IQs of unrelated versus related persons reared apart or together suggest a genetic component to intelligence.

The reality is that aspects of each idea are probably correct. In fact, one study suggests that although genetics seem to be in control of the level of intelligence, the environmental influences provide both stability and change to trigger manifestation of cognitive abilities (Bartels, Rietveld, Van Baal, & Boomsma, 2002). Certainly, there are behaviors that support the development of intelligence, but the genetic component of high intelligence should not be ignored. As with all heritable traits, however, it is not always possible to isolate how and when high intelligence is passed on to the next generation.

Range of Reaction is the theory that each person responds to the environment in a unique way based on his or her genetic makeup. According to this idea, your genetic potential is a fixed quantity, but whether you reach your full intellectual potential is dependent upon the environmental stimulation you experience, especially in childhood. Think about this scenario: A couple adopts a child who has average genetic intellectual potential. They raise her in an extremely stimulating environment. What will happen to the couple's new daughter? It is likely that the stimulating environment will improve her intellectual outcomes over the course of her life. But what happens if this experiment is reversed? If a child with an extremely strong genetic background is placed in an environment that does not stimulate him: What happens? Interestingly, according to a longitudinal study of highly gifted individuals, it was found that "the two extremes of optimal and pathological experience are both represented disproportionately in the backgrounds of creative individuals"; however, those who experienced supportive family environments were more likely to report being happy (Csikszentmihalyi & Csikszentmihalyi, 1993, p. 187).

Another challenge to determining origins of high intelligence is the confounding nature of our human social structures. It is troubling to note that some ethnic groups perform better on IQ tests than others—and it is likely that the results do not have much to do with the quality of each ethnic group's intellect. The same is true for socioeconomic status. Children who live in poverty

experience more pervasive, daily stress than children who do not worry about the basic needs of safety, shelter, and food. These worries can negatively affect how the brain functions and develops, causing a dip in IQ scores. Mark Kishiyama and his colleagues determined that children living in poverty demonstrated reduced prefrontal brain functioning comparable to children with damage to the lateral prefrontal cortex (Kishyama, Boyce, Jimenez, Perry, & Knight, 2009).

The debate around the foundations and influences on intelligence exploded in 1969, when an educational psychologist named Arthur Jensen published the article "How Much Can We Boost I.Q. and Achievement" in the *Harvard Educational Review*. Jensen had administered IQ tests to diverse groups of students, and his results led him to the conclusion that IQ is determined by genetics. He also posited that intelligence was made up of two types of abilities: Level I and Level II. In his theory, Level I is responsible for rote memorization, whereas Level II is responsible for conceptual and analytical abilities. According to his findings, Level I remained consistent among the human race. Level II, however, exhibited differences among ethnic groups (Modgil & Routledge, 1987). Jensen's most controversial conclusion was that Level II intelligence is prevalent among Asians, then Caucasians, then African Americans. Robert Williams was among those who called out racial bias in Jensen's results (Williams, 1970).

Obviously, Jensen's interpretation of his own data caused an intense response in a nation that continued to grapple with the effects of racism (Fox, 2012). However, Jensen's ideas were not solitary or unique; rather, they represented one of many examples of psychologists asserting racial differences in IQ and cognitive ability. In fact, Rushton and Jensen (2005) reviewed three decades worth of research on the relationship between race and cognitive ability. Jensen's belief in the inherited nature of intelligence and the validity of the IQ test to be the truest measure of intelligence are at the core of his conclusions. If, however, you believe that intelligence is more than Levels I and II, or that IQ tests do not

control for socioeconomic and cultural differences among people, then perhaps you can dismiss Jensen's conclusions as a single window that looks out on the complicated and varied landscape of human intelligence.

In a related story, parents of African American students filed a case against the State of California in 1979, because they believed that the testing method used to identify students with learning disabilities was culturally unfair as the tests were normed and standardized using white children (*Larry P. v. Riles*). The testing method used by the state disproportionately identified African American children as mentally retarded. This resulted in many students being incorrectly classified as "mentally retarded." According to a summary of the case, *Larry P. v. Riles*:

> In violation of Title VI of the Civil Rights Act of 1964, the Rehabilitation Act of 1973, and the Education for All Handicapped Children Act of 1975, defendants have utilized standardized intelligence tests that are racially and culturally biased, have a discriminatory impact against black children, and have not been validated for the purpose of essentially permanent placements of black children into educationally dead-end, isolated, and stigmatizing classes for the so-called educable mentally retarded. Further, these federal laws have been violated by defendants' general use of placement mechanisms that, taken together, have not been validated and result in a large over-representation of black children in the special E.M.R. classes. (*Larry P. v. Riles*, par. 6)

Once again, the limitations of intelligence testing were revealed.

WHAT ARE LEARNING DISABILITIES?

Learning disabilities are cognitive disorders that affect different

areas of cognition, particularly language or reading. It should be pointed out that learning disabilities are not the same thing as intellectual disabilities. Learning disabilities are considered specific neurological impairments rather than global intellectual or developmental disabilities. A person with a language disability has difficulty understanding or using spoken language, whereas someone with a reading disability, such as dyslexia, has difficulty processing what he or she is reading.

Often, learning disabilities are not recognized until a child reaches school age. One confounding aspect of learning disabilities is that they often affect children with average to above-average intelligence. At the same time, learning disabilities tend to exhibit comorbidity with other disorders, like attention-deficit hyperactivity disorder (ADHD). Anywhere between 30–70% of individuals with diagnosed cases of ADHD also have some sort of learning disability (Riccio, Gonzales, & Hynd, 1994). Let's take a look at two examples of common learning disabilities: dysgraphia and dyslexia.

Dysgraphia

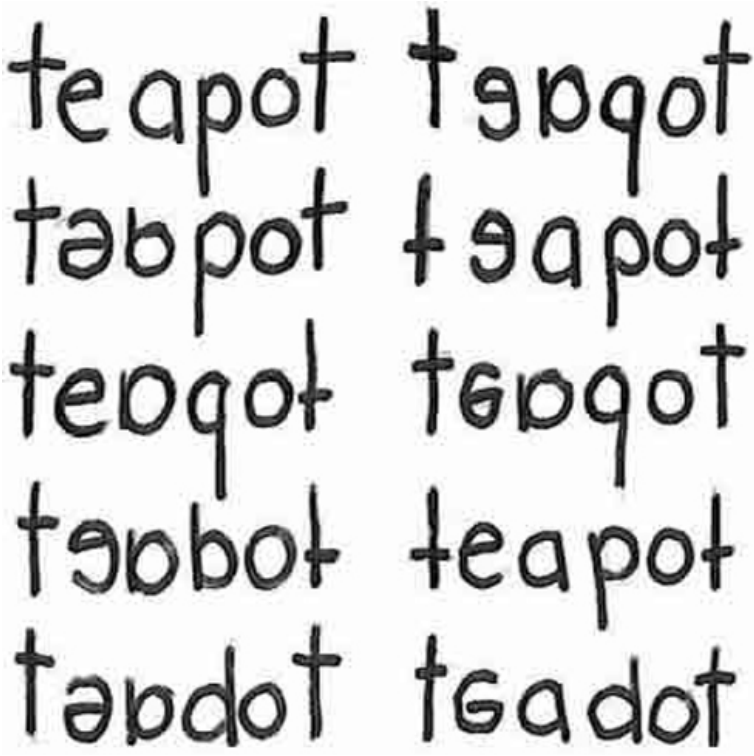
Children with dysgraphia have a learning disability that results in a struggle to write legibly. The physical task of writing with a pen and paper is extremely challenging for the person. These children often have extreme difficulty putting their thoughts down on paper (Smits-Engelsman & Van Galen, 1997). This difficulty is inconsistent with a person's IQ. That is, based on the child's IQ and/or abilities in other areas, a child with dysgraphia should be able to write, but can't. Children with dysgraphia may also have problems with spatial abilities.

Students with dysgraphia need academic accommodations to help them succeed in school. These accommodations can provide students with alternative assessment opportunities to demonstrate

what they know (Barton, 2003). For example, a student with dysgraphia might be permitted to take an oral exam rather than a traditional paper-and-pencil test. Treatment is usually provided by an occupational therapist, although there is some question as to how effective such treatment is (Zwicker, 2005).

Dyslexia

Dyslexia is the most common learning disability in children. An individual with dyslexia exhibits an inability to correctly process letters. The neurological mechanism for sound processing does not work properly in someone with dyslexia. As a result, dyslexic children may not understand sound-letter correspondence. A child with dyslexia may mix up letters within words and sentences—letter reversals, such as those shown in [link], are a hallmark of this learning disability—or skip whole words while reading. A dyslexic child may have difficulty spelling words correctly while writing. Because of the disordered way that the brain processes letters and sound, learning to read is a frustrating experience. Some dyslexic individuals cope by memorizing the shapes of most words, but they never actually learn to read (Berninger, 2008).



These written words show variations of the word "teapot" as written by individuals with dyslexia.

Summary

Genetics and environment affect intelligence and the challenges of certain learning disabilities. The intelligence levels of all individuals seem to benefit from rich stimulation in their early environments. Highly intelligent individuals, however, may have a built-in resiliency that allows them to overcome difficult obstacles in their upbringing. Learning disabilities can cause major challenges for children who are learning to read and write. Unlike developmental

disabilities, learning disabilities are strictly neurological in nature and are not related to intelligence levels. Students with dyslexia, for example, may have extreme difficulty learning to read, but their intelligence levels are typically average or above average.

https://www.openassessments.com/assessments/838

Self Check Questions

Critical Thinking Questions

1. What evidence exists for a genetic component to an individual's IQ?

2. Describe the relationship between learning disabilities and intellectual disabilities to intelligence.

Personal Application Question

3. Do you believe your level of intelligence was improved because of the stimuli in your childhood environment? Why or why not?

Answers

1. Twin studies are one strong indication that IQ has a genetic component. Another indication is anecdotal evidence in the form of stories about highly intelligent individuals who come from difficult backgrounds yet still become highly successful adults.

2. Learning disabilities are specific neurological problems within the brain and are separate from intelligence. Intellectual disabilities are pervasive and related to intelligence.

Glossary

dysgraphia learning disability that causes extreme difficulty in writing legibly

dyslexia common learning disability in which letters are not processed properly by the brain

range of reaction each person's response to the environment is unique based on his or her genetic make-up

PART XV

MODULE 13: FRAMEWORKS FOR MATURATION

81. Social and Personality Development in Childhood

Childhood social and personality development emerges through the interaction of social influences, biological maturation, and the child's representations of the social world and the self. This interaction is illustrated in a discussion of the influence of significant relationships, the development of social understanding, the growth of personality, and the development of social and emotional competence in childhood.

Learning Objectives

- Provide specific examples of how the interaction of social experience, biological maturation, and the child's representations of experience and the self provide the basis for growth in social and personality development.
- Describe the significant contributions of parent–child and peer relationships to the development of social skills and personality in childhood.
- Explain how achievements in social understanding occur in childhood. Moreover, do scientists believe that infants and young children are egocentric?
- Describe the association of temperament with personality development.
- Explain what is "social and emotional competence" and provide some examples of how it develops in childhood.

Introduction

"How have I become the kind of person I am today?" Every adult ponders this question from time to time. The answers that readily come to mind include the influences of parents, peers, temperament, a moral compass, a strong sense of self, and sometimes critical life experiences such as parental divorce. Social and personality development encompasses these and many other influences on the growth of the person. In addition, it addresses questions that are at the heart of understanding how we develop as unique people. How much are we products of nature or nurture? How enduring are the influences of early experiences? The study of social and personality development offers perspective on these and other issues, often by showing how complex and multifaceted are the influences on developing children, and thus the intricate processes that have made you the person you are today (Thompson, 2006a).

Humans are inherently social creatures. Mostly, we work, play, and live together in groups. [Image: The Daring Librarian, https://goo.gl/LmA2pS, CC BY-NC-SA 2.0, https://goo.gl/Toc0ZF]

Understanding social and personality development requires looking at children from three perspectives that interact to shape development. The first is the social context in which each child lives, especially the relationships that provide security, guidance, and knowledge. The second is biological maturation that supports developing social and emotional competencies and underlies temperamental individuality. The third is children's developing representations of themselves and the social world. Social and personality development is best understood as the continuous interaction between these social, biological, and representational aspects of psychological development.

Relationships

This interaction can be observed in the development of the earliest relationships between infants and their parents in the first year. Virtually all infants living in normal circumstances develop strong emotional attachments to those who care for them. Psychologists believe that the development of these attachments is as biologically natural as learning to walk and not simply a byproduct of the parents' provision of food or warmth. Rather, attachments have evolved in humans because they promote children's motivation to stay close to those who care for them and, as a consequence, to benefit from the learning, security, guidance, warmth, and affirmation that close relationships provide (Cassidy, 2008).

One of the first and most important relationships is between mothers and infants. The quality of this relationship has an effect on later psychological and social development. [Image: Premnath Thirumalaisamy, https://goo.gl/66BROf, CC BY-NC 2.0, https://goo.gl/FIlc2e]

Although nearly all infants develop emotional attachments to their caregivers–parents, relatives, nannies– their sense of security in those attachments varies. Infants become *securely* attached when their parents respond sensitively to them, reinforcing the infants' confidence that their parents will provide support when needed. Infants become *insecurely* attached when care is inconsistent or neglectful; these infants tend to respond avoidantly, resistantly, or in a disorganized manner (Belsky & Pasco Fearon, 2008). Such insecure attachments are not necessarily the result of deliberately bad parenting but are often a byproduct of circumstances. For example, an overworked single mother may find herself overstressed and fatigued at the end of the day, making fully-involved childcare very difficult. In other cases, some parents are

simply poorly emotionally equipped to take on the responsibility of caring for a child.

The different behaviors of securely- and insecurely-attached infants can be observed especially when the infant needs the caregiver's support. To assess the nature of attachment, researchers use a standard laboratory procedure called the "Strange Situation," which involves brief separations from the caregiver (e.g., mother) (Solomon & George, 2008). In the Strange Situation, the caregiver is instructed to leave the child to play alone in a room for a short time, then return and greet the child while researchers observe the child's response. Depending on the child's level of attachment, he or she may reject the parent, cling to the parent, or simply welcome the parent—or, in some instances, react with an agitated combination of responses.

Infants can be securely or insecurely attached with mothers, fathers, and other regular caregivers, and they can differ in their security with different people. The security of attachment is an important cornerstone of social and personality development, because infants and young children who are securely attached have been found to develop stronger friendships with peers, more advanced emotional understanding and early conscience development, and more positive self-concepts, compared with insecurely attached children (Thompson, 2008). This is consistent with attachment theory's premise that experiences of care, resulting in secure or insecure attachments, shape young children's developing concepts of the self, as well as what people are like, and how to interact with them.

As children mature, parent-child relationships naturally change. Preschool and grade-school children are more capable, have their own preferences, and sometimes refuse or seek to compromise with parental expectations. This can lead to greater parent-child conflict, and how conflict is managed by parents further shapes the quality of parent-child relationships. In general, children develop greater competence and self-confidence when parents have high (but reasonable) expectations for children's behavior, communicate

well with them, are warm and responsive, and use reasoning (rather than coercion) as preferred responses to children's misbehavior. This kind of parenting style has been described as authoritative (Baumrind, 2013). Authoritative parents are supportive and show interest in their kids' activities but are not overbearing and allow them to make constructive mistakes. By contrast, some less-constructive parent-child relationships result from authoritarian, uninvolved, or permissive parenting styles (see Table 1).

		Expectations/Control	
		Low	High
Warmth/ Responsiveness	Low	uninvolved	authoritarian
	High	permissive	authoritative

Table 1: Comparison of Four Parenting Styles

Parental roles in relation to their children change in other ways, too. Parents increasingly become mediators (or gatekeepers) of their children's involvement with peers and activities outside the family. Their communication and practice of values contributes to children's academic achievement, moral development, and activity preferences. As children reach adolescence, the parent-child relationship increasingly becomes one of "coregulation," in which both the parent(s) and the child recognizes the child's growing competence and autonomy, and together they rebalance authority relations. We often see evidence of this as parents start accommodating their teenage kids' sense of independence by allowing them to get cars, jobs, attend parties, and stay out later.

Family relationships are significantly affected by conditions outside the home. For instance, the Family Stress Model describes how financial difficulties are associated with parents' depressed

moods, which in turn lead to marital problems and poor parenting that contributes to poorer child adjustment (Conger, Conger, & Martin, 2010). Within the home, parental marital difficulty or divorce affects more than half the children growing up today in the United States. Divorce is typically associated with economic stresses for children and parents, the renegotiation of parent-child relationships (with one parent typically as primary custodian and the other assuming a visiting relationship), and many other significant adjustments for children. Divorce is often regarded by children as a sad turning point in their lives, although for most it is not associated with long-term problems of adjustment (Emery, 1999).

Peer Relationships

Peer relationships are particularly important for children. They can be supportive but also challenging. Peer rejection may lead to behavioral problems later in life. [Image: Twentyfour Students, https://goo.gl/3IS2gV, CC BY-SA 2.0, https://goo.gl/jSSrcO]

Parent-child relationships are not the only significant relationships in a child's life. Peer relationships are also important. Social interaction with another child who is similar in age, skills, and knowledge provokes the development of many social skills that are valuable for the rest of life (Bukowski, Buhrmester, & Underwood, 2011). In peer relationships, children learn how to initiate and maintain social interactions with other children. They learn skills for managing conflict, such as turn-taking, compromise, and bargaining. Play also involves the mutual, sometimes complex, coordination of goals, actions, and understanding. For example, as infants, children get their first encounter with sharing (of each other's toys); during pretend play as preschoolers they create narratives together, choose roles, and collaborate to act out their stories; and in primary school, they may join a sports team, learning to work together and support each other emotionally and strategically toward a common goal. Through these experiences, children develop friendships that provide additional sources of security and support to those provided by their parents.

However, peer relationships can be challenging as well as supportive (Rubin, Coplan, Chen, Bowker, & McDonald, 2011). Being accepted by other children is an important source of affirmation and self-esteem, but peer rejection can foreshadow later behavior problems (especially when children are rejected due to aggressive behavior). With increasing age, children confront the challenges of bullying, peer victimization, and managing conformity pressures. Social comparison with peers is an important means by which children evaluate their skills, knowledge, and personal qualities, but it may cause them to feel that they do not measure up well against others. For example, a boy who is not athletic may feel unworthy of his football-playing peers and revert to shy behavior, isolating himself and avoiding conversation. Conversely, an athlete who doesn't "get" Shakespeare may feel embarrassed and avoid reading altogether. Also, with the approach of adolescence, peer relationships become focused on psychological intimacy, involving personal disclosure, vulnerability, and loyalty (or its

betrayal)—which significantly affects a child's outlook on the world. Each of these aspects of peer relationships requires developing very different social and emotional skills than those that emerge in parent-child relationships. They also illustrate the many ways that peer relationships influence the growth of personality and self-concept.

Social Understanding

As we have seen, children's experience of relationships at home and the peer group contributes to an expanding repertoire of social and emotional skills and also to broadened social understanding. In these relationships, children develop expectations for specific people (leading, for example, to secure or insecure attachments to parents), understanding of how to interact with adults and peers, and developing self-concept based on how others respond to them. These relationships are also significant forums for emotional development.

Remarkably, young children begin developing social understanding very early in life. Before the end of the first year, infants are aware that other people have perceptions, feelings, and other mental states that affect their behavior, and which are different from the child's own mental states. This can be readily observed in a process called social referencing, in which an infant looks to the mother's face when confronted with an unfamiliar person or situation (Feinman, 1992). If the mother looks calm and reassuring, the infant responds positively as if the situation is safe. If the mother looks fearful or distressed, the infant is likely to respond with wariness or distress because the mother's expression signals danger. In a remarkably insightful manner, therefore, infants show an awareness that even though they are uncertain about the unfamiliar situation, their mother is not, and that by "reading" the

emotion in her face, infants can learn about whether the circumstance is safe or dangerous, and how to respond.

Although developmental scientists used to believe that infants are egocentric—that is, focused on their own perceptions and experience—they now realize that the opposite is true. Infants are aware at an early stage that people have different mental states, and this motivates them to try to figure out what others are feeling, intending, wanting, and thinking, and how these mental states affect their behavior. They are beginning, in other words, to develop a theory of mind, and although their understanding of mental states begins very simply, it rapidly expands (Wellman, 2011). For example, if an 18-month-old watches an adult try repeatedly to drop a necklace into a cup but inexplicably fail each time, they will immediately put the necklace into the cup themselves—thus completing what the adult intended, but failed, to do. In doing so, they reveal their awareness of the intentions underlying the adult's behavior (Meltzoff, 1995). Carefully designed experimental studies show that by late in the preschool years, young children understand that another's beliefs can be mistaken rather than correct, that memories can affect how you feel, and that one's emotions can be hidden from others (Wellman, 2011). Social understanding grows significantly as children's theory of mind develops.

How do these achievements in social understanding occur? One answer is that young children are remarkably sensitive observers of other people, making connections between their emotional expressions, words, and behavior to derive simple inferences about mental states (e.g., concluding, for example, that what Mommy is looking at is in her mind) (Gopnik, Meltzoff, & Kuhl, 2001). This is especially likely to occur in relationships with people whom the child knows well, consistent with the ideas of attachment theory discussed above. Growing language skills give young children words with which to represent these mental states (e.g., "mad," "wants") and talk about them with others. Thus in conversation with their parents about everyday experiences, children learn much about people's mental states from how adults talk about them ("Your sister

was sad because she thought Daddy was coming home.") (Thompson, 2006b). Developing social understanding is, in other words, based on children's everyday interactions with others and their careful interpretations of what they see and hear. There are also some scientists who believe that infants are biologically prepared to perceive people in a special way, as organisms with an internal mental life, and this facilitates their interpretation of people's behavior with reference to those mental states (Leslie, 1994).

Personality

Although a child's temperament is partly determined by genetics, environmental influences also contribute to shaping personality. Positive personality development is supported by a "good fit" between a child's natural temperament, environment and experiences. [Image: Thomas Hawk, https://goo.gl/2So40O, CC BY-NC 2.0, https://goo.gl/FIlc2e]

Parents look into the faces of their newborn infants and wonder, "What kind of person will this child will become?" They scrutinize their baby's preferences, characteristics, and responses for clues of a developing personality. They are quite right to do so, because temperament is a foundation for personality growth. But temperament (defined as early-emerging differences in

reactivity and self-regulation) is not the whole story. Although temperament is biologically based, it interacts with the influence of experience from the moment of birth (if not before) to shape personality (Rothbart, 2011). Temperamental dispositions are affected, for example, by the support level of parental care. More generally, personality is shaped by the goodness of fit between the child's temperamental qualities and characteristics of the environment (Chess & Thomas, 1999). For example, an adventurous child whose parents regularly take her on weekend hiking and fishing trips would be a good "fit" to her lifestyle, supporting personality growth. Personality is the result, therefore, of the continuous interplay between biological disposition and experience, as is true for many other aspects of social and personality development.

Personality develops from temperament in other ways (Thompson, Winer, & Goodvin, 2010). As children mature biologically, temperamental characteristics emerge and change over time. A newborn is not capable of much self-control, but as brain-based capacities for self-control advance, temperamental changes in self-regulation become more apparent. For example, a newborn who cries frequently doesn't necessarily have a grumpy personality; over time, with sufficient parental support and increased sense of security, the child might be less likely to cry.

In addition, personality is made up of many other features besides temperament. Children's developing self-concept, their motivations to achieve or to socialize, their values and goals, their coping styles, their sense of responsibility and conscientiousness, and many other qualities are encompassed into personality. These qualities are influenced by biological dispositions, but even more by the child's experiences with others, particularly in close relationships, that guide the growth of individual characteristics.

Indeed, personality development begins with the biological foundations of temperament but becomes increasingly elaborated, extended, and refined over time. The newborn that parents gazed upon thus becomes an adult with a personality of depth and nuance.

Social and Emotional Competence

Social and personality development is built from the social, biological, and representational influences discussed above. These influences result in important developmental outcomes that matter to children, parents, and society: a young adult's capacity to engage in socially constructive actions (helping, caring, sharing with others), to curb hostile or aggressive impulses, to live according to meaningful moral values, to develop a healthy identity and sense of self, and to develop talents and achieve success in using them. These are some of the developmental outcomes that denote social and emotional competence.

These achievements of social and personality development derive from the interaction of many social, biological, and representational influences. Consider, for example, the development of conscience, which is an early foundation for moral development. Conscience consists of the cognitive, emotional, and social influences that cause young children to create and act consistently with internal standards of conduct (Kochanska, 2002). Conscience emerges from young children's experiences with parents, particularly in the development of a mutually responsive relationship that motivates young children to respond constructively to the parents' requests and expectations. Biologically based temperament is involved, as some children are temperamentally more capable of motivated self-regulation (a quality called effortful control) than are others, while some children are dispositionally more prone to the fear and anxiety that parental disapproval can evoke. Conscience development grows through a good fit between the child's temperamental qualities and how parents communicate and reinforce behavioral expectations. Moreover, as an illustration of the interaction of genes and experience, one research group found that young children with a particular gene allele (the 5-HTTLPR) were low on measures of conscience development when they had previously experienced

unresponsive maternal care, but children with the same allele growing up with responsive care showed strong later performance on conscience measures (Kochanska, Kim, Barry, & Philibert, 2011).

Conscience development also expands as young children begin to represent moral values and think of themselves as moral beings. By the end of the preschool years, for example, young children develop a "moral self" by which they think of themselves as people who want to do the right thing, who feel badly after misbehaving, and who feel uncomfortable when others misbehave. In the development of conscience, young children become more socially and emotionally competent in a manner that provides a foundation for later moral conduct (Thompson, 2012).

Social influences such as cultural norms impact children's interests, dress, style of speech and even life aspirations. [Image: Amanda Westmont, https://goo.gl/ntS5qx, CC BY-NC-SA 2.0, https://goo.gl/Toc0ZF]

The development of gender and gender identity is likewise an interaction among social, biological, and representational influences (Ruble, Martin, & Berenbaum, 2006). Young children learn about gender from parents, peers, and others in society, and

develop their own conceptions of the attributes associated with maleness or femaleness (called gender schemas). They also negotiate biological transitions (such as puberty) that cause their sense of themselves and their sexual identity to mature.

Each of these examples of the growth of social and emotional competence illustrates not only the interaction of social, biological, and representational influences, but also how their development unfolds over an extended period. Early influences are important, but not determinative, because the capabilities required for mature moral conduct, gender identity, and other outcomes continue to develop throughout childhood, adolescence, and even the adult years.

Conclusion

As the preceding sentence suggests, social and personality development continues through adolescence and the adult years, and it is influenced by the same constellation of social, biological, and representational influences discussed for childhood. Changing social relationships and roles, biological maturation and (much later) decline, and how the individual represents experience and the self continue to form the bases for development throughout life. In this respect, when an adult looks forward rather than retrospectively to ask, "what kind of person am I becoming?"—a similarly fascinating, complex, multifaceted interaction of developmental processes lies ahead.

Outside Resources

Web: Center for the Developing Child, Harvard University

http://developingchild.harvard.edu

Web: Collaborative for Academic, Social, and Emotional Learning
http://casel.org

Discussion Questions

1. If parent–child relationships naturally change as the child matures, would you expect that the security of attachment might also change over time? What reasons would account for your expectation?
2. In what ways does a child's developing theory of mind resemble how scientists create, refine, and use theories in their work? In other words, would it be appropriate to think of children as informal scientists in their development of social understanding?
3. If there is a poor goodness of fit between a child's temperament and characteristics of parental care, what can be done to create a better match? Provide a specific example of how this might occur.
4. What are the contributions that parents offer to the development of social and emotional competence in children? Answer this question again with respect to peer contributions.

Vocabulary

Authoritative
A parenting style characterized by high (but reasonable) expectations for children's behavior, good communication, warmth and nurturance, and the use of reasoning (rather than coercion) as preferred responses to children's misbehavior.

Conscience
The cognitive, emotional, and social influences that cause

young children to create and act consistently with internal standards of conduct.

Effortful control

A temperament quality that enables children to be more successful in motivated self-regulation.

Family Stress Model

A description of the negative effects of family financial difficulty on child adjustment through the effects of economic stress on parents' depressed mood, increased marital problems, and poor parenting.

Gender schemas

Organized beliefs and expectations about maleness and femaleness that guide children's thinking about gender.

Goodness of fit

The match or synchrony between a child's temperament and characteristics of parental care that contributes to positive or negative personality development. A good "fit" means that parents have accommodated to the child's temperamental attributes, and this contributes to positive personality growth and better adjustment.

Security of attachment

An infant's confidence in the sensitivity and responsiveness of a caregiver, especially when he or she is needed. Infants can be securely attached or insecurely attached.

Social referencing

The process by which one individual consults another's emotional expressions to determine how to evaluate and respond to circumstances that are ambiguous or uncertain.

Temperament

Early emerging differences in reactivity and self-regulation, which constitutes a foundation for personality development.

Theory of mind

Children's growing understanding of the mental states that affect people's behavior.

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82. Relationships and Families in Adulthood

Several theories examine how interpersonal relationships form and develop during adulthood.

LEARNING OBJECTIVE

- Summarize Levinger's and Knapp's theories of relational development in adulthood

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KEY POINTS

- An interpersonal relationship is a strong, deep, or close association or acquaintanceship between two or morepeople that may range from brief to enduring in duration.
- Interpersonal relationships are dynamic systems that change continuously during their existence. Like living organisms, relationships have a beginning, a lifespan, and an end.
- One of the most influential models of relationship development was proposed by psychologist George Levinger. His model consists of five stages: acquaintanceship, buildup, continuation, deterioration, and termination.
- M. L. Knapp developed a model of relational development,

consisting of two main stages: the coming-together stage and coming-apart stage.
    - Coming together consists of five phases—initiating, experimentation, intensifying, integration, and bonding. Similarly, coming apart consists of differentiating, circumscribing, stagnation, avoidance, and termination.

TERMS

- interpersonalExisting between two or more people.
- heterosexualSexually attracted to members of the opposite sex.

Interpersonal Relationships in Adulthood

Positive relationships with significant others in our adult years have been found to contribute to a state of well-being (Ryff & Singer, 2009). Most adults in the United States identify themselves through their relationships with family—particularly with spouses, children, and parents. An interpersonal relationship is a strong, deep, or close association or acquaintanceship between two or more people that may range from brief to enduring in duration. Like people, relationships change and grow; they may either improve or dissipate over time. The association between two people can be based on various factors—love, solidarity, business, or any other context that requires two (or more) people to interact.

image

A Nepali Hindu couple in a marriage ceremony

Interpersonal relationships take many forms in many different cultures.

Interpersonal relationships are dynamic systems that change continuously during their existence. Like living organisms, relationships have a beginning, a lifespan, and an end. They tend to grow and improve gradually as people get to know each other and become closer emotionally, or they gradually deteriorate as people drift apart.

Levinger's Model of Relationships

One of the most influential models of relationship development was proposed by psychologist George Levinger. This model was formulated to describe heterosexual, adult romantic relationships, but it has been applied to other kinds of interpersonal relationships since then. According to the model, the natural development of a relationship follows five stages:

1. *Acquaintance and Acquaintanceship*: Becoming acquainted depends on previous relationships, physical proximity, first impressions, and a variety of other factors. If two people begin to like each other, continued interactions may lead to the next stage, but acquaintance can continue indefinitely. Another example is association.
2. *Buildup*: During this stage, people begin to trust and care about each other. The need for intimacy, compatibility, and such filtering agents as common background and goals will influence whether or not interaction continues.
3. *Continuation*: This stage follows a mutual commitment to strong and close long-term friendships, romantic relationship,

or even marriage. It is generally a long, relatively stable period. Nevertheless, continued growth and development will occur during this time. Mutual trust is important for sustaining the relationship.

4. *Deterioration*: Not all relationships deteriorate, but those that do tend to show signs of trouble. Boredom, resentment, and dissatisfaction may occur. Individuals may communicate less and avoid self-disclosure. Loss of trust and betrayals may take place as the downward spiral continues, eventually ending the relationship. Alternately, the participants may find some way to resolve the problems and reestablish trust.
5. *Termination*: The final stage marks the end of the relationship, either by breakup, death, or spatial separation and severing all existing ties of either friendship or romantic love.

Knapp's Theory of Relational Development

Another theory, developed by M. L. Knapp, is known as the model of relational development. This theory consists of two main stages, each with several parts. The first stage is known as the *coming together* phase, and the second stage is known as the *coming apart* phase.

Coming Together

Coming together consists of five phases—*initiating*, *experimentation*, *intensifying*, *integration*, and *bonding*.

1. During *initiating*, first impressions are made; physical factors play a large role in this phase. People often want to portray themselves as easy to talk to, friendly, and open to discussion.

This phase tends to be superficial as people are trying to make a good first impression.
2. During *experimentation*, the two people attempt to find some common ground between each other's lives, such as common interests and hobbies. People start to open up more and ask more personal questions as they get to know one another.
3. During the *intensifying* phase, people open themselves up fully in the hope of being accepted by the potential mate. During this phase, people may reveal secrets about themselves or others in order to test the trust level of potential partners.
4. The *integration* phase involves people merging their lives together and solidifying a relationship status.
5. Finally, during the *bonding* phase, people recognize a commitment to one another (traditionally through marriage, though many alternative forms of commitment exist) and the relationship lasts until death, breakup, or divorce.

Coming Apart

Coming apart consists of five stages as well—*differentiating*, *circumscribing*, *stagnation*, *avoidance*, and *termination.*

1. *Differentiation* involves focusing more on differences rather than similarities. This can lead to an increasing emotional distance between the parties involved.
2. During *circumscribing*, the primary focus of the relationship shifts from differences to setting limits and boundaries on communication between the two people. This further pushes two people apart.
3. *Stagnation* is when two people have reached a "stand-off" phase—nothing changes and neither party is willing to change.
4. *Avoidance* occurs when people engage in limited communication and take steps to distance themselves from

one another.

5. Finally, during *termination*, the relationship is ended.

83. Teaching is different from in the past

In the past decade or two teaching has changed significantly, so much in fact that schools may not be what some of us remember from our own childhood. Changes have affected both the opportunities and the challenges of teaching, as well as the attitudes, knowledge, and skills needed to prepare for a teaching career. The changes have influenced much of the content of this book.

To see what we mean, look briefly at four new trends in education, at how they have changed what teachers do, and at how you will therefore need to prepare to teach:

- **increased diversity:** there are more differences among students than there used to be. Diversity has made teaching more fulfilling as a career, but also made more challenging in certain respects.
- **increased instructional technology:** classrooms, schools, and students use computers more often today than in the past for research, writing, communicating, and keeping records. Technology has created new ways for students to learn (for example, this textbook would not be possible without Internet technology!). It has also altered how teachers can teach most effectively, and even raised issues about what constitutes "true" teaching and learning.
- **greater accountability in education:** both the public and educators themselves pay more attention than in the past to how to assess (or provide evidence for) learning and good quality teaching. The attention has increased the importance of education to the public (a good thing) and improved education for some students. But it has also created new

constraints on what teachers teach and what students learn.
- **increased professionalism of teachers:** Now more than ever, teachers are able to assess the quality of their own work as well as that of colleagues, and to take steps to improve it when necessary. Professionalism improves teaching, but by creating higher standards of practice it also creates greater worries about whether particular teachers and schools are "good enough."

How do these changes show up in the daily life of classrooms? The answer depends partly on where you teach; circumstances differ among schools, cities, and even whole societies. Some clues about the effects of the trends on classroom life can be found, however, by considering one particular case—the changes happening in North America.

New trend #1: diversity in students

Students have, of course, always been diverse. Whether in the past or in the present day, students learn at unique paces, show unique personalities, and learn in their own ways. In recent decades, though, the forms and extent of diversity have increased. Now more than ever, teachers are likely to serve students from diverse language backgrounds, to serve more individuals with special educational needs, and to teach students either younger and older than in the past.

Language diversity

Take the case of language diversity. In the United States, about 40 million people, or 14 per cent of the population are Hispanic. About

20 per cent of these speak primarily Spanish, and approximately another 50 per cent speak only limited English (United States Census Bureau, 2005). The educators responsible for the children in this group need to accommodate instruction to these students somehow. Part of the solution, of course, is to arrange specialized second-language teachers and classes. But adjustment must also happen in "regular" classrooms of various grade levels and subjects. Classroom teachers must learn to communicate with students whose English language background is limited, at the same time that the students themselves are learning to use English more fluently (Pitt, 2005). Since relatively few teachers are Hispanic or speak fluent Spanish, the adjustments can sometimes be a challenge. Teachers must plan lessons and tasks that students actually understand. At the same time teachers must also keep track of the major learning goals of the curriculum. As you gain experience teaching, you will no doubt find additional strategies and resources (Gebhard, 2006), especially if second-language learners become an important part of your classes.

Diversity of special educational needs

Another factor making classroom increasingly diverse has been the inclusion of students with disabilities into classrooms with non-disabled peers. In the United States the trend began in the 1970s, but accelerated with the passage of the Individuals with Disabilities Education Act in 1975, and again when the Act was amended in 2004 (United States Government Printing Office, 2005). In Canada similar legislation was passed in individual provinces during the same general time period. The laws guarantee free, appropriate education for children with disabilities of any kind—whether the impairment is physical, cognitive, emotional, or behavioral. The laws also recognize that such students need special supports in order to learn or function effectively in a classroom with non-disabled

peers, so they provide for special services (for example, teaching assistants) and procedures for making individualized educational plans for students with disabilities.

As a result of these changes, most American and Canadian teachers are likely to have at least a few students with special educational needs, even if they are not trained as special education teachers or have had no prior personal experience with people with disabilities. Classroom teachers are also likely to work as part of a professional team focused on helping these students to learn as well as possible and to participate in the life of the school. The trend toward inclusion is definitely new compared to circumstances just a generation or two ago. It raises new challenges about planning instruction (such as how is a teacher to find time to plan for individuals?), and philosophical questions about the very nature of education (such as what in the curriculum is truly important to learn?).

Lifelong learning

The diversity of modern classrooms is not limited to language or disabilities. Another recent change has been the broadening simply of the age range of individuals who count as "students." In many nations of the world, half or most of all three- and four-year-olds attend some form of educational program, either part-time preschool or full-time child care (National Institute for Early Education Research, 2006). In North America some public school divisions have moved toward including nursery or preschool programs as a newer "grade level" preceding kindergarten. Others have expanded the hours of kindergarten (itself considered a "new" program early in the 20th century) to span a full-day program.

The obvious differences in maturity between preschoolers and older children lead most teachers of the very young to use flexible, open-ended plans and teaching strategies, and to develop more

personal or family-like relationships with their young "students" than typical with older students (Bredekamp & Copple, 1997). Just as important, though, are the educational and philosophical issues that early childhood education has brought to public attention. Some educational critics ask whether preschool and day care programs risk becoming *in*appropriate substitutes for families. Other educators suggest, in contrast, that teachers of older students can learn from the flexibility and open-ended approach common in early childhood education. For teachers of any grade level, it is a debate that cannot be avoided completely or permanently. In this book, it reappears in Chapter 3, where I discuss students' development—their major long-term, changes in skills, knowledge, and attitudes.

The other end of the age spectrum has also expanded. Many individuals take courses well into adulthood even if they do not attend formal university or college. *Adult education*, as it is sometimes called, often takes place in workplaces, but it often also happens in public high schools or at local community colleges or universities. Some adult students may be completing high school credentials that they missed earlier in their lives, but often the students have other purposes that are even more focused, such as learning a trade-related skill. The teachers of adult students have to adjust their instructional strategies and relationships with students so as to challenge and respect their special strengths and constraints as adults (Bash, 2005). The students' maturity often means that they have had life experiences that enhance and motivate their learning. But it may also mean that they have significant personal responsibilities—such as parenting or a full-time job—which compete for study time, and that make them impatient with teaching that is irrelevant to their personal goals or needs. These advantages and constraints also occur to a lesser extent among "regular" high school students. Even secondary school teachers must ask, how they can make sure that instruction does not waste students' time, and how they can make it truly efficient, effective, and valuable.

New trend #2: using technology to support learning

For most teachers, "technology" means using computers and the Internet as resources for teaching and learning. These tools have greatly increased the amount and range of information available to students, even if their benefits have sometimes been exaggerated in media reports (Cuban, 2001). With the Internet, it is now relatively easy to access up-to-date information on practically any subject imaginable, often with pictures, video clips, and audio to accompany them. It would seem not only that the Internet and its associated technologies have the potential to transform traditional school-based learning, but also that they have in fact begun to do so.

For a variety of reasons, however, technology has not always been integrated into teachers' practices very thoroughly (Haertel & Means, 2003). One reason is practical: in many societies and regions, classrooms contain only one or two computers at most, and many schools have at best only limited access to the Internet. Waiting for a turn on the computer or arranging to visit a computer lab or school library limits how much students use the Internet, no matter how valuable the Internet may be. In such cases, furthermore, computers tend to function in relatively traditional ways that do not take full advantage of the Internet: as a word processor (a "fancy typewriter"), for example, or as a reference book similar to an encyclopedia.

Even so, single-computer classrooms create new possibilities and challenges for teachers. A single computer can be used, for example, to present upcoming assignments or supplementary material to students, either one at a time or small groups. In functioning in this way, the computer gives students more flexibility about when to finish old tasks or to begin new ones. A single computer can also enrich the learning of individual students with special interests or motivation and it can provide additional review to students who

need extra help. These changes are not dramatic, but they lead to important revisions in teachers' roles: they move teachers away from simply delivering information to students, and toward facilitating students' own constructions of knowledge.

A shift from "full-frontal teaching" to "guide on the side" becomes easier as the amount and use of computer and Internet technologies increases. If a school (or better yet, a classroom) has numerous computers with full Internet access, then students' can in principle direct their own learning more independently than if computers are scarce commodities. With ample technology available, teachers can focus much more on helping individuals in developing and carrying out learning plans, as well as on assisting individuals with special learning problems. In these ways a strong shift to computers and the Internet can change a teacher's role significantly, and make the teacher more effective.

But technology also brings some challenges, or even creates problems. It costs money to equip classrooms and schools fully: often that money is scarce, and may therefore mean depriving students of other valuable resources, like additional staff or additional books and supplies. Other challenges are less tangible. In using the Internet, for example, students need help in sorting out trustworthy information or websites from the "fluff," websites that are unreliable or even damaging (Seiter, 2005). Providing this help can sometimes be challenging even for experienced teachers. Some educational activities simply do not lend themselves to computerized learning—sports, for example, driver education, or choral practice. As a new teacher, therefore, you will need not only to assess what technologies are possible in your particular classroom, but also what will actually be assisted by new technologies. Then be prepared for your decisions to affect *how* you teach—the ways you work with students.

New trend #3: accountability in education

In recent years, the public and its leaders have increasingly expected teachers and students to be *accountable* for their work, meaning that schools and teachers are held responsible for implementing particular curricula and goals, and that students are held responsible for learning particular knowledge. The trend toward accountability has increased the legal requirements for becoming and (sometimes) remaining certified as a teacher. In the United States in particular, preservice teachers need more subject-area and education-related courses than in the past. They must also spend more time practice teaching than in the past, and they must pass one or more examinations of knowledge of subject matter and teaching strategies. The specifics of these requirements vary among regions, but the general trend—toward more numerous and "higher" levels of requirements—has occurred broadly throughout the English-speaking world. The changes obviously affect individuals' experiences of becoming a teacher— especially the speed and cost of doing so.

Public accountability has led to increased use of *high-stakes testing*, which are tests taken by all students in a district or region that have important consequences for students' further education (Fuhrman & Elmore, 2004). High-stakes tests may influence grades that students receive in courses or determine whether students graduate or continue to the next level of schooling. The tests are often a mixture of essay and structured-response questions (such as multiple-choice items), and raise important issues about what teachers should teach, as well as how (and whether) teachers should help students to pass the examinations. It also raises issues about whether high-stakes testing is fair to all students and consistent with other ideals of public education, such as giving students the best possible start in life instead of disqualifying them from educational opportunities. Furthermore, since the results of high-stakes tests are sometimes also used to evaluate the performance

of teachers, schools, or school districts, insuring students' success on them becomes an obvious concern for teachers—one that affects instructional decisions on a daily basis.

New trend #4: increased professionalism of teachers

Whatever your reactions to the first three trends, it is important to realize that they have contributed to a fourth trend, an increase in *professionalism* of teachers. By most definitions, an occupation (like medicine or law—or in this case teaching) is a profession if its members take personal responsibility for the quality of their work, hold each other accountable for its quality, and recognize and require special training in order to practice it.

By this definition, teaching has definitely become *more* professional than in the past (Cochran-Smith & Fries, 2005). Increased expectations of achievement by students mean that teachers have increased responsibility not only for their students' academic success, but also for their own development as teachers. Becoming a new teacher now requires *more* specialized work than in the past, as reflected in the increased requirements for certification and licensing in many societies and regions. The increased requirements are partly a response to the complexities created by the increasing diversity of students and increasing use of technology in classrooms.

Greater professionalism has also been encouraged by initiatives from educators themselves to study and improve their own practice. One way to do so, for example, is through **action research** (sometimes also called **teacher research**), a form of investigation carried out by teachers about their own students or their own teaching. Action research studies lead to concrete decisions that improve teaching and learning in particular educational contexts

(Mertler, 2006; Stringer, 2004). The studies can take many forms, but here are a few brief examples:

- How precisely do individual children learn to read? In an action research study, the teacher might observe and track one child's reading progress carefully for an extended time. From the observations she can get clues about how to help not only that particular child to read better, but also other children in her class or even in colleagues' classes.
- Does it really matter if a high school social studies teacher uses more, rather than fewer, open-ended questions? As an action of research study, the teacher might videotape his own lessons, and systematically compare students' responses to his open-ended questions compared to their responses to more closed questions (the ones with more fixed answers). The analysis might suggest when and how much it is indeed desirable to use open-ended questions.
- Can an art teacher actually entice students to take more creative risks with their drawings? As an action research study, the teacher might examine the students' drawings carefully for signs of visual novelty and innovation, and then see if the signs increase if she encourages novelty and innovation explicitly

Table 1: Examples of action research project

Steps in action research Project	Example 1: students' use of the Internet	Example 2: a teacher's helpfulness to ESL students
Purpose of the research (as expressed by the teacher doing the research)	"In doing assignments, how successful are my students at finding high-quality, relevant information?"	"Am I responding to my ESL students as fully and helpfully as to my English-speaking students, and why or why not?"
Who is doing the study?	Classroom teacher (elementary level) and school computer specialist teacher	Classroom teacher (senior high level)—studying self; Possibly collaborating with other teachers or with ESL specialist.
How information is gathered and recorded	Assessing students' assignments; Observing students while they search the Internet. Interviewing students about their search experiences	Videotaping of self interacting during class discussions; Journal diary by teacher of experiences with ESL vs other students; Interviews with teacher's ESL students
How information is analyzed	Look for obstacles and "search tips" expressed by several students; Look for common strengths and problems with research cited on assignments.	Look for differences in type and amount of interactions with ESL vs other students; Look for patterns in differences; Try altering the patterns of interaction and observe the result.
How information is reported and communicated	Write a brief report of results for fellow staff; Give a brief oral report to fellow staff about results	Write a summary of the results in teacher's journal diary; Share results with fellow staff; Share results with teacher's students.

Two other, more complete examples of action research are summarized in Table 1. Although these examples, like many action research studies, resemble "especially good teaching practice," they are planned more thoughtfully than usual, carried out and recorded

more systematically, and shared with fellow teachers more thoroughly and openly. As such, they yield special benefits to teachers as professionals, though they also take special time and effort. For now, the important point is that use of action research simultaneously reflects the increasing professionalism of teachers, but at the same time creates higher standards for teachers when they teach.

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84. What are Education Philosophies?

Introduction

What makes a teacher? Teaching is like a salad. Think about it. If you were to attend a party for any given holiday, the number of and variations to each salad recipe that might be present for consumption could outnumber those present at the party. There are so many different ways to teach, varying circumstances to take into account, and philosophies to apply to each classroom. And what better way to have a positive impact on the world than to offer knowledge for consumption? The term 'teacher' can be applied to anyone who imparts knowledge of any topic, but it is generally more focused on those who are hired to do so (teach, n.d., n.p.). In imparting knowledge to our students, it is inevitable that we must take into account our own personal philosophies, or pedagogies, and determine not only how we decide what our philosophies are, but also how those impact our consumers.

An analogy is one of a teacher's most useful tools. It helps the instructor relate a difficult concept to something the students will already have the infrastructure for, thus enabling the students to cement the ideas in their mind.

Lessons in Pedagogy

Early teacher education classes frequently separated the concept of philosophy into separate schools (Roberson, 2000, p. 8). "Philosophy has been taught in the theoretical realm rather than the practical sense," meaning that the ideas were placed before the teachers without the scaffolding to create a bridge into the classroom (Roberson, 2000, p. 7). The teachers, as students, were given a body of thought and expected to translate that into lessons for their own students. Once you have the idea, how do you apply it to teaching?

What, exactly, are education philosophies? According to Thelma Roberson (2000), most prospective teachers confuse their beliefs with the ideas of teaching (p. 6). Education philosophies, then, are not what you want to do in class to aid learning, but why you do them and how they work. For example, Roberson's students state they "want to use cooperative learning techniques" in their classroom. The question posed is, why? "[I]s cooperative learning a true philosophy or is it something you do in the classroom because of your belief about the way children learn?" (Roberson, 2000, p. 6). Philosophies need to translate ideas into action – if you want to use certain techniques, then you need to understand how they are effective in the classroom to create that portion of your education philosophy. It helps to have an overview of the various schools out there.

Philosophies of Education have traveled down a tree of branches. The first four support branches of philosophy are the Idealist school, the Realist school, the Pragmatist school, and the Existential schools of thought (Ornstein, 2003, p. 99). It might help to look at the tree and its individual branches rather than read about them…

- Idealism – focuses on a subject-matter curriculum emphasizing the great ideas of the culture. You must ponder ideas to make them whole (Ornstein, 2003, p. 99).
- Realism – A subject-matter curriculum stressing objective

knowledge and values. Reality is objective, meaning everyone should obtain the same results regardless of what he does or how he consider concepts (Ornstein, 2003, p. 101)

  - Perennialism – Focuses on human concerns that have caused concern for centuries, revealed through 'great works' (Ornstein, 2003, p. 110)
  - Essentialism – Rooted partially in Idealism, as well – Emphasizes skills and subjects that demonstrate the cultural heritage and contribute to society (Ornstein, 2003, p. 110)
- Pragmatism – Instruction is organized around problem-solving following the steps of the scientific method – emphasizes the need to act on concepts by testing them (Ornstein, 2003, p. 104).
  - Progressivism – Instruction features problem solving and group activities – The instructor acts as a facilitator as opposed to a leader (Ornstein, 2003, p. 110)
  - Social Reconstructionism – Instruction that focuses on significant social and economic problems in an effort to solve them (Ornstein, 2003, pg.110)
- Existentialism – Classroom dialogue stimulates awareness – each person creates an awareness gleaned from discussion and encourages deep personal reflection on his or her convictions (Ornstein, 2003, p. 108).

Perennialism

Perennialists are instructors who feel that the knowledge that has been passed through the ages should be continued as the basis of the curriculum, like the classic works of Plato and Einstein. Perennialists base their teachings on reason, logic, and analytical thought. Only information that stood the test of time is relevant. They do not illicit student input. The classes most likely to be

considered under this approach would be history, science, math, and religion classes (Educational Philosophies in the Classroom, pg.1).

Positivism

The instructors whose teaching philosophies are based on documented facts and tangible truths are normally those who would be in the math and science departments. These teachers do not feel that religion and the supernatural should be a part of the thinking process. The idea of uncertainty and the unknown is considered illogical (Educational Philosophies in the Classroom, pg.1).

Behaviorism

Behaviorists believe in rewards and punishments as an approach to controlling the teaching environment due to their belief in the intrinsic nature of humans to react to internal or external stimuli. This teacher-centered system ultimately allows the students to be controlled by the educator, who makes the environment pleasant or unpleasant depending on the students' behavior (Foundations of Education, pg.1).

Essentialism

Essentialists believe that there is a universal pool of knowledge needed by all students. The fundamentals of teaching are the basis of the curriculum: math, science, history, foreign language, and

English. Vocational classes are not seen as a necessary part of educational training. Classrooms are formal, teacher-centered, and students are passive learners. Evaluations are predominately through testing, and there are few, if any, projects or portfolios. These instructors easily accept the No Child Left-Behind Act because test scores are the main form of evaluation (Foundations of Education, pg. 1).

Progressivism

This is a student-centered form of instruction where students follow the scientific method of questioning and searching for the answer. Evaluations include projects and portfolios. Current events are used to keep students interested in the required subject matter. Students are active learners as opposed to passive learners. The teacher is a facilitator rather than the center of the educational process. Student input is encouraged, and students are asked to find their interpretation of the answer (Educational Philosophies in the classroom, pg.1).

Reconstructionism

This student-centered philosophy strives to instill a desire to make the world a better place. It places a focus on controversial world issues and uses current events as a springboard for the thinking process. These students are taught the importance of working together to bring about change. These teachers incorporate what is happening in the world with what they are learning in the classroom (Educational Philosophies in the Classroom, pg.1).

Constructivism

Active participation is the key to this teaching style. Students are free to explore their own ideas and share concepts with one another in nontraditional ways. “Hands on activity [...] is the most effective way of learning and is considered true learning” (Educational Philosophies in the Classroom, pg.1).

Humanism/ Existentialism

Also a student-centered philosophy, this educational method is based on the idea that the students should be presented with choices about the learning process. The student is engaged in all aspects of learning and works together with the teacher and her peers to develop a curriculum and evaluation system that allows for individual interests and abilities (Educational philosophies in the Classroom, pg.1).

> Your philosophy of education is what you believe about education and the way children learn.” – Roberson pg 4

In addition, the ‘constructivist’ school of philosophy, rooted in the Pragmatic pedagogy and branched off from the ‘Social Reconstructivist’ school, has gained much popularity. Around the turn of the century (early 1990s), many teachers felt the rote memorization and mindless routine that was common then was ineffective, and began to look for alternate ways to reach their students (Ornstein, 2003, p. 111). Through the constructivist approach, “students “construct” knowledge through an interaction between what they already think and know and with new ideas and experiences” (Roberson, 2000, p. 8). This is an active learning

process that leads to deeper understanding of the concepts presented in class, and is based on the abilities and readiness of the children rather than set curriculum guidelines (Ornstein, 2003, p. 112). Constructivism "emphasizes socially interactive and process-oriented 'hands on' learning in which students work collaboratively to expand and revise their knowledge base" (Ornstein, 2003, p. 112). Essentially, knowledge which is shaped by experience is reconstructed, or altered, to assist the student in understanding new concepts (Ornstein, 2003, p. 112). You, as the teacher, help the students build the scaffolding they need to maintain the information even after the test is taken and graded.

Four Philosophies in Assessment

Once you know how you want to lead your classroom, it is important to consider how to assess your students' progress. And when we think of school, we automatically consider the threesome subjects, Reading, Writing, and 'Rithmatic. In all aspects of learning, however, the ability to communicate comes to the forefront. Communication is used in class discussion as well as unit test short answers. Writing is present in almost all subjects in some form, and writing translates to communication. Richard Fulkerson (2000), in his article "Four Philosophies of Composition," questions whether "a [...] set of four philosophies of composition might exist, each one stressing a different element in the communicative transaction" (p. 3). Fulkerson's schools of communicative philosophy fall into the following categories:

- **Expressionism:** a way of writing that demonstrates the students' thoughts and can be lead by "non-directive teachers, some of whom insist that one neither can nor should evaluate writing" or more hands-on teachers who "design classroom activities to maximize student self-discovery" (p. 5). This

school of thought emphasizes the student.

- **Rhetorical:** this school states that good writing is adapted to achieve a specific reaction from the audience (p. 6). This is focused on the connection between goal and process in completing assignments, and it emphasizes the audience.
- **Mimesis:** states that "a clear connection exists between good writing and good thinking" and focuses on logic and reason as exemplified in the completion of assignments (p. 5). This school emphasizes a well-rounded student in that, research, prior knowledge, and the ability to recognize both sides of an argument are necessary for success (p. 6).
- **Formalism:** this school focuses primarily on the form of the assignment – it disregards content to the extent that poor grammar can distract the audience from absorbing the content, and therefore, the work is judged "primarily by whether it shows certain internal [mistakes]" (p. 4).

While most teachers fall primarily into one school of composition pedagogy, Fulkerson (2000) points out that it is necessary to hold on to them all when he states "they are not mutually exclusive" (p. 6). The trick is to learn when each is applicable and to what extent it should be employed.

Hooked on Phonics?

So, you know how you want to lead your class, and you have an idea as to which kind of 'grader' you are. What next? Another area where teachers have struggled is simply in helping their students learn to or improve their reading. How do we teach reading? The two battling schools of thought are between those who support Whole Language, and those who support Phonics. "The disputes have been dubbed the Reading Wars, and the participants call them 'vicious'"

(Collins, 1997, n.p.). Several states have even intervened and enacted laws mandating one or the other.

But what are they? Just as their names state, the difference is in how the words are read. Phonics was taught primarily in the 1970s (Collins, 1997, n.p.) and study the individual components of each word, called 'phonemes,' which are the "smallest meaningful sounds in a language" (Collins, 1997, n.p.). "Cat, for example, has three: "kuh-aa-tuh" (Collins, 1997, n.p.). A reader needs to understand how the words are broken up and that each letter has its own sound in order to read (Collins, 1997, n.p.). Phonic teaching focuses on code learning. Once the students understand the 'code,' and how the words phonemes are put together, they are supposed to be able to understand the entire word.

Whole language advocates disagree with the process of breaking each word down. They feel readers cannot focus on every letter in a word, or every word in a text (Collins, 1997, n.p.) and made their opinions known during the 1980s (Collins, 1997, n.p.). If they did, "and if they tried to translate what they saw into sounds, reading would be much too cumbersome" (Collins, 1997, n.p.). Instead, whole language teachers instruct their students in 'skipping strategies' – ways of guessing which word comes next to fill in any blanks (Collins, 1997, n.p.). Overall, reading is considered an organic process by which the students learn phonics "only when a question about phonics comes up in the course of reading" (Collins, 1997, n.p.). Whole language focuses on the meaning behind the words.

Which is better?

Just as in many other walks of life, statistics and studies show that one philosophy of teaching will prevail over another. The National Assessment of Educational Progress, as stated in J. Collin's article (1997), claims that "from 1971 to 1980 there was a steady improvement in the reading comprehension of nine-year-olds.

However, during the 1980s…the scores did not improve and rather declined" (n.p.).

The 1990s brought the topic full circle. It was then that Marilyn Adams, a cognitive psychologist, wrote a book describing the best methods to teach learning. "Programs that combined systematic phonics instruction with meaning emphasis seemed to work best of all" (Collins, 1997, n.p.). The key to reading is that words need to be recognized so the brain can interpret the meaning behind it (Collins, 1997, n.p.). Thus, putting the two methods together was necessary for correct comprehension of the concepts presented.

What else do I need to know?

We've discussed the accepted definition of pedagogy, varying schools of thought for assessment, and the difference between reading philosophies. Your salad components are increasing by number exponentially. But what toppings to you add to your thought salad? What else do you need to consider when you are setting up your classroom, your teaching styles, and your lessons?

Teaching is the hardest job you can have. You are in a position to touch hundreds of lives over the course of a career, and yet, how do you succeed? The fact remains that "when a teacher and his/her students face each other in the classroom they must truly work with each other" (Cadenas, 1999, n.p.). How else can you ensure that the students are learning what you are teaching?

> [You] may spend as much as 60 hours a week creating lesson plans, teaching, advising students, grading, supervising extracurricular activities and meeting with colleagues and parents" Valerie Marchant – *Time*

The first thing to keep in mind is your own knowledge basis.

Cadenas (1999) recommends that you "renew and refresh your knowledge of the subject matter" (n.p.) to stay on top of changes and help you incorporate them in to your lessons. Our world changes so rapidly that to stay on top of technology, your field of expertise, or even other areas that can be integrated into your subject matter, it is necessary to take a class or attend a seminar every once in a while (Cadenas, 1999, n.p.).

Next, "prepare interesting, colorful, captivating lesson plans and deliver then with gusto" (Cadenas, 1999, n.p.). An entertaining teacher will help cement information into a student's memory with much more ease than one who is monotone or inactive (Cadenas, 1999, n.p.). The more entertaining you are, the deeper a connection you will make with your students, as well.

In addition to the captivating lesson, make sure "it [is] a number one priority to ensure that your student can follow the lesson" (Cadenas, 1999, n.p.). This will assist all your students in grasping the information you are placing before them in class, and will help you reach students of all learning styles (Cadenas, 1999, n.p.). You don't want to end up teaching only to the auditory learners and leaving the visual learners to fend for themselves!

Last, "help your students to put their learning to use immediately" (Cadenas, 1999, n.p.). Show them how the lessons you are teaching are applicable to them so they feel like school is worth an investment of time and energy (Cadenas, 1999, n.p.). If nothing else, have them help each other out in class to reinforce the lesson!

Conclusion

You are ready to graze at a Fourth of July picnic. You walk over to the table, and you see an array of salads ready for you to dive in to them. How do you pick which ones you want to sample now or save for later? How do you narrow the choices down?

Educational philosophies are as abundant as salads at any holiday

spread. And even though the difference between one potato salad and the one next to it is an addition of mustard, the two are by no means exactly alike. Your classes will be just as diverse. You will have students from all economic classes, with differing levels of English language ability, and all bringing various and beautiful experiences to your class. How do you reach each individual?

Knowing who you are as a teacher before you enter the classroom will help significantly. Teaching is so much more than just the content. Teaching is a learning curve on philosophy that will never be finished. Just as your classroom will change every year, continue to alter your philosophies. See what works for you and your students on a collaborative level.**In the words of J. W. Apps, "a working philosophy is never completely developed the ultimate working philosophy never reached. We're always moving toward, hopefully, a more complete, and thus more useful, working philosophy." (The Educational Philosophies of Training and Development Professors, Leaders, and Practitioners, pg. 1)**

Study Questions

1. Amy is working with her third grade class to improve their reading skills. She is asking them to write the words on a specific list down and break them apart based on their syllables and then combine them back into their original words. Amy is making use of which theory for reading?

a. Whole Language

b. Phonics

c. A combination of the two

2. Lou asks his students to critique their formal essays for APA formatting and grammar. He then asks them to write him an

informal letter explaining their thought process on the formal essay, and how they thought they did overall on it. Lou is implementing which two schools of philosophy of assessment?

a. Formalism and Mimesis

b. Mimesis and Rhetorical

c. Rhetorical and Expressionism

d. Expressionism and Formalism

3. A student who is writing her formal pedagogy paper for class expresses an interest in incorporating technology into her history class. She then lists several ways she will consistently make use of technology in her classroom. In order to ensure technology is part of her pedagogy, what does this student need to do?

a. Develop the reason behind why she wants to use technology, including an explanation for what she hopes to accomplish

b. Develop her lesson plans fully so she has alternatives in case the electricity goes out, her LCD projector blows a bulb, etc.

c. Research statistics that show pros and cons to using technology in the classroom

d. Interview experienced teachers to hear what they have to say about using technology in the classroom

4. A student receives his paper back from his teacher and on it is written a comment, "Where is the opponent's viewpoint?" This student's teacher is focusing on which philosophy for assessment?

a. Rhetoricism

b. Mimesis

c. Expressionism

d. Formalism

5. Adam has been teaching for 11 years and needs to complete his recertification points to maintain his licensure. He signs up for a conference on reaching students with learning disabilities. Which step is he taking to help him stay focused on his original purpose of teaching?

a. Applicability to real life

b. Ensuring all students can participate

c. Refresh his pedagogical knowledge

d. Preparation of lesson plans

Answers: 1(b); 2(d); 3(a); 4(b); 5(c)

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85. Defining Sex, Gender, and Sexuality

Sex refers to biological characteristics, while gender is socially determined based on those characteristics.

LEARNING OBJECTIVE

- Differentiate among sex, gender, and sexuality

KEY POINTS

- A person's sex, as determined by their biology, does not always correspond with their gender. Therefore, the terms "sex" and "gender" are not interchangeable.
- "Sex" refers to physical or physiological differences between male, female, and intersex bodies, including both primary sex characteristics (the reproductive system) and secondary sex characteristics (such as breasts and facial hair).
- "Gender" is a term that refers to social or cultural distinctions associated with a given sex; it is generally considered to be a socially constructed concept.
- Gender identity is the extent to which one identifies with their sex assigned at birth. In many Western cultures, individuals who identify with a role that is different from their biological sex are called transgender.

- "Human sexuality" refers to people's sexual interest in and attraction to others, as well as their capacity to have erotic experiences and responses.

TERMS

- intersexA variation in sex characteristics including chromosomes, gonads, or genitals that do not allow an individual to be distinctly identified as male or female.
- genderThe sociocultural phenomenon of the division of people into various categories according to their biological sex, with each having associated roles, clothing, stereotypes, etc.; those with male sex characteristics are perceived as "boys" and "men," while those with female sex characteristics are perceived as "girls" and "women."
- sexThe distinguishing property, quality, or assemblage of properties by which organisms are classified as female, male, or intersex on the basis of their reproductive organs and functions.
- sexualityPeople's sexual interest in and attraction to others; their capacity to have erotic experiences and responses.
- gonadThe sex organs that produce gametes; specifically, the testicles or ovaries.

When filling out official documents, you are often asked to provide your name, birth date, and sex or gender. But have you ever been asked to provide your sex *and* your gender? It may not have occurred to you that *sex* and *gender* are not the same. However, sociologists and most other social scientists view sex and gender as conceptually distinct. *Sex* denotes biological characteristics and exists along a spectrum from male to female. *Gender*, on the other hand, denotes social and cultural characteristics that are assigned

to different sexes. Sex and gender are not always synchronous, meaning they do not always line up in an easy-to-categorize way.

Sex

"Sex" refers to physiological differences found among male, female, and various intersex bodies. Sex includes both *primary sex characteristics* (those related to the reproductive system) and *secondary sex characteristics* (those that are not directly related to the reproductive system, such as breasts and facial hair). In humans, the biological sex of a child is determined at birth based on several factors, including chromosomes, gonads, hormones, internal reproductive anatomy, and genitalia. Biological sex has traditionally been conceptualized as a binary in Western medicine, typically divided into male and female. However, anywhere from 1.0 to 1.7% of children are born intersex, having a variation in sex characteristics (including chromosomes, gonads, or genitals) that do not allow them to be distinctly identified as male or female. Due to the existence of multiple forms of intersex conditions (which are more prevalent than researchers once thought), many view sex as existing along a spectrum, rather than simply two mutually exclusive categories.

Male, female, and the spectrum of sex: In humans, sex is typically divided into male, female, or intersex (i.e., having some combination of male and female sex characteristics). The above symbols represent female on the left and male on the right.

Gender

A person's sex, as determined by his or her biology, does not always correspond with their gender; therefore, the terms "sex" and "gender" are not interchangeable. "Gender" is a term that refers to social or cultural distinctions associated with being male, female, or intersex. Typically, babies born with male sex characteristics (*sex*) are assigned as boys (*gender*); babies born with female sex characteristics (*sex*) are assigned as girls (*gender*). Because our society operates in a binary system when it comes to gender (in other words, seeing gender as only having two options), many children who are born intersex are forcibly assigned as either a boy or a girl and even surgically "corrected" to fit a particular gender. Scholars generally regard gender as a *social construct*—meaning that it does not exist naturally, but is instead a concept that is created by cultural and societal norms.

Gender identity is a person's sense of self as a member of a particular gender. Individuals who identify with a role that corresponds to the sex assigned to them at birth (for example, they were born with male sex characteristics, were assigned as a boy, and identify today as a boy or man) are cisgender. Those who identify with a role that is *different* from their biological sex (for example, they were born with male sex characteristics, were assigned as a boy, but identify today as a girl, woman, or some other gender altogether) are often referred to as transgender. The term "transgender" encompasses a wide range of possible identities, including agender, genderfluid, genderqueer, two-spirit (for many indigenous people), androgynous, and many others.

The continuum of sex and gender: Those who identify with a gender that is different fr om their biological sex are called transgender.

Cultural Variations of Gender

Since the term "sex" refers to biological or physical distinctions, characteristics of sex will not vary significantly between different human societies. For example, persons of the female sex, in general, regardless of culture, will eventually menstruate and develop breasts that can lactate. Characteristics of gender, on the other hand, may vary greatly between different societies. For example, in American culture, it is considered feminine (or a trait of the female gender) to wear a dress or skirt. However, in many Middle Eastern, Asian, and African cultures, dresses or skirts (often referred to as

sarongs, robes, or gowns) can be considered masculine. Similarly, the kilt worn by a Scottish male does not make him appear feminine in his culture.

Sexuality

"Human sexuality" refers to people's sexual interest in and attraction to others, as well as their capacity to have erotic experiences and responses. People's sexual orientationis their emotional and sexual attraction to particular sexes or genders, which often shapes their sexuality. Sexuality may be experienced and expressed in a variety of ways, including thoughts, fantasies, desires, beliefs, attitudes, values, behaviors, practices, roles, and relationships. These may manifest themselves in biological, physical, emotional, social, or spiritual aspects. The *biological and physical* aspects of sexuality largely concern the human reproductive functions, including the human sexual-response cycle and the basic biological drive that exists in all species. *Emotional* aspects of sexuality include bonds between individuals that are expressed through profound feelings or physical manifestations of love, trust, and care. *Social* aspects deal with the effects of human society on one's sexuality, while *spirituality*concerns an individual's spiritual connection with others through sexuality. Sexuality also impacts and is impacted by cultural, political, legal, philosophical, moral, ethical, and religious aspects of life.

The Standard Model of the Terms

The terms "sex" and "gender" have not always been differentiated in the English language, and it was not until the 1950s that they

formally began to be distinguished. In an effort to clarify usage of the terms "sex" and "gender," U.S. Supreme Court Justice Antonin Scalia wrote in a 1994 briefing, "*The word 'gender' has acquired the new and useful connotation of cultural or attitudinal characteristics (as opposed to physical characteristics) distinctive to the sexes. That is to say, gender is to sex as feminine is to female and masculine is to male*" (J.E.B. v. Alabama, 144 S. Ct. 1436 [1994]).

The standard model of the difference between sex and gender says that one's sex is biologically determined (meaning that when a child is born, doctors classify the child as a particular sex depending on anatomy), while one's gender is socially or culturally determined (meaning that the way in which that child is raised, socialized, and taught determines whether they take on masculine or feminine traits). The standard model has been criticized for saying that humans are sexually *dimorphic*: this means each and every human being is either male or female, thus leaving out those who are born intersex. The standard model explains that gender is categorized into two separate, opposing sides, being either masculine or feminine, again completely excluding those who are intersex, transgender, androgynous, and so on. Modern scholars such as Anne Fausto-Sterling and Bonnie Spanier criticize the standard binaries of sex and gender, arguing that sex and gender are both fluid concepts that exist along a spectrum, rather than as binaries.

86. Gender and Sociology

From birth, children are assigned a gender and are socialized to conform to certain gender roles based on their biological sex.

LEARNING OBJECTIVE

- Explain how gender roles shape individual behavior and how society punishes those who don't conform

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KEY POINTS

- Gender roles are based on *norms*, or standards, created by society. In the U.S., masculine roles are usually associated with strength, aggression, and dominance, while feminine roles are associated with passivity, nurturing, and subordination.
- Gender socialization begins at birth and occurs through four major agents of socialization: family, education, peer groups, and mass media.
- Repeated socialization over time leads men and women into a false sense that they are acting naturally, rather than following a socially constructed role.
- The attitudes and expectations surrounding gender roles are typically based not on any inherent or natural gender differences, but on *stereotypes* about the attitudes, traits, or behavior patterns of women or men.
- Gender stereotypes form the basis of *sexism*, or the

prejudiced beliefs that value males over females.
    - Transgender, genderqueer, and other nonconforming-gender people face discrimination, oppression, and violence for not adhering to society's traditional gender roles.

TERMS

- transgenderHaving a gender that is different from the gender one was assigned at birth.
- gender rolesA social and behavioral norm that is generally considered appropriate for either a man or a woman in a social setting or interpersonal relationship.
- normA rule that is enforced by members of a community.
- socializationThe process of learning one's culture and how to live within it; the way people adopt ideas about social roles from other members of their society.

"Sex" refers to physical or physiological differences between males, females, and intersex persons, including both their primary and secondary sex characteristics. "Gender," on the other hand, refers to social or cultural distinctions associated with a given sex. When babies are born, they are assigned a gender based on their biological sex—male babies are assigned as boys, female babies are assigned as girls, and intersex babies are usually relegated into one category or another. Scholars generally regard gender as a *social construct*, meaning that it does not exist naturally but is instead a concept that is created by cultural and societal norms. From birth, children are socialized to conform to certain gender roles based on their biological sex and the gender to which they are assigned.

Gender Roles

As we grow, we learn how to behave from those around us. In this socialization process, children are introduced to certain roles that are typically linked to their biological sex. The term "gender role" refers to society's concept of how men and women are expected to act and behave. Gender roles are based on norms, or standards, created by society. In American culture, masculine roles have traditionally been associated with strength, aggression, and dominance, while feminine roles have traditionally been associated with passivity, nurturing, and subordination.

Gender roles: The term "gender role" refers to society's concept of how men and women are expected to act.

Gender Socialization

The socialization process in which children learn these gender roles begins at birth. Today, our society is quick to outfit male infants in blue and girls in pink, even applying these color-coded gender labels while a baby is in the womb. It is interesting to note that these color associations with gender have not always been what they are today. Up until the beginning of the 20th century, pink was actually more associated with boys, while blue was more associated with girls—illustrating how socially constructed these associations really are.

Gender socialization occurs through four major agents: *family*,

education, *peer groups*, and *mass media*. Each agent reinforces gender roles by creating and maintaining normative expectations for gender-specific behavior. Exposure also occurs through secondary agents, such as religion and the workplace. Repeated exposure to these agents over time leads people into a false sense that they are acting naturally based on their gender, rather than following a socially constructed role.

Children learn at a young age that there are distinct expectations for them based on their assigned gender. Cross-cultural studies reveal that children are aware of gender roles by age two or three; at four or five, most children are firmly entrenched in culturally appropriate gender roles (Kane, 1996). Parents often supply male children with trucks, toy guns, and superhero paraphernalia, which are active toys that promote motor skills, aggression, and solitary play. Female children are often given dolls and dress-up apparel that foster nurturing, social proximity, and role play. Studies have shown that children will most likely choose to play with "gender appropriate" toys even when cross-gender toys are available, because parents give children positive feedback (in the form of praise, involvement, and physical closeness) for gender-normative behavior (Caldera, Huston, and O'Brien, 1998).

The drive to adhere to masculine and feminine gender roles continues later in life. Men tend to outnumber women in professions such as law enforcement, the military, and politics; women tend to outnumber men in care-related occupations such as childcare, healthcare, and social work. These occupational roles are examples of typical American male and female behavior, derived not from biology or genetics but from our culture's traditions. Adherence to these roles demonstrates fulfillment of social expectations but not necessarily personal preference (Diamond, 2002).

Sexism and Gender-Role Enforcement

The attitudes and expectations surrounding gender roles are not typically based on any inherent or natural gender differences, but on gender stereotypes, or oversimplified notions about the attitudes, traits, and behavior patterns of males and females. Gender stereotypes form the basis of sexism, or the prejudiced beliefs that value males over females. Common forms of sexism in modern society include gender-role expectations, such as expecting women to be the caretakers of the household. Sexism also includes people's expectations of how members of a gender group should behave. For example, women are expected to be friendly, passive, and nurturing; when a woman behaves in an unfriendly or assertive manner, she may be disliked or perceived as aggressive because she has violated a gender role (Rudman, 1998). In contrast, a man behaving in a similarly unfriendly or assertive way might be perceived as strong or even gain respect in some circumstances.

Sexism can exist on a societal level such as in hiring, employment opportunities, and education. In the United States, women are less likely to be hired or promoted in male-dominated professions such as engineering, aviation, and construction (Blau, Ferber, & Winkler, 2010; Ceci & Williams, 2011). In many areas of the world, young girls are not given the same access to nutrition, healthcare, and education as boys.

image

Gender stereotypes

Every time we see someone riding a motorcycle and assume, without looking closely, that they are male, we are engaging in gender stereotyping. This particular gender stereotype assumes that women are too timid or weak to ride a motorcycle.

Gender roles shape individual behavior not only by dictating how people of each gender should behave, but also by giving rise to penalties for people who don't conform to the norms. While it is somewhat acceptable for women to take on a narrow range of masculine characteristics without repercussions (such as dressing in traditionally male clothing), men are rarely able to take on more feminine characteristics (such as wearing skirts) without the risk of harassment or violence. This threat of punishment for stepping outside of gender norms is especially true for those who do not identify as male or female. Transgender, genderqueer, and other gender-nonconforming people face discrimination, oppression, and violence for not adhering to society's traditional gender roles. People who identify as gay, lesbian, bisexual, or queer are also ostracized for breaking the traditional gender norm of who a person of a given sex "should" be attracted to. Even people who identify as cisgender (identifying with the sex they were assigned at birth) and straight (attracted to the opposite sex) face repercussions if they step outside of their gender role in an obvious way.

87. Video: Second Infancy

Optional video about the neuroscience of a teen brain:

A YouTube element has been excluded from this version of the text. You can view it online here: https://library.achievingthedream.org/hostoschilddevelopmenteducation/?p=117

PART XVI

MODULE 14: EARLY ADULTHOOD

88. Lecture: Early Adulthood

Lecture Transcript

Here we are in early adulthood. This is the period of life when we are in our 20s and 30s.

First, a look at physical development.

If you are in your early 20s, you are enjoying your physiological peak. You may have more energy, endurance, and reproductive ability than at any other time in your life. Enjoy! In our 30s, we experience a slow, gradual decline in some abilities. One of the first noticeable signs of this is a loss of lung reserve capacity. If you exert yourself, you may notice that it takes longer to reach your normal breathing and heart rate than before. Most of this decline is due to a lack of exercise rather than aging alone, however. Busy lives in early adulthood sometimes means less time for working on physical fitness.

Men may reach their peak of sexual responsiveness in their late teens and early 20s. They can achieve an erection more easily at this period of life. Women may become more sexually responsive as they move through early adulthood. This may be because they become less self-conscious or more confident or comfortable than before.

About 10 to 15 percent of people who are of reproductive age experience infertility. Half of the time this may be due to the male having a low sperm count or not producing enough healthy sperm with enough motility to reach the egg. Half of the time the reason for infertility is because the female doesn't ovulate or has pelvic inflammatory disease or some other blockage in the reproductive tract. About a third of couples conceive eventually without treatment. Treatment helps couples conceive about half of the time.

Most fertility treatment is the use of drugs to stimulate ovulation. Five percent of fertility treatment involves in vitro

fertilization where sperm cells fertilize the egg outside the body and the zygote is transferred to the uterus. In vitro fertilization has about a 5 to 30 percent success rate. The more closely the procedure can mimic normal fertilization, the higher the success rate. Gamete intra-fallopian transfer involves transferring sperm and egg into the fallopian tube where conception typically occurs. A small percentage of couples use zygote intra-fallopian transfer in which the fertilized egg is transferred to the fallopian tube to continue its journey to the uterus.

Even though early adulthood is a peak for physiological condition, it's also a time vulnerable to societal risks. Drug abuse peaks between 19 and 22 as people transition into adulthood. Rates fall after these years. However, the use of intoxicants is associated with acquaintance rape and contracting sexually transmitted infections. It also increases the risk of death due to homicide, motor vehicle accidents, and suicide.

Here are some comparisons of violent deaths by sex and ethnic category taken from the National Center for Health Statistics. We can see first that risk is higher for males than for females in all ethnic categories. Homicide rates are particularly high for black males and suicide rates are particularly high for Native American males.

The brain continues to develop during early adulthood. How does thinking change in this period?

Have you ever heard a conversation between a 14 year old and someone in their mid-thirties? If it's a parent and child, you may have heard the 14 year old enthusiastically describe a plan of action while the 35 year old was quick to explain why the plan was unreasonable. This practical, realistic approach is the hallmark of postformal thinking. Postformal thinking is abstract, realistic, and personal. In early adulthood, we become less concerned with what our peers think and experience reveals what is likely to happen. Not just what is possible.

Dialectical thought is another feature of adult thought. While an adolescent may tend to think in either/or categories, the adult may

begin to understand that there are strengths and weaknesses in both sides of an argument. Being able to take what is salient from both sides of opposing viewpoints and to synthesize the two into a personalized view is referred to as dialectical thought. Education promotes this when it entails exploring various positions on a topic. In our personal life, dialectical thought may result in greater tolerance of others with the recognition that no one is perfect.

One concern over higher education is its relationship to the workplace. Derek Bok, former president of Harvard University, suggests that colleges and the workplace should be more closely aligned. The workplace needs people who are aware of global issues, who have effective communicative skills, and who have a sense of integrity or moral reasoning to offer the workplace. Universities and colleges need to address these issues. Higher education has also been criticized for graduating students who do not have critical thinking skills or adequate writing skills.

Now we take a look at the social world of early adulthood.

Havighurst provides a list of developmental tasks in early adulthood. These include achieving a sense of independence or learning how to be on one's own, achieving a sense of identity, emotional stability, beginning a career, engaging in intimate relationships, learning how to participate in the community, establishing one's own residence, and perhaps becoming parents. If you are in this age group and you find you days quite busy or even exhausting, it's certainly understandable!

One reason for engaging in such busy demands is because we feel that in the future, all will pay off. Many of our decisions are designed to show benefits later in adulthood. Young adults hope to be taken seriously as mature individuals and therefore may emphasize how old or experienced they are. They may also make decisions in order to earn the respect of others and to be viewed as adults.

Daniel Levinson offered one of the first studies of adult transitions. In the late 1970s, he published his work entitled Seasons of a Man's Life in which he described the transitions men faced as they launched as young adults and moved through midlife. The

early 20s was a time of adult transition and making plans for the future. These plans were implemented for the duration of the 20s, but were reevaluated as they approached their 30s. Some revisions might occur during this transition and carried out through a settling down period that followed. At midlife, these men compared what they thought their lives would be like, referred to as the dream, and how it really was. During the midlife transition, further adjustments such as career changes or changes in personal relationships could be made as well.

Erikson views early adulthood as a time of focusing on intimate relationships. Intimacy versus isolation.

Friendships can be one source of intimacy. Teens often have collections of friends of both sexes. But having opposite sexed friends becomes a bit more problematic once an intimate relationship has been established. As a result, males and females tend to have same-sex friendships. It's been suggested that the friendships that males share are focused on information sharing, debate, and problem-solving. But females are more likely to discuss personal problems and relationship issues. Do you think this is true in all cultures?

Cohabitation refers to partners living together in an intimate relationship without being married. It's estimated that there are about 7.5 million cohabiting couples in the United States. This reflects a 10 fold increase in the last 40 years. Of those, just under 800,000 are same-sex couples. In general, cohabiting relationships do not last as long as marriages. Cohabitation is a more permanent relationship in Europe. And with the decrease in remarriage rates and increase in cohabitation rates, the U. S. may become more similar to Europe in this regard. Younger partners tend to have shorter cohabiting relationships. Cohabitation continues to increase in the United States.

Why do people cohabit? Many cohabiting relationships are considered to be a temporary arrangement prior to marriage. These premarital cohabiting couples do intend to marry, but are living together prior to marriage for practical or emotional reasons.

Dating cohabitation does not last very long. This cohabiting relationship is more like a long date where partners continue to spend time together as long as it is enjoyable. The trial marriage pattern is one in which partners try out a marital type of relationship by moving in together. They're not really evaluating a particular partner; rather they are trying out the relationship of marriage. Some couple substitute cohabitation for marriage and have no intentions of marrying. Cohabitation is their preference, perhaps because they've had failed marriages in the past, are philosophically opposed to marriage, or do not want to marry for other practical or financial reasons. These relationships tend to last longer.

Same-sex couples can legally marry in Spain, Canada, Belgium, Argentina, Norway, Iceland, the Netherlands, South Africa, and Denmark.

They can also legally marry in Massachusetts, Connecticut, Iowa, Vermont, New Hampshire, and the District of Columbia. The issues facing same-sex couples tend to be similar to those of heterosexual couples: concerns about money, household chores, leisure time, sex, and children. But they do have to face additional stressors of stigma from others. Same-sex partners tend to have a more equal distribution of power within the relationship than in heterosexual couples. And when couples break up, there is a greater likelihood of still having contact with the ex because of a closer same-sex community of friends.

Let's explore mate selection. Although the age at first marriage has been steadily increasing in the United States, 25 for females and 27 for males, many do still marry while in early adulthood. One way to look at the mate selection process is to think of the marriage market as a place where social currency is exchanged. You bring with you a certain amount of social currency or qualities that make you a good potential make. And these are weighed against those things that might make you a less than ideal partner. This is taken into account when looking for a partner. Most of us do not want a "good deal" when making the exchange. Rather, we look for a

fair exchange. This is because in relationships, the person with the least interest in the relationship has the most power. So if you want an equal distribution of power, you want both parties to need the relationship equally. The majority of marriages are homogamous with respect to social class, race, age, and religion. This similarity of social characteristics is referred to as homogamy. This selection is guided by social rules of endogamy (the expectation that you will marry within certain groups such as race and class), exogamy (the expectation that you will marry outside of other groups such as your sex), and propinquity or nearness. We tend to marry those who are near because those are the people we meet and with whom we socialize.

Let's explore a few theories of love. Sternberg offers a triangular approach to love. Love has three elements, intimacy or psychological closeness, passion or physical attraction, and commitment or the conscious decision to stay together. Most of the problems people have in love relationships are about either intimacy, "We don't talk." passion, "We never hold each other anymore." or commitment, "I can't count on my partner to stay with me."

We can analyze love relationships as having one or more of these elements. Liking is intimacy only. Infatuation is a relationship based on passion alone. Empty love is based solely on commitment. Romantic love includes both intimacy and passion. Companionate love is based on commitment and intimacy. Fatuous love is characterized by passion and commitment, but no intimacy. What do we want? The ideal in the west is consummate love. We want passion, commitment, and intimacy.

John Lee explored types of love or love styles found in literature. You can look at your own style by taking the questionnaire at the end of this lesson.

Pragma is practical love based on sensible qualities. Agape is a selfless love that has the other's best interest at heart. Mania is possessive and insecure.

Eros is erotic love in which a person feels consumed. Ludus is

carefree, nonpossessive, and based on seduction. Storge is based on friendship. What's your love style?

Another way to look at relationships is to examine the extent to which partners are dependent or independent of one another.
In the A frame relationship, partners lean on one another and there is little room for growth or change.

The H frame relationship finds partners quite independent of one another. Their lives are parallel and there is little connection between the two. The M frame relationship is marked by interdependence. Partners have a close couple connection, but also a sense of self or individuality.

Ira Reiss suggests that love is not stagnant. Rather, it depends on continuous interaction and renewal to be sustained. As a relationship begins, partners find out about one another and their common interests as they establish rapport. This is deepened with mutual sharing of more personal information through self-revelation. The relationship progresses as partners become more dependent on one another in day to day life. Eventually, the partners begin to rely on one another to fulfill their needs. But it doesn't stop there. For love to continue, partners need to repeat the cycle and continue to establish rapport, engage in self-revelation, and be part of one another's lives. When partners break up, the wheel begins to turn in the other direction. Partners talk less and gradually become disengaged.

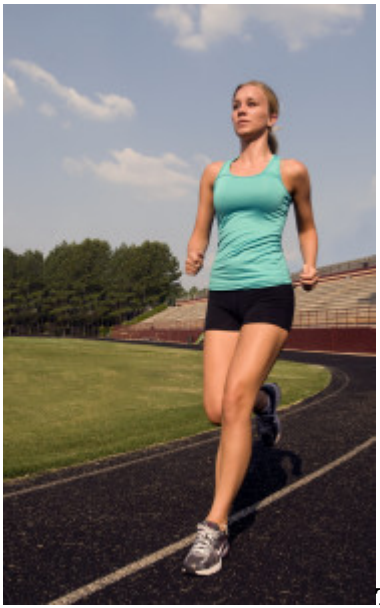
Kirsten looks at the process of disaffection or the psychological experience of breaking up. Before breaking up, couples may engage in "little fictions" or in maintaining little lies about one another in order to help the person feel good about themselves and the relationship. Flaws are seen as endearing. We're often quite forgiving and positive about our partners in the beginning. And what could be better than having someone love your flaws! But when undergoing the process of disaffection, partners become disenchanted with one another. Or perhaps, only one partner is becoming disappointed. In the beginning phase, this partner may begin to pull away psychologically or start to try to change the

partner's flaws. There may still be optimism about the future of the relationship . . . as long as the partner makes corrections. But in the middle phase, disappointment builds and there's less optimism about the future of the relationship.

In the end, a sense of hopelessness creeps in and the disappointed partner may begin to plan their departure.

In our next lesson, we will look at middle adulthood and expand upon adult relationships.

89. Physical Development



The Physiological Peak: People in their twenties and thirties are considered young adults. If you are in your early twenties, good news-you are probably at the peak of your physiological development. Your reproductive system, motor ability, strength, and lung capacity are operating at their best. Now here is the bad news. These systems will now start a slow, gradual decline so that by the time you reach your mid to late 30s, you will begin to notice signs of aging. This includes a decline in your immune system, your response time, and in your ability to recover quickly from physical exertion. For example, you may have noticed that it takes you quite some time to stop panting after running to class or taking the stairs. But, here is more good news. Getting out of shape is not an inevitable part of aging; it is probably due to the fact that you have become less physically active and have experienced greater stress. How is that good news, you ask? It's good news because it means that there are thing you can do to

combat many of these changes. So keep in mind, as we continue to discuss the life span that many of the changes we associate with aging can be turned around if we adopt healthier lifestyles.

A Healthy, but Risky Time: Doctor's visits are less frequent in early adulthood than for those in midlife and late adulthood and are necessitated primarily by injury and pregnancy (Berger, 2005). However, among the top five causes of death in young adulthood are non-intentional injury (including motor vehicle accidents), homicide, and suicide (Heron, M. P. & B. L. Smith, 2007). Cancer and heart disease complete the list. Rates of violent death (homicide, suicide, and accidents) are highest among young adult males, and vary among by race and ethnicity. Rates of violent death are higher in the United States than in Canada, Mexico, Japan, and other selected countries. Males are 3 times more likely to die in auto accidents than are females (Frieden, 2011).

Substance Abuse: Rates of violent death are influenced by substance abuse which peaks during early adulthood. Illicit drug use peaks between the ages of 19 and 22 and then begins to decline (Berk, 2007). And twenty-five percent of those who smoke cigarettes, a third of those who smoke marijuana, and 70 percent of those who abuse cocaine began using after age 17 (Volkow, 2004). Some young adults use as a way of coping with stressors from family, personal relationships, or concerns over being on one's own. Others use because they have friends who use and in the early 20s, there is still a good deal of pressure to conform. Half of all alcohol consumed in the United States is in the form of binge drinking (Frieden, 2011).

Drugs impair judgment, reduce inhibitions, and alter mood, all of which can lead to dangerous behavior. Reckless driving, violent altercations, and forced sexual encounters are some examples. Binge drinking on college campuses has received considerable media and public attention. The role alcohol plays in predicting acquaintance rape on college campuses is of particular concern. In the majority of cases of rape, the victim knows the rapist. Being intoxicated increases a female's risk of being the victim

of date or acquaintance rape (Fisher et als. in Carroll, 2007). And, she is more likely to blame herself and to be blamed by others if she was intoxicated when raped. Males increase their risk of being accused of rape if they are drunk when an incidence occurred (Carroll, 2007).

Drug and alcohol use increase the risk of sexually transmitted infections because people are more likely to engage in risky sexual behavior when under the influence. This includes having sex with someone who has had multiple partners, having anal sex without the use of a condom, having multiple partners, or having sex with someone whose history is unknown. And, as we previously discussed in our lesson on Beginnings, drugs and alcohol ingested during pregnancy have a teratogenic effect.

Sexual Responsiveness and Reproduction in Early Adulthood

Sexual Responsiveness: Men and women tend to reach their peak of sexual responsiveness at different ages. For men, sexual responsiveness tends to peak in the late teens and early twenties. Sexual arousal can easily occur in response to physical stimulation or fantasizing. Sexual responsiveness begins a slow decline in the late twenties and into the thirties although a man may continue to be sexually active. Through time, a man may require more intense stimulation in order to become aroused. Women often find that they become more sexually responsive throughout their 20s and 30s and may peak in the late 30s or early 40s. This is likely due to greater self-confidence and reduced inhibitions about sexuality.

Reproduction: For many couples, early adulthood is the time for having children. However, delaying childbearing until the late 20s or early 30s has become more common in the United States.

Couples delay childbearing for a number of reasons. Women are more likely to attend college and begin careers before starting

families. And both men and women are delaying marriage until they are in their late 20s and early 30s.

Infertility: Infertility affects about 6.1 million women or 10 percent of the reproductive age population (American Society of Reproductive Medicine [ASRM], 2000-2007). Male factors create infertility in about a third of the cases. For men, the most common cause is a lack of sperm production or low sperm production. Female factors cause infertility in another third of cases. For women, one of the most common causes of infertility is the failure to ovulate. Another cause of infertility is pelvic inflammatory disease, an infection of the female genital tract (Carroll, 2007). Pelvic inflammatory disease is experienced by 1 out of 7 women in the United States and leads to infertility about 20 percent of the time. One of the major causes of pelvic inflammatory disease is Chlamydia trachomatis, the most commonly diagnosed sexually transmitted infection in young women. Another cause of pelvic inflammatory disease is gonorrhea. Both male and female factors contribute to the remainder of cases of infertility.

Fertility treatment: The majority of infertility cases (85-90 percent) are treated using fertility drugs to increase ovulation or with surgical procedures to repair the reproductive organs or remove scar tissue from the reproductive tract. In vitro fertilization is used to treat infertility in less than 5 percent of cases. IVF is used when a woman has blocked or deformed fallopian tubes or sometimes when a man has a very low sperm count. This procedure involves removing eggs from the female and fertilizing the eggs outside the woman's body. The fertilized egg is then reinserted in the woman's uterus. The average cost of IVF is over $12,000 and the success rate is between 5 to 30 percent. IVF makes up about 99 percent of artificial reproductive procedures.

Less common procedures include gamete intra-fallopian tube transfer (GIFT) which involves implanting both sperm and ova into the fallopian tube and fertilization is allowed to occur naturally. The success rate of implantation is higher for GIFT than for IVF (Carroll, 2007). Zygote intra-fallopian tube transfer (ZIFT) is another

procedure in which sperm and ova are fertilized outside of the woman's body and the fertilized egg or zygote is then implanted in the fallopian tube. This allows the zygote to travel down the fallopian tube and embed in the lining of the uterus naturally. This procedure also has a higher success rate than IVF.

Insurance coverage for infertility is required in fourteen states, but the amount and type of coverage available varies greatly (ASRM, 2000-2007). The majority of couples seeking treatment for infertility pay much of the cost. Consequently, infertility treatment is much more accessible to couples with higher incomes. However, grants and funding sources are available for lower income couples seeking infertility treatment as well.

90. Cognitive Development

Beyond Formal Operational Thought: Post-formal Thought

In our last lesson, we discussed formal operational thought. The hallmark of this type of thinking is the ability to think abstractly or to consider possibilities and ideas about circumstances never directly experienced. Thinking abstractly is only one characteristic of adult thought, however. If you compare a 15 year old with someone in their late 30s, you would probably find that the later considers not only what is possible, but also what is likely. Why the change? The adult has gained experience and understands why possibilities do not always become realities. This difference in adult and adolescent thought can spark arguments between the generations. Here is an example. A student in her late 30s relayed such an argument she was having with her 14 year old son. The son had saved a considerable amount of money and wanted to buy an old car and store it in the garage until he was old enough to drive. He could sit in it; pretend he was driving, clean it up, and show it to his friends. It sounded like a perfect opportunity. The mother, however, had practical objections. The car could just sit for several years without deteriorating. The son would certainly change his mind about the type of car he wanted before he was old enough to drive and they would be stuck with a car that would not run. Having a car nearby would be too much temptation and the son might decide to sneak it out for a quick run around the block, etc.

Postformal thought is practical, realistic and more individualistic. As a person approaches the late 30s, chances are they make decisions out of necessity or because of prior experience and are less influenced by what others think. Of course, this is particularly true in individualistic cultures such as the United States.

Dialectical Thought

In addition to moving toward more practical considerations, thinking in early adulthood may also become more flexible and balanced. Abstract ideas that the adolescent believes in firmly may become standards by which the adult evaluates reality. Adolescents tend to think in dichotomies; ideas are true or false; good or bad; right or wrong and there is no middle ground. However, with experience, the adult comes to recognize that there is some right and some wrong in each position, some good or some bad in a policy or approach, some truth and some falsity in a particular idea. This ability to bring together salient aspects of two opposing viewpoints or positions is referred to as dialectical thought and is considered one of the most advanced aspects of postformal thinking (Basseches, 1984). Such thinking is more realistic because very few positions, ideas, situations, or people are completely right or wrong. So, for example, parents who were considered angels or devils by the adolescent eventually become just people with strengths and weaknesses, endearing qualities and faults to the adult.

Educational Concerns

In 2005, 37 percent of people in the United States between 18 and 24 had some college or an associate degree; about 30 percent of people between 25 and 34 had completed an education at the bachelor's level or higher (U. S. Bureau of the Census, 2005). Of current concern is the relationship between higher education and the workplace. Bok (2005), American educator and Harvard University President, calls for a closer alignment between the goals of educators and the demands of the economy. Companies outsource much of their work, not only to save costs, but to find workers with the skills they need. What is required to do well in today's economy? Colleges and universities, he argues, need to promote global awareness, critical thinking skills, the ability to communicate, moral reasoning, and responsibility in their students (Bok, 2006). Regional accrediting agencies and state organizations provide similar guidelines for educators. Workers need skills in listening, reading, writing, speaking, global awareness, critical thinking, civility, and computer literacy-all skills that enhance success in the workplace. The U. S. Secretary of Education, Margaret Spellings challenges colleges and universities to

demonstrate their effectiveness in providing these skills to students and to work toward increasing America's competitiveness in the global economy (U. S. Department of Education, 2006).

A quality education is more than a credential. Being able to communicate and work well with others is crucial for success. There is some evidence to suggest that most workers who lose their jobs do so because of an inability to work with others, not because they do not know how to do their jobs (Cascio, in Berger 2005). Writing, reading, being able to work with a diverse work team, and having the social skills required to be successful in a career and in society are qualities that go beyond merely earning a credential to compete for a job. Employers must select employees who are not only degreed, but who will be successful in the work environment. Hopefully, students gain these skills as they pursue their degrees. Listen to this story about the lack of rigor in higher education and the problems students face as a result: A Lack Of Rigor Leaves Students 'Adrift' In College.

91. Psychosocial Development

Gaining Adult Status

Many of the developmental tasks of early adulthood involve becoming part of the adult world and gaining independence. Young adults sometimes complain that they are not treated with respect-especially if they are put in positions of authority over older workers. Consequently, young adults may emphasize their age to gain credibility from those who are even slightly younger. "You're only 23? I'm 27!" a young adult might exclaim. (Note: This kind of statement is much less likely to come from someone in their 40s!).

The focus of early adulthood is often on the future. Many aspects of life are on hold while people go to school, go to work, and prepare for a brighter future. There may be a belief that the hurried life now lived will improve 'as soon as I finish school' or 'as soon as I get promoted' or 'as soon as the children get a little older.' As a result, time may seem to pass rather quickly. The day consists of meeting many demands that these tasks bring. The incentive for working so hard is that it will all result in better future.

Levinson's Theory

In 1978, Daniel Levinson published a book entitled *The Seasons of a Man's Life* in which he presented a theory of development in adulthood. Levinson's work was based on in-depth interviews with 40 men between the ages of 35-45. He later conducted interviews with women as well (1996). According to Levinson, these adults have an image of the future that motivates them. This image is called "the dream" and for the men interviewed, it was a dream of how

their career paths would progress and where they would be at midlife. Women held a "split dream"; an image of the future in both work and family life and a concern with the timing and coordination of the two. Dreams are very motivating. Dreams of a home bring excitement to couples as they look, save, and fantasize about how life will be. Dreams of careers motivate students to continue in school as they fantasize about how much their hard work will pay off. Dreams of playgrounds on a summer day inspire would be parents. A dream is perfect and retains that perfection as long as it remains in the future. But as the realization of it moves closer, it may or may not measure up to its image. If it does, all is well. But if it does not, the image must be replaced or modified. And so, in adulthood, plans are made, efforts follow, and plans are reevaluated. This creating and recreating characterizes Levinson's theory.

Levinson's stages are presented below (Levinson, 1978). He suggests that period of transition last about 5 years and periods of "settling down" last about 7 years. The ages presented below are based on life in the middle class about 30 years ago. Think about how these ages and transitions might be different today.

- Early adult transition (17-22): Leaving home, leaving family; making first choices about career and education
- Entering the adult world (22-28): Committing to an occupation, defining goals, finding intimate relationships
- Age 30 transition (28-33): Reevaluating those choices and perhaps making modifications or changing one's attitude toward love and work
- Settling down (33 to 40): Reinvesting in work and family commitments; becoming involved in the community
- Midlife transition (40-45): Reevaluating previous commitments; making dramatic changes if necessary; giving expression to previously ignored talents or aspirations; feeling more of a sense of urgency about life and its meaning
- Entering middle adulthood (45-50): Committing to new choices

made and placing one's energies into these commitments

Adulthood, then, is a period of building and rebuilding one's life. Many of the decisions that are made in early adulthood are made before a person has had enough experience to really understand the consequences of such decisions. And, perhaps, many of these initial decisions are made with one goal in mind-to be seen as an adult. As a result, early decisions may be driven more by the expectations of others. For example, imagine someone who chose a career path based on other's advice but now find that the job is not what was expected. The age 30 transition may involve recommitting to the same job, not because it's stimulating, but because it pays well. Settling down may involve settling down with a new set of expectations for that job. As the adult gains status, he or she may be freer to make more independent choices. And sometimes these are very different from those previously made. The midlife transition differs from the age 30 transition in that the person is more aware of how much time has gone by and how much time is left. This brings a sense of urgency and impatience about making changes. The future focus of early adulthood gives way to an emphasis on the present in midlife. (We will explore this in our next lesson.) Overall, Levinson calls our attention to the dynamic nature of adulthood.

Exercise

How well do you think Levinson's theory translates culturally? Do you think that personal desire and a concern with reconciling dreams with the realities of work and family is equally important in all cultures? Do you think these considerations are equally important in all social

classes, races and ethnic groups? Why or why not? How might this model be modified in today's economy?

Erikson's Theory

Intimacy vs. Isolation

Erikson believed that the main task of early adulthood was to establish intimate relationships. Intimate relationships are more difficult if one is still struggling with identity. Achieving a sense of identity is a life-long process, but there are periods of identity crisis and stability. And having some sense of identify is essential for intimate relationships. In early adulthood, intimacy (or emotional or psychological closeness) comes from friendships and mates.

Friendships as a source of intimacy

In our twenties, intimacy needs may be met in friendships rather than with partners. This is especially true in the United States today as many young adults postpone making long-term commitments to partners either in marriage or in cohabitation. The kinds of friendships shared by women tend to differ from those shared by men (Tannen, 1990). Friendships between men are more likely to involve sharing information, providing solutions, or focusing on activities rather than discussion problems or emotions. Men tend to discuss opinions or factual information or spend time together in an activity of mutual interest. Friendships between women are

more likely to focus on sharing weaknesses, emotions, or problems. Women talk about difficulties they are having in other relationships and express their sadness, frustrations, and joys. These differences in approaches lead to problems when men and women come together. She may want to vent about a problem she is having; he may want to provide a solution and move on to some activity. But when he offers a solution, she thinks he does not care!

Friendships between men and women become more difficult because of the unspoken question about whether the friendships will lead to a romantic involvement. It may be acceptable to have opposite-sex friends as an adolescent, but once a person begins dating or marries; such friendships can be considered threatening. Consequently, friendships may diminish once a person has a partner or single friends may be replaced with couple friends.

Partners as a source of intimacy: Dating, Cohabitation, and Mate Selection

Dating

In general, traditional dating among teens and those in their early twenties has been replaced with more varied and flexible ways of getting together. The Friday night date with dinner and a movie that may still be enjoyed by those in their 30s gives way to less formal, more spontaneous meetings that may include several couples or a group of friends. Two people may get to know each other and go somewhere alone. How would you describe a "typical" date? Who calls? Who pays? Who decides where to go? What is the purpose of the date? In general, greater planning is required for people who have additional family and work responsibilities. Teens may simply have to negotiate getting out of the house and carving out time to be with friends.

Cohabitation or Living Together

How prevalent is cohabitation? There are over 5 million heterosexual cohabiting couples in the United States and, an additional 594,000 same-sex couples share households (U. S. Census Bureau, 2006). In 2000, 9 percent of women and 12 percent of men were in cohabiting relationships (Bumpass in Casper & Bianchi, 2002). This number reflects only those couples who were together when census data were collected, however. The number of cohabiting couples in the United States today is over 10 times higher than it was in 1960.

Similar increases have also occurred in other industrialized countries. For example, rates are high in Great Britain, Australia, Sweden, Denmark, and Finland. In fact, more children in Sweden are born to cohabiting couples than to married couples. The lowest rates of cohabitation are in Ireland, Italy, and Japan (Benokraitis, 2005).

How long do cohabiting relationships last?

Cohabitation tends to last longer in European countries than in the United States. Half of cohabiting relationships in the U. S. end within a year; only 10 percent last more than 5 years. These short-term cohabiting relationships are more characteristics of people in their early 20s. Many of these couples eventually marry. Those who cohabit more than five years tend to be older and more committed to the relationship. Cohabitation may be preferable to marriage for a number of reasons. For partners over 65, cohabitation is preferable to marriage for practical reasons. For many of them, marriage would result in a loss of Social Security benefits and consequently is not an option. Others may believe that their relationship is more satisfying because they are not bound by marriage. Consider this explanation from a 62-year old woman who was previously in a long-term, dissatisfying marriage. She and her partner live in New York but spend winters in South Texas at a travel park near the beach. “There

are about 20 other couples in this park and we are the only ones who aren't married. They look at us and say, 'I wish we were so in love'. I don't want to be like them." (Author's files.) Or another couple who have been happily cohabiting for over 12 years. Both had previously been in bad marriages that began as long-term, friendly, and satisfying relationships. But after marriage, these relationships became troubled marriages. These happily cohabiting partners stated that they believe that there is something about marriage that "ruins a friendship".

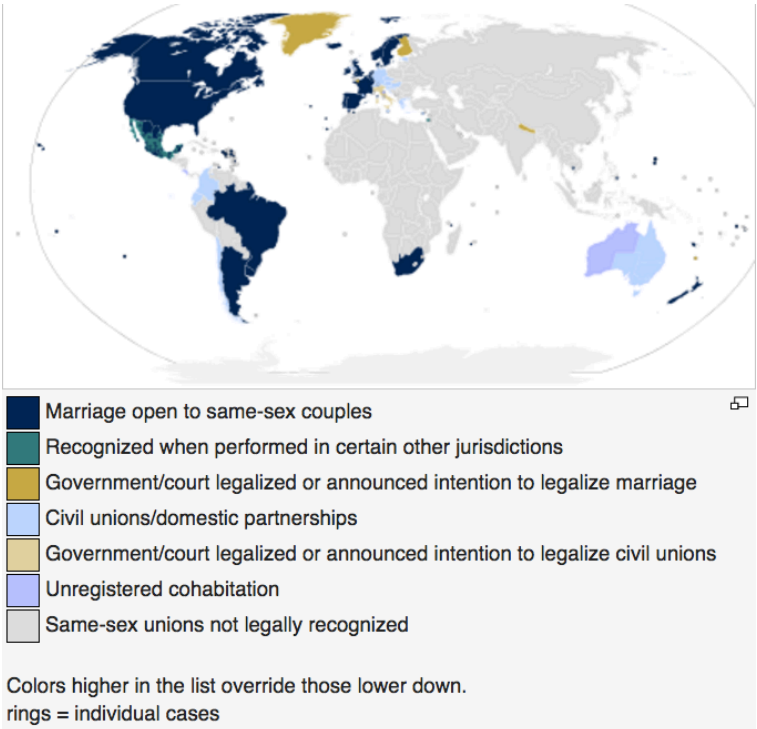
The majority of people who cohabit are between the ages of 25-44. Only about 20 percent of those who cohabit are under age 24. Cohabitation among younger adults tends to be short-lived. Relationships between older adults tend to last longer.

Why do people cohabit?

People cohabit for a variety of reasons. The largest number of couples in the United States engages in premarital cohabitation. These couples are testing the relationship before deciding to marry. About half of these couples eventually get married. The second most common type of cohabitation is dating cohabitation. These partnerships are entered into for fun or convenience and involve less commitment than premarital cohabitation. About half of these partners break up and about one-third eventually marry. Trial marriage is a type of cohabitation in which partners are trying to see what it might be like to be married. They are not testing the other person as a potential mate, necessarily; rather, they are trying to find out how being married might feel and what kinds of adjustments they might have to make. Over half of these couples split up. In the substitute marriage, partners are committed to one another and are not necessarily seeking marriage. Forty percent of these couples continue to cohabit after 5 to 7 years (Bianchi & Casper, 2000). Certainly, there

are other reasons people cohabit. Some cohabit out of a feeling of insecurity or to gain freedom from someone else (Ridley, C. Peterman, D. & Avery, A., 1978). And many cohabit because they cannot legally marry.

Same-Sex Couples



Same sex marriage is legal in 21 countries, including the United States. Many other countries either recognize same-sex couples for the purpose of immigration, grant rights for domestic partnerships, or grant common law marriage status to same-sex couples.

Same sex couples struggle with concerns such as the division of household tasks, finances, sex, and friendships as do heterosexual couples. One difference between same sex and heterosexual couples, however, is that same sex couples have to live with the added stress that comes from social disapproval and discrimination. And continued contact with an ex-partner may be more likely among homosexuals and bisexuals because of closeness of the circle of friends and acquaintances.

Photo Courtesy Salvor Gissurardottir

Mate-Selection

Contemporary young adults in the United States are waiting longer than before to marry. The median age of first marriage is 25 for women and 27 for men. This reflects a dramatic increase in age of first marriage for women, but the age for men is similar to that found in the late 1800s. Marriage is being postponed for college and starting a family often takes place after a woman has completed her education and begun a career. However, the majority of women will eventually marry (Bianchi & Casper, 2000).

Social exchange theory suggests that people try to maximize rewards and minimize costs in social relationships. Each person entering the marriage market comes equipped with assets and liabilities or a certain amount of social currency with which to attract a prospective mate. For men, assets might include earning potential and status while for women, assets might include physical attractiveness and youth.

A fair exchange

Customers in the market do not look for a 'good deal', however. Rather, most look for a relationship that is mutually beneficial or equitable. One of the reasons for this is because most a relationship in which one partner has far more assets than the other will result if power disparities and a difference in the level of commitment from each partner. According to Waller's principle of least interest, the partner who has the most to lose without the relationship (or is the most dependent on the relationship) will have the least amount of power and is in danger of being exploited. A greater balance of power, then, may add stability to the relationship.

Homogamy and the filter theory of mate selection: Societies specify through both formal and informal rules who is an appropriate mate. Consequently, mate selection is not completely left to the individual. Rules of endogamy indicate within which groups we should marry. For example, many cultures specify that people marry within their own race, social class, age group, or religion. These rules encourage homogamy or marriage between people who share social characteristics. The majority of marriages in the U. S. are homogamous with respect to race, social class, age and to a lesser extent, religion. Rules of exogamy specify the groups into which one is prohibited from marrying. For example, in most of the United States, people are not allowed to marry someone of the same sex.

According to the filter theory of mate selection (Kerckhoff & Davis, 1962), the pool of eligible partners becomes narrower as it passes through filters used to eliminate members of the pool. One such filter is propinquity or geographic proximity. Mate selection in the United States typically involves meeting eligible partners face to face. Those with whom one does not come into contact are simply not contenders. Race and ethnicity is another filter used to eliminate partners. Although interracial dating has increased in recent years and interracial marriage rates are higher than before,

interracial marriage still represents only 5.4 percent of all marriages in the United States. Physical appearance is another feature considered when selecting a mate. Age, social class, and religion are also criteria used to narrow the field of eligibles. Thus, the field of eligibles becomes significantly smaller before those things we are most conscious of such as preferences, values, goals, and interests, are even considered.

Online Relationships

What impact does the internet have on the pool of eligibles? There are hundreds of websites designed to help people meet. Some of these are geared toward helping people find suitable marriage partners and others focus on less committed involvements. Websites focus on specific populations-big beautiful women, Christian motorcyclists, parents without partners, and people over 50, etc. Theoretically, the pool of eligibles is much larger as a result. However, many who visit sites are not interested in marriage; many are already married. And so if a person is looking for a partner online, the pool must be filtered again to eliminate those who are not seeking long-term relationships. While this is true in the traditional marriage market as well, knowing a person's intentions and determining the sincerity of their responses becomes problematic online.

Photo Courtesy Vikram Kharvi

This young man offers his picture and a description of his professional status and stability. While he's looking for employment, his ad might also help him find an eligible partner online.

Online communication differs from face-to-face interaction in a number of ways. In face-to-face meetings, people have many cues upon which to base their first impressions. A person's looks, voice, mannerisms, dress, scent, and surroundings all provide information in face-to-face meetings. But in computer- mediated meetings, written messages are the only cues provided. Fantasy is used to conjure up images of voice, physical appearance, mannerisms, and so forth. The anonymity of online involvement makes it easier to become intimate without fear of interdependence. It is easier to tell one's secrets because there is little fear of loss. One can find a virtual partner who is warm, accepting, and undemanding

(Gwinnell, 1998). And exchanges can be focused more on emotional attraction than physical appearance.

When online, people tend to disclose more intimate details about themselves more quickly. A shy person can open up without worrying about whether or not the partner is frowning or looking away. And someone who has been abused may feel safer in virtual relationships. None of the worries of home or work get in the way of the exchange. The partner can be given one's undivided attention, unlike trying to have a conversation on the phone with a houseful of others or at work between duties. Online exchanges take the place of the corner café as a place to relax, have fun, and be you (Brooks, 1997). However, breaking up or disappearing is also easier. A person can simply not respond, or block e-mail.

But what happens if the partners meet face to face? People often complain that pictures they have been provided of the partner are misleading. And once couples begin to think more seriously about the relationship, the reality of family situations, work demands, goals, timing, values, and money all add new dimensions to the mix. Next we will turn our attention to theories of love.

92. Types of Love

Sternberg's Triangle of Love: Three Components

Sternberg (1988) suggests that there are three main components of love: passion, intimacy, and commitment. Love relationships vary depending on the presence or absence of each of these components. Passion refers to the intense, physical attraction partners feel toward one another. Intimacy involves the ability the share feelings, personal thoughts and psychological closeness with the other. Commitment is the conscious decision to stay together. Passion can be found in the early stages of a relationship, but intimacy takes time to develop because it is based on knowledge of the partner. Once intimacy has been established, partners may resolve to stay in the relationship. Although many would agree that all three components are important to a relationship, many love relationships do not consist of all three. Let's look at other possibilities.

Liking: In this relationship, intimacy or knowledge of the other and a sense of closeness is present. Passion and commitment, however, are not. Partners feel free to be themselves and disclose personal information. They may feel that the other person knows them well and can be honest with them and let them know if they think the person is wrong. These partners are friends. However, being told that your partner 'thinks of you as a friend' can be a devastating blow if you are attracted to them and seek a romantic involvement.

Infatuation: Perhaps, this is Sternberg's version of "love at first sight". Infatuation consists of an immediate, intense physical attraction to someone. A person who is infatuated finds it hard to think of anything but the other person. Brief encounters are played over and over in one's head; it may be difficult to eat and there may be a rather constant state of arousal. Infatuation is rather short-lived, however, lasting perhaps only a matter of months or as long as a year or so. It tends to be based on chemical attraction and an image of what one thinks the other is all about.

Fatuous Love: However, some people who have a strong physical attraction push for commitment early in the relationship. Passion and commitment are aspects of fatuous love. There is no intimacy and the commitment is premature. Partners rarely talk seriously or share their ideas. They focus on their intense physical attraction and yet one, or both, is also talking of making a lasting commitment. Sometimes this is out of a sense of insecurity and a desire to make sure the partner is locked into the relationship.

Empty Love: This type of love may be found later in a relationship or in a relationship that was formed to meet needs other than intimacy or passion (money, childrearing, status). Here the partners are committed to staying in the relationship (for the children, because of a religious conviction, or because there are no alternatives perhaps), but do not share ideas or feelings with each other and have no physical attraction for one another.

Romantic Love: Intimacy and passion are components of romantic love, but there is no commitment. The partners spend

much time with one another and enjoy their closeness but have not made plans to continue 'no matter what'. This may be true because they are not in a position to make such commitments or because they are looking for passion and closeness and are afraid it will die out if they commit to one another and start to focus on other kinds of obligations.

Companionate Love: Intimacy and commitment are the hallmarks of companionate love. Partners love and respect one another and they are committed to staying together. But their physical attraction may have never been strong or may have just died out. This may be interpreted as 'just the way things are' after so much time together or there may be a sense of regret and loss. Nevertheless, partners are good friends committed to one another.

Consummate Love: Intimacy, passion, and commitment are present in consummate love. This is often the ideal type of love. The couple shares passion; the spark has not died, and the closeness is there. They feel like best friends as well as lovers and they are committed to staying together.

Types of Lovers

Lee (1973) offers a theory of love styles or types of lovers derived from an analysis of writings about love through the centuries. As you read these, think about how these styles might become part of the types of love described above.

Pragma is a style of love that emphasizes the practical aspects of love. The pragmatic lover considers compatibility and the sensibility of their choice of partners. This lover will be concerned with goals in life, status, family reputation, attitudes about parenting, career issues and other practical concerns.

Mania is a style of love characterized by volatility, insecurity, and possessiveness. This lover gets highly upset during arguments or

breakups, may have trouble sleeping when in love, and feels emotions very intensely.

Agape is an altruistic, selfless love. These partners give of themselves without expecting anything in return. Such a lover places the partner's happiness above their own and is self-sacrificing to benefit the partner.

Eros is an erotic style of loving in which the person feels consumed. Physical chemistry and emotional involvement are important to this type of lover.

Ludus refers to a style of loving that emphasizes the game of seduction and fun. Such a lover stays away from commitment and often has several love interests at the same time. This lover does not self-disclose and in fact may prefer to keep the other guessing. This lover can end a relationship easily.

Storge is a style of love that develops slowly over time. It often begins as a friendship and becomes sexual much later. These partners are likely to remain friends even after the breakup.

Frames of Relationships

Another useful way to consider relationships is to consider the amount of dependency in the relationship. Davidson (1991) suggests three models. The **A-frame** relationship is one in which the partners lean on one another and are highly dependent on the other for survival. If one partner changes, the other is at risk of 'falling over'. This type of relationship cannot easily accommodate change and the partners are vulnerable should change occur. A breakup could be devastating.

The **H-frame** relationship is one in which the partners live parallel lives. They rarely spend time with one another and tend to have separate lives. What time they do share is usually spent meeting obligations rather than sharing intimacies. This independent type of relationship can end without suffering emotionally.

The **M-frame** relationship is interdependent. Partners have a strong sense of connection but also are able to stand alone without suffering devastation. If this relationship ends, partners will be hurt and saddened, but will still be able to stand alone. This ability comes from a strong sense of self-love. Partners can love each other without losing a sense of self. And each individual has self-respect and confidence that enriches the relationship as well as strengthens the self.

We have been looking at love in the context of many kinds of relationships. In our next lesson, we will focus more specifically on marital relationships. But before we do, we examine the dynamics of falling in and out of love.

The Process of Love and Breaking Up

Reiss (1960) provides a theory of love as process. Based on the wheel theory of love, love relationships begin with the establishment of rapport.

Rapport involves sharing likes, preferences, establishing some common interests. The next step is to begin to disclose more personal information through self-revelation. When one person begins to open up, the social expectation is that the other will follow and also share more personal information so that each has made some risk and trust is built. Sexual intimacy may also become part of the relationship. Gradually, partners begin to disclose even more about themselves and are met with support and acceptance as they build mutual dependency. With time, partners come to rely on each other for need fulfillment. The wheel must continue in order

for love to last. It becomes important for partners to continue to establish rapport by discussing the day's events, communicating about their goals and desires, and showing signs of trust. Partners must continue to rely on one another to have certain needs fulfilled. If the wheel turns backward, partners talk less and less, rely less on one another and are less likely to disclose.

Process of Disaffection: Breaking Up

When relationships are new, partners tend to give one another the benefit of the doubt and focus on what they like about one another. Flaws and imperfections do not go unnoticed; rather, they are described as endearing qualities. So, for example, the partner who has a very large nose is described as 'distinguished' or as having a 'striking feature.' This is very exhilarating because features that someone may have previously felt self-conscious about are now accepted or even appreciated. However, once partners begin the process of breaking up, these views are abandoned and questionable qualities are once again flaws and imperfections.

Kersten (1990) provides a look at the dynamics of breaking up. Although this work is primarily about divorce, the dynamics of dissolving any long-term relationship are similar. The beginning phase of breaking up involves seeing imperfections in the relationship but remaining hopeful that things will improve. This improvement will require the partner's cooperation because they are primarily at fault. So, as long as the offending partner makes the necessary changes, and of course the offended partner will provide the advice, support, and guidance required, the relationship will continue. (If you are thinking that this is not going to work-you are right. Attempts to change one's partner are usually doomed to failure. Would you want your partner to try to change you?)

Once it becomes clear that efforts to change are futile, the middle

phase is entered. This phase is marked by disappointment. Partners talk less and less, make little eye contact, and grow further apart. One may still try to make contact, but the other is clearly disengaged and is considering the benefits and costs of leaving the relationship.

In the end phase, the decision to leave has been made. The specific details are being worked out. Turning a relationship around is very difficult at this point. Trust has diminished, and thoughts have turned elsewhere. This stage is one of hopelessness.

We will explore marriage, divorce, and cohabitation more fully in our next lesson.

93. Activity: Love Attitude Scale

Introduction

So what is your love style? Your authors discussed several types of love in the text, including John Lee's six love types. The Love Attitude Scale, created by Clyde Hendrick and Susan Hendrick, measures your attitudes about each of the styles.

Directions

For each of the following statements, write the number (1-5) that most nearly describes your attitude or belief. Some of the items refer to a specific love relationship, while others refer to general attitudes and beliefs about love. Whenever possible, answer the questions with your current partner in mind. If you are not currently dating anyone, answer the questions with your most recent partner in mind. If you have never been in love, answer in terms of what you think your responses would most likely be.

For even more insight, make a copy of the questions and have your current partner complete them also. Answer the questions independently of each other and then compare your scores.

After looking at your style, type a paragraph in which you answer the following questions:

- Does these scores surprise you? Why or why not?
- What would you consider the advantages and disadvantages of these styles to be?

- What styles do you think would be most common in adolescence? Early adulthood? Adulthood? Why?

The code for the rating to be used for each statement is as follows:

SD = STRONGLY disagree; D = Disagree; N = Neutral; A = Agree; SA = STRONGLY agree

SD	D	N	A	SA
1	2	3	4	5

1. My lover and I were attracted to each other immediately after we first met
2. I try to keep my lover a little uncertain about my commitment to him/her.
3. It is hard to say exactly where friendship ends and love begins.
4. I consider what a person is going to become in life before I commit myself to him/her.
5. When things aren't right with my lover and me, my stomach gets upset.
6. I try to always help my lover through difficult times.
7. My lover and I have the right physical "chemistry" between us.
8. I believe that what my lover doesn't know about me won't hurt him/her.
9. Genuine love first requires caring for a while.
10. I try to plan my life carefully before choosing a lover.
11. When my love affairs break up, I get so depressed.
12. I would rather suffer myself than let my lover suffer.
13. Our lovemaking is very intense and satisfying.
14. I have sometimes had to keep two of my lovers from finding out about each other.
15. I expect to always be friends with the one I love.
16. It is best to love someone with a similar background.
17. Sometimes I get so excited about being in love that I can't sleep.
18. I cannot be happy unless I place my lover's happiness before

my own.

19. I feel that my lover and I were meant for each other.
20. I can get over love affairs pretty easily and quickly.
21. The best kind of love grows out of a long friendship.
22. A main consideration in choosing a lover is how he/she reflects on my family.
23. When my lover doesn't pay attention to me, I feel sick all over.
24. I am usually willing to sacrifice my own wishes to let my lover achieve his/hers.
25. My lover and I became emotionally involved rather quickly.
26. My lover would get upset if he/she knew of some of the things I've done with other people.
27. Our friendship merged gradually into love over time.
28. An important factor in choosing a partner is whether or not he/she will be a good parent.
29. When I am in love, I have trouble concentrating.
30. Whatever I own is my lover's to use as he/she chooses.
31. My lover and I really understand each other.
32. When my lover gets too dependent on me, I want to back off a little.
33. Love is really a deep friendship, not a mysterious, mystical emotion.
34. One consideration in choosing a partner is how he/she will reflect on my career.
35. I cannot relax if I suspect that my lover is with someone else.
36. When my lover gets angry with me, I still love Him/her fully and unconditionally.
37. My lover fits my ideal standards of physical beauty/ handsomeness.
38. I enjoy playing the "game of love" with a number is different partners.
39. My most satisfying love relationships have developed from good friendships.
40. Before getting very involved with anyone, I try to figure out how compatible his/her hereditary background is with mine in

case we ever have children.

41. If my lover ignores me for a while, I do stupid things to get his/her attention back.
42. I would endure all things for the sake of my lover.

Source: Hendrick, C and Hendrick, S. (1986). "A theory and method of love." Journal of Personality and Social Psychology, 50, 2, 392-402. Reprinted with permission of the American Psychological Association.

Love Attitude Scale — Scoring Instructions

The higher the score, the stronger you are on this love style

Scoring:

Eros: Add up all the numbers you circled for items 1, 7, 13, 19, 25, 31, and 37.

Eros Score: _____

Ludus: Add up all the numbers you circled for items 2, 8, 14, 20, 26, 32, and 38.

Ludus Score: _____

Storge: Add up all the numbers you circled for items 3, 9, 15, 21, 27, 33, and 39.

Storge Score: _____

Pragma: Add up all the numbers you circled for items 4, 10, 16, 22, 28, 34, and 40.

Pragma Score: _____

Mania: Add up all the numbers you circled for items 5, 11, 17, 23, 29, 35, and 41.

Mania Score: _____

Agape: Add up all the numbers you circled for items 6, 12, 18, 24, 30, 36, and 42.

Agape Score: _____

94. Work and Personality

Productivity at Work

We have already discussed expertise as part of our look at cognitive development in midlife. A person may be at their peak of performance at work during this time. Connections between work units, companies, culture, and operations may be appreciated for the first time and with that, a midlife worker may be able to contribute to an organization in new, more comprehensive ways. Midlife may also be the peak time for earning and spending to meet the demands of launching children or caring for aging parents.

Work and midlife includes many scenarios. Some experience stable careers while others experience lay-offs and find themselves back in school to gain new skills for reemployment. Others experience discrimination due to age or find it difficult to gain

employment because of the higher salary demands compared with younger, less experienced workers (Barnett, 1997). Many people over 50 seek meaning as well as income in careers entered into in midlife known as "encore careers" www.encore.org/). Some midlife adults anticipate retirement, while others may be postponing it for financial reasons. Listen to this story of *Encore Careers in the lives of Baby Boomers*.

A YouTube element has been excluded from this version of the text. You can view it online here: https://library.achievingthedream.org/hostoschilddevelopmenteducation/?p=125

The workplace today is one in which many people from various walks of life come together. Work schedules are more flexible and varied, and more work independently from home or anywhere there is an internet connection. The midlife worker must be flexible, stay current with technology, and be capable of working within a global community. And the midlife mind seeks meaningful work.

Personality in Midlife

Does the personality change in midlife? Think about your parents or other adults you've known for some time. Did their personalities change when they reached midlife? Or were they pretty much the same? Some theorists maintain that personality becomes more stable as we reach middle adulthood. Other suggest that with age comes the addition of new personality traits-one's we may not have felt comfortable showing when we were younger.

Midlife is viewed as a time of increased stability especially if compared with early adulthood or adolescence. A person's tendency toward extraversion, agreeableness, neuroticism, conscientiousness, and openness, the Big Five personality traits, is more consistent (McCrae & Costa, 2003). Midlife adults become more agreeable, but decline in openness and neuroticism.

However, midlife is also viewed as a time of change. Carl Jung believed that our personality actually matures as we get older. A healthy personality is one that is balanced. People suffer tension and anxiety when they fail to express all of their qualities. Jung believed that each of us possess a "shadow side". For example, those who are typically introverted also have an extroverted side that rarely finds expression unless we are relaxed and uninhibited. Each of us has both a masculine and feminine side but in younger years, we feel societal pressure to give expression only to one. As we get older, we may become freer to express all of our traits as the situation arises. We find gender convergence in older adults. Men become more interested in intimacy and family ties. Women may become more assertive. This gender convergence is also affected by changes in society's expectations for males and females. With each new generation we find that the roles of men and women are less stereotypic and this allows for change as well.

Again, a sense of mastery and control over one's life can help midlife adults meet the challenges of this time of life (Lachman and Firth, 2004).

Conclusion

Midlife is a period of transition. It is also a time of productivity and expertise; a time of putting things together. Midlife is perhaps the least studied period of life. The story of midlife will continue to unfold as more attention is given to it as a part of the lifespan.