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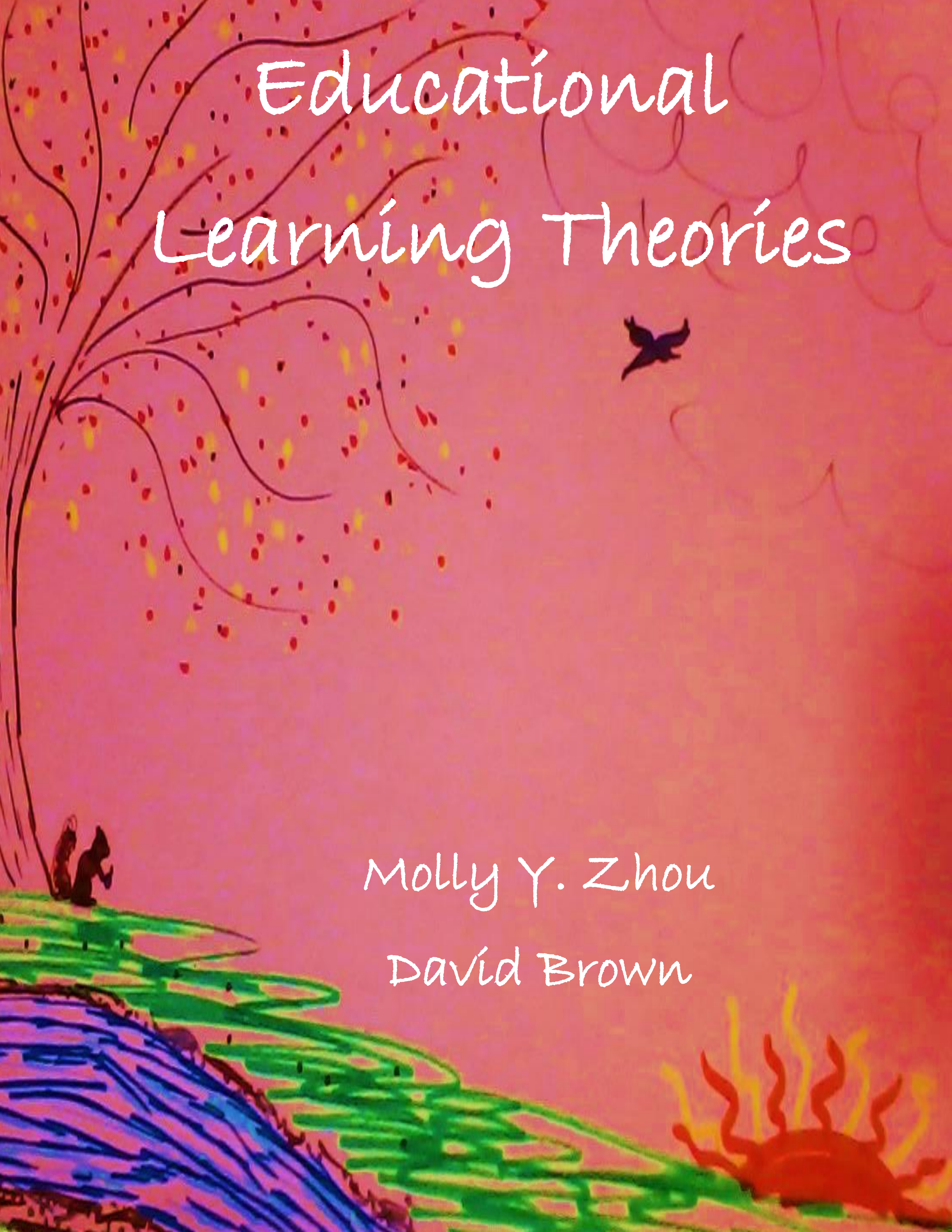

Educational Learning Theories

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David Brown

Educational Learning Theories

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December, 2017

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safety
friends
love
water
family
confidence
food
creativity
breathe

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CHAPTER 1

Behaviorism

INTRODUCTION

Behaviorism is primarily concerned with observable and measurable aspects of human behavior. In defining behavior, behaviorist learning theories emphasize changes in behavior that result from stimulus-response associations made by the learner. John B. Watson (1878-1958) and B. F. Skinner (1904-1990) are the two principal originators of behaviorist approaches to learning. Watson believed that human behavior resulted from specific stimuli that elicited certain responses. Watson's basic premise was that conclusions about human development should be based on observation of overt behavior rather than speculation about subconscious motives or latent cognitive processes (Shaffer, 2000). Watson's view of learning was based in part on the studies of Ivan Pavlov (1849-1936). Pavlov was well known for his research on a learning process called classical conditioning. Classical conditioning refers to learning that occurs when a neutral stimulus becomes associated with a stimulus that naturally produces a behavior. Skinner believed that that seemingly spontaneous action is regulated through rewards and punishment. Skinner believed that people don't shape the world, but instead, the world shapes them. Skinner also believed that human behavior is predictable, just like a chemical reaction. He is also well known for his "Skinner box," a tool to demonstrate his theory that rewarded behavior is repeated.

REQUIRED READING

What is Behaviorism?

Behaviorism is primarily concerned with observable and measurable aspects of human behavior. In defining behavior, behaviorist learning theories emphasize changes in behavior that result from stimulus-response associations made by the learner. Behavior is directed by stimuli. An individual selects one response instead of another because of prior conditioning and psychological drives existing at the moment of the action (Parkay & Hass, 2000).

Behaviorists assert that the only behaviors worthy of study are those that can be directly observed; thus, it is actions, rather than thoughts or emotions, which are the legitimate object of study. Behaviorist theory does not explain abnormal behavior in terms of the brain or its inner workings. Rather, it posits that all behavior is learned habits, and attempts to account for how these habits are formed.

In assuming that human behavior is learned, behaviorists also hold that all behaviors can also be unlearned, and replaced by new behaviors; that is, when a behavior becomes unacceptable, it can be replaced by an acceptable one. A key element to this theory of learning is the rewarded response. The desired response must be rewarded in order for learning to take place (Parkay & Hass, 2000).

In education, advocates of behaviorism have effectively adopted this system of rewards and punishments in their classrooms by rewarding desired behaviors and punishing inappropriate ones. Rewards vary, but must be important to the learner in some way. For example, if a teacher wishes to teach the behavior of remaining seated during the class period, the successful student's reward might be checking the teacher's mailbox, running an errand, or being allowed to go to the library to do homework at the end of the class period. As with all teaching methods, success depends on each student's stimulus and response, and on associations made by each learner.

Behaviorism Advocates

John B. Watson (1878-1958) and B. F. Skinner (1904-1990) are the two principal originators of behaviorist approaches to learning. Watson believed that human behavior resulted from specific stimuli that elicited certain responses. Watson's basic premise was that conclusions about human development should be based on observation of overt behavior rather than speculation about subconscious motives or latent cognitive processes (Shaffer, 2000). Watson's view of learning was based in part on the studies of Ivan Pavlov (1849-1936). Pavlov was studying the digestive process and the interaction of salivation and stomach function when he realized that reflexes in the autonomic nervous system closely linked these phenomena. To determine whether external stimuli had an affect on this process, Pavlov rang a bell when he gave food to the experimental dogs. He noticed that the dogs salivated shortly before they were given food. He discovered that when the bell was rung at repeated feedings, the sound of the bell alone (a conditioned stimulus) would cause the dogs to salivate (a conditioned response). Pavlov also found that the conditioned reflex was repressed if the stimulus proved "wrong" too frequently; if the bell rang and no food appeared, the dog eventually ceased to salivate at the sound of the bell (Figure 1.1).

Figure 1.1 Classical Conditioning (Ivan Pavlov: 1849-1936)

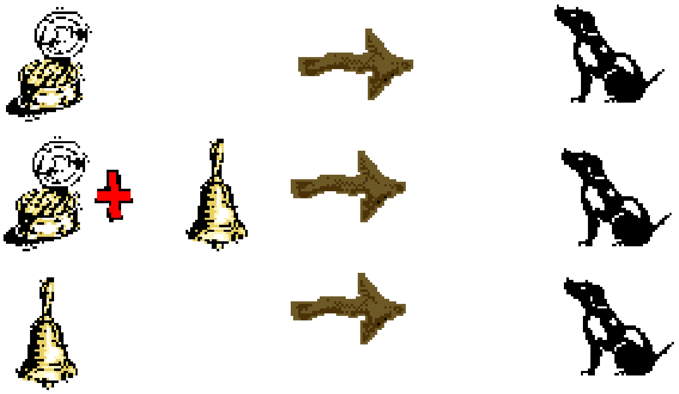

Figure 1.1. This illustration shows the steps of Classical Conditioning.
1. Food = salivation
2. Food + Stimulus = salivation (conditioned stimulus)
3. Bell alone produces salivation (conditioned response)

Expanding on Watson's basic stimulus-response model, Skinner developed a more comprehensive view of conditioning, known as operant conditioning. His model was based on the premise that satisfying responses are conditioned, while unsatisfying ones are not. Operant conditioning is the rewarding of part of a desired behavior or a random act that approaches it (Figure 1.2). Skinner remarked that "the things we call pleasant have an energizing or strengthening effect on our behavior" (Skinner, 1972, p. 74). Through Skinner's research on animals, he concluded that both animals and humans would repeat acts that led to favorable outcomes, and suppress those that produced unfavorable results (Shaffer, 2000). If a rat presses a bar and receives a food pellet, he will be likely to press it again. Skinner defined the bar-pressing response as operant, and the food pellet as a reinforcer. Punishers, on the other hand, are consequences that suppress a response and decrease the likelihood that it will occur in the future. If the rat had been shocked every time, it pressed the bar that behavior would cease. Skinner believed the habits that each of us develops result from our unique operant learning experiences (Shaffer, 2000).

Figure 1.2 Operant Conditioning (B. F. Skinner: 1904-1990)

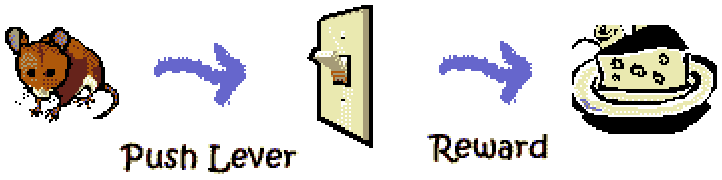

Figure 1.2. This illustration illustrates Operant Conditioning. The mouse pushes the lever and receives a food reward. Therefore, he will push the lever repeatedly in order to get the treat.

Behaviorist techniques have long been employed in education to promote behavior that is desirable and discourage that which is not. Among the methods derived from behaviorist theory for practical classroom application are contracts, consequences, reinforcement, extinction, and behavior modification.

Contracts, Consequences, Reinforcement, and Extinction

Simple contracts can be effective in helping children focus on behavior change. The relevant behavior should be identified, and the child and counselor should decide the terms of the contract. Behavioral contracts can be used in school as well as at home. It is helpful if teachers and parents work together with the student to ensure that the contract is being fulfilled. Two examples of behavior contracts are listed below:

- A student is not completing homework assignments. The teacher and the student design a contract providing that the student will stay for extra help, ask parents for help, and complete assigned work on time. The teacher will be available after school, and during free periods for additional assistance.
- A student is misbehaving in class. The teacher and student devise a behavioral contract to minimize distractions. Provisions include that the student will be punctual, will sit in front of the teacher, will raise hand with questions/comments, and will not leave his seat without permission.

Consequences occur immediately after a behavior (Figure 1.3). Consequences may be positive or negative, expected or unexpected, immediate or long-term, extrinsic or intrinsic, material or symbolic (a failing grade), emotional/interpersonal or even unconscious. Consequences occur after the "target" behavior occurs, when either positive or negative reinforcement may be given. Positive reinforcement is presentation of a stimulus that increases the probability of a response. This type of reinforcement occurs frequently in the classroom. Teachers may provide positive reinforcement by:

- Smiling at students after a correct response;
- Commending students for their work;
- Selecting them for a special project; and
- Praising students' ability to parents.

Negative reinforcement increases the probability of a response that removes or prevents an adverse condition. Many classroom teachers mistakenly believe that negative reinforcement is punishment administered to suppress behavior; however, negative reinforcement increases the likelihood of a behavior, as does positive reinforcement. Negative implies removing a consequence that a student finds unpleasant. Negative reinforcement might include:

- Obtaining a score of 80% or higher makes the final exam optional;
- Submitting all assignments on time results in the lowest grade being dropped; and
- Perfect attendance is rewarded with a "homework pass."

Punishment involves presenting a strong stimulus that decreases the frequency of a particular response. Punishment is effective in quickly eliminating undesirable behaviors. Examples of punishment include:

- Students who fight are immediately referred to the principal;
- Late assignments are given a grade of "0;"
- Three tardies to class results in a call to the parents; and
- Failure to do homework results in after-school detention (privilege of going home is removed).

Figure 1.3 Reinforcement and Punishment Comparison

	REINFORCEMENT (Behavior Increases)	REINFORCEMENT (Behavior Increases)
POSITIVE (Something is added.)	Positive Reinforcement Something is added to increase desired behavior. Ex: Smile and compliment student on good performance.	Positive Punishment Something is added to decrease undesired behavior. Ex: Give student detention for failing to follow the class rules.
NEGATIVE (Something is removed.)	Negative Reinforcement Something is removed to increase desired behavior. Ex: Give a free homework pass for turning in all assignments.	Negative Punishment Something is removed to decrease undesired behavior. Ex: Make student miss their time in recess for not following the class rules.

Extinction decreases the probability of a response by contingent withdrawal of a previously reinforced stimulus. Examples of extinction are:

- A student has developed the habit of saying the punctuation marks when reading aloud. Classmates reinforce the behavior by laughing when he does so. The teacher tells the students not to laugh, thus extinguishing the behavior.
- A teacher gives partial credit for late assignments; other teachers think this is unfair; the teacher decides to then give zeros for the late work.
- Students are frequently late for class, and the teacher does not require a late pass, contrary to school policy. The rule is subsequently enforced, and the students arrive on time.

Modeling, Shaping, and Cueing

Modeling is also known as observational learning. Albert Bandura has suggested that modeling is the basis for a variety of child behavior. Children acquire many favorable and unfavorable responses by observing those around them. A child who kicks another child after seeing this on the playground, or a student who is always late for class because his friends are late is displaying the results of observational learning.

Figure 1.4 Modeling

"Of the many cues that influence behavior, at any point in time, none is more common than the actions of others."
(Bandura, 1986, p. 45)

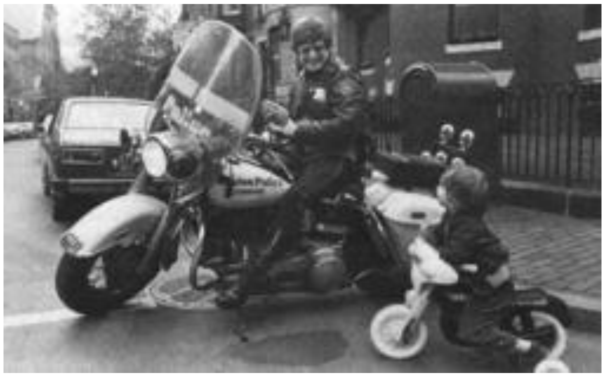

Figure 1.4. In this picture, the child is modeling the behavior of the adult. Children watch and imitate the adults around them; the result may be favorable or unfavorable behavior!

Shaping is the process of gradually changing the quality of a response. The desired behavior is broken down into discrete, concrete units, or positive movements, each of which is reinforced as it progresses towards the overall behavioral goal. In the following scenario, the classroom teacher employs shaping to change student behavior: the class enters the room and sits down, but continue to talk after the bell rings. The teacher gives the class one point for improvement, in that all students are seated. Subsequently, the students must be seated and quiet to earn points, which may be accumulated and redeemed for rewards.

Cueing may be as simple as providing a child with a verbal or non-verbal cue as to the appropriateness of a behavior. For example, to teach a child to remember to perform an action at a specific time, the teacher might arrange for him to receive a cue immediately before the action is expected rather than after it has been performed incorrectly. For example, if the teacher is working with a student that habitually answers aloud instead of raising his hand, the teacher should discuss a cue such as hand-raising at the end of a question posed to the class.

Behavior Modification

Behavior modification is a method of eliciting better classroom performance from reluctant students. It has six basic components:

1. Specification of the desired outcome (What must be changed and how it will be evaluated?) One example of a desired outcome is increased student participation in class discussions.
2. Development of a positive, nurturing environment (by removing negative stimuli from the learning environment). In the above example, this would involve a student-teacher conference with a review of the relevant material, and calling on the student when it is evident that she knows the answer to the question posed.
3. Identification and use of appropriate reinforcers (intrinsic and extrinsic rewards). A student receives an intrinsic reinforcer by correctly answering in the presence of peers, thus increasing self-esteem and confidence.
4. Reinforcement of behavior patterns develop until the student has established a pattern of success in engaging in class discussions.
5. Reduction in the frequency of rewards-a gradual decrease the amount of one-on-one review with the student before class discussion.
6. Evaluation and assessment of the effectiveness of the approach based on teacher expectations and student results. Compare the frequency of student responses in class discussions to the amount of support provided, and determine whether the student is independently engaging in class discussions. (Brewer, Campbell, & Petty, 2000)

Further suggestions for modifying behavior can be found at the mentalhealth.net web site. These include changing the environment, using models for learning new behavior, recording behavior, substituting new behavior to break bad habits, developing positive expectations, and increasing intrinsic satisfaction.

Criticisms of Behaviorism

Behaviorism can be critiqued as an overly deterministic view of human behavior by ignoring the internal psychological and mental processes; behaviorism oversimplifies the complexity of human behavior. Some would even argue that the strict nature of radical behaviorism essentially defines human beings as mechanisms without free will. The behaviorist approach has also been criticized for its inability to account for learning or changes in behavior that occur in the absence of environmental input; such occurrences signal the presence of an internal psychological or mental process. Finally, research by ethologists has shown that the principles of conditioning are not universal, countering the behaviorist claim of equipotentiality across conditioning principles. Behaviorism was developed as a counter to the introspective approach that relied primarily, if not entirely, on internal, self-reflection on conscious, mental activity. While radical behaviorism may be quite limited in its explanatory power, it served an important role in allowing psychology to develop a scientific pursuit of knowledge about human nature and behavior. Nevertheless, the link between stimulus and response is not just a simple, direct, cause and effect relationship. Factors beyond the stimulus are involved in determining the response. Actions occur based on purpose, and purpose is determined by the mind of the subject. Thus, a more complete understanding of human behavior would need to include both the external actions of the body and the inner life of the mind.

Educational Implications

Using behaviorist theory in the classroom can be rewarding for both students and teachers. Behavioral change occurs for a reason; students work for things that bring them positive feelings, and for approval from people they admire. They change behaviors to satisfy the desires they have learned to value. They generally avoid behaviors they associate with unpleasantness and develop habitual behaviors from those that are repeated often (Parkay & Hass, 2000). The entire rationale of behavior modification is that most behavior is learned. If behaviors can be learned, then they can also be unlearned or relearned. A behavior that goes unrewarded will be extinguished. Consistently ignoring an undesirable behavior will go far toward eliminating it. When the teacher does not respond angrily, the problem is forced back to its source-the student. Other successful classroom strategies are contracts, consequences, punishment and others that have been described in detail earlier. Behaviorist learning theory is not only important in achieving desired behavior in mainstream education. Special education teachers have classroom behavior modification plans to implement for their students. These plans assure success for these students in and out of school.

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CHAPTER 2

Stages of Cognitive Development

INTRODUCTION

Jean Piaget (1896-1980), a Swiss psychologist, is best known for his pioneering work on the development of intelligence in children. His studies have had a major impact on the fields of psychology and education. Piaget was born August 9, 1896, in Neuchâtel. He was educated at the University of Neuchâtel and received his doctorate in biology at age 22. Piaget became interested in psychology and he studied and carried out research first in Zürich, Switzerland, and then at the Sorbonne in Paris, where he began his studies on the development of cognitive abilities. He taught at various European universities while he continued his research and writing. In 1955, he became the director of the International Center for Epistemology at the University of Geneva, and later he was the co-director of the International Bureau of Education. He died in Geneva, on September 17, 1980.

In his work Piaget identified the child's four stages of mental growth. In the Sensorimotor Stage, occurring from birth to age 2, the child is concerned with gaining motor control and learning about physical objects. In the Preoperational Stage, from ages 2 to 7, the child is preoccupied with verbal skills. At this point the child can name objects and reason intuitively. In the Concrete Operational Stage, from ages 7 to 11, the child begins to deal with abstract concepts such as numbers and relationships. Finally, in the Formal Operational Stage, ages from adolescence to adulthood, the child begins to reason logically and systematically. Among Piaget's many books are *The Language and Thought of the Child* (1926), *Judgment and Reasoning in the Child* (1928), *The Origin of Intelligence in Children* (1954), *The Early Growth of Logic in the Child* (1964), and *Science of Education and the Psychology of the Child* (1970).

REQUIRED READING

From his observation of children, Piaget understood that children were creating ideas. They were not limited to receiving knowledge from parents or teachers; they actively constructed their own knowledge. Piaget's work provides the foundation on which constructionist theories are based. Constructionists believe that knowledge is constructed and learning occurs when children create products or artifacts. They assert that learners are more likely to be engaged in learning when these artifacts are personally relevant and meaningful (Constructivism, n.d.).

In studying the cognitive development of children and adolescents, Piaget identified four major stages: sensorimotor, preoperational, concrete operational and formal operational (Figure 2.1). Piaget believed all children pass through these phases to advance to the next level of cognitive development. In each stage, children demonstrate new intellectual abilities and increasingly complex understanding of the world. Stages cannot be "skipped;" intellectual development always follows this sequence. The ages at which children progress through the stages are averages-they vary with the environment and background of individual children. At any given time, a child may exhibit behaviors characteristic of more than one stage.

The first stage, sensorimotor, begins at birth and lasts until 18 months-2 years of age. This stage involves the use of motor activity without the use of symbols. Knowledge is limited in this stage, because it is based on physical interactions and experiences. Infants cannot predict reaction, and therefore must constantly experiment and learn through trial and error. Such exploration might include shaking a rattle or putting objects in the mouth. As they become more mobile, infants' ability to develop cognitively increases. Early language development begins during this stage. Object permanence occurs at 7-9 months, demonstrating that memory is developing. Infants realize that an object exists after it can no longer be seen.

Figure 2.1 Stages of Cognitive Development

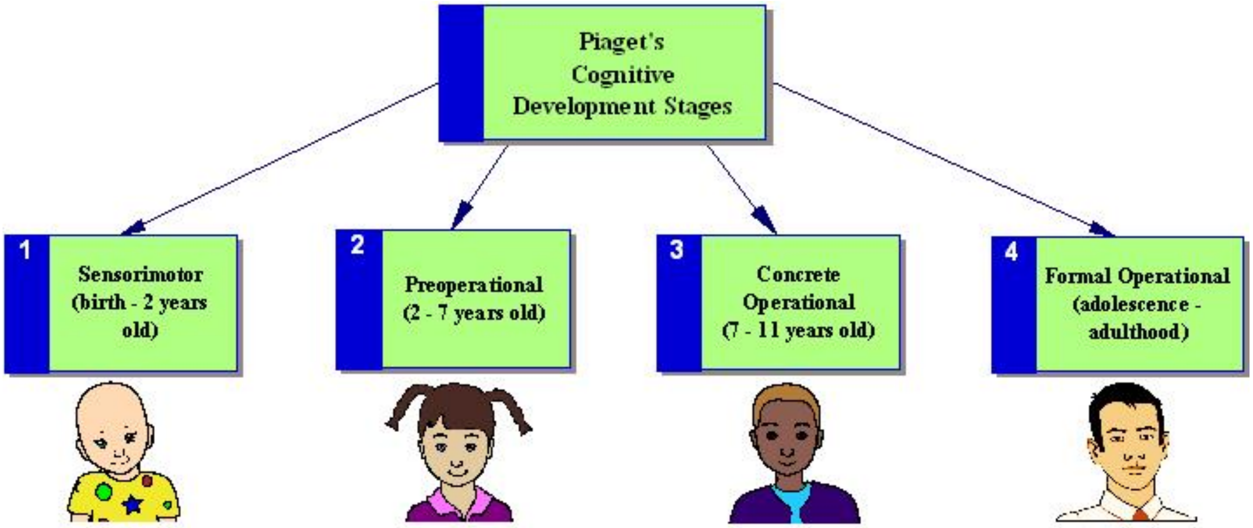

Piaget's Cognitive Development Stages
1
Sensorimotor (birth - 2 years old)
2
Preoperational (2 - 7 years old)
3
Concrete Operational (7 - 11 years old)
4
Formal Operational (adolescence - adulthood)

Figure 2.1. The inspiration web above illustrates Piaget's four cognitive development stages: sensorimotor (birth-2 years), preoperational (2-7 years), concrete operational (7-11 years), and formal operational (adolescence-adulthood). Illustrated by Tiffany Davis, Meghann Hummel, and Kay Sauers (2006).

The preoperational stage usually occurs during the period between toddlerhood (18-24months) and early childhood (7 years). During this stage children begin to use language; memory and imagination also develop. In the preoperational stage, children engage in make believe and can understand and express relationships between the past and the future. More complex concepts, such as cause and effect relationships, have not been learned. Intelligence is egocentric and intuitive, not logical.

The concrete operational stage typically develops between the ages of 7-11 years. Intellectual development in this stage is demonstrated through the use of logical and systematic manipulation of symbols, which are related to concrete objects. Thinking becomes less egocentric with increased awareness of external events, and involves concrete references.

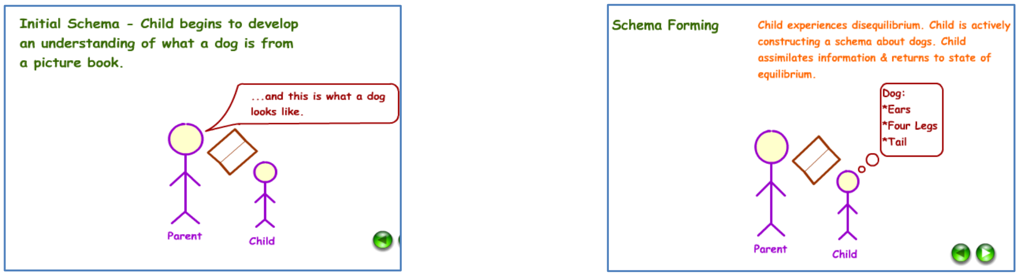
The period from adolescence through adulthood is the formal operational stage. Adolescents and adults use symbols related to abstract concepts. Adolescents can think about multiple variables in systematic ways, can formulate hypotheses, and think about abstract relationships and concepts.

Piaget believed that intellectual development was a lifelong process, but that when formal operational thought was attained, no new structures were needed. Intellectual development in adults involves developing more complex schema through the addition of knowledge.

Criticisms of Piaget's Cognitive Development Theory

Researchers during the 1960's and 1970's identified shortcomings in Piaget's theory. First, critics argue that by describing tasks with confusing abstract terms and using overly difficult tasks, Piaget under estimated children's abilities. Researchers have found that young children can succeed on simpler forms of tasks requiring the same skills. Second, Piaget's theory predicts that thinking within a particular stage would be similar across tasks. In other words, preschool children should perform at the preoperational level in all cognitive tasks. Research has shown diversity in children's thinking across cognitive tasks. Third, according to Piaget, efforts to teach children developmentally advanced concepts would be unsuccessful. Researchers have found that in some instances, children often learn more advanced concepts with relatively brief instruction. Researchers now believe that children may be more competent than Piaget originally thought, especially in their practical knowledge. See below the illustration (the animation was created by Daurice Grossniklaus and Bob Rodes, 2002; the images below were created based on the video "Illustration of Schema, Assimilation, & Accommodation" by Department of Educational Psychology and Instructional Technology University of Georgia, 2012), which demonstrates a child developing a schema for a dog (Figure 2.2) by assimilating information about the dog (Figure 2.3). The child then sees a cat, using accommodation, and compares existing knowledge of a dog to form a schema of a cat (Figure 2.4).

Figure 2.2 Schema



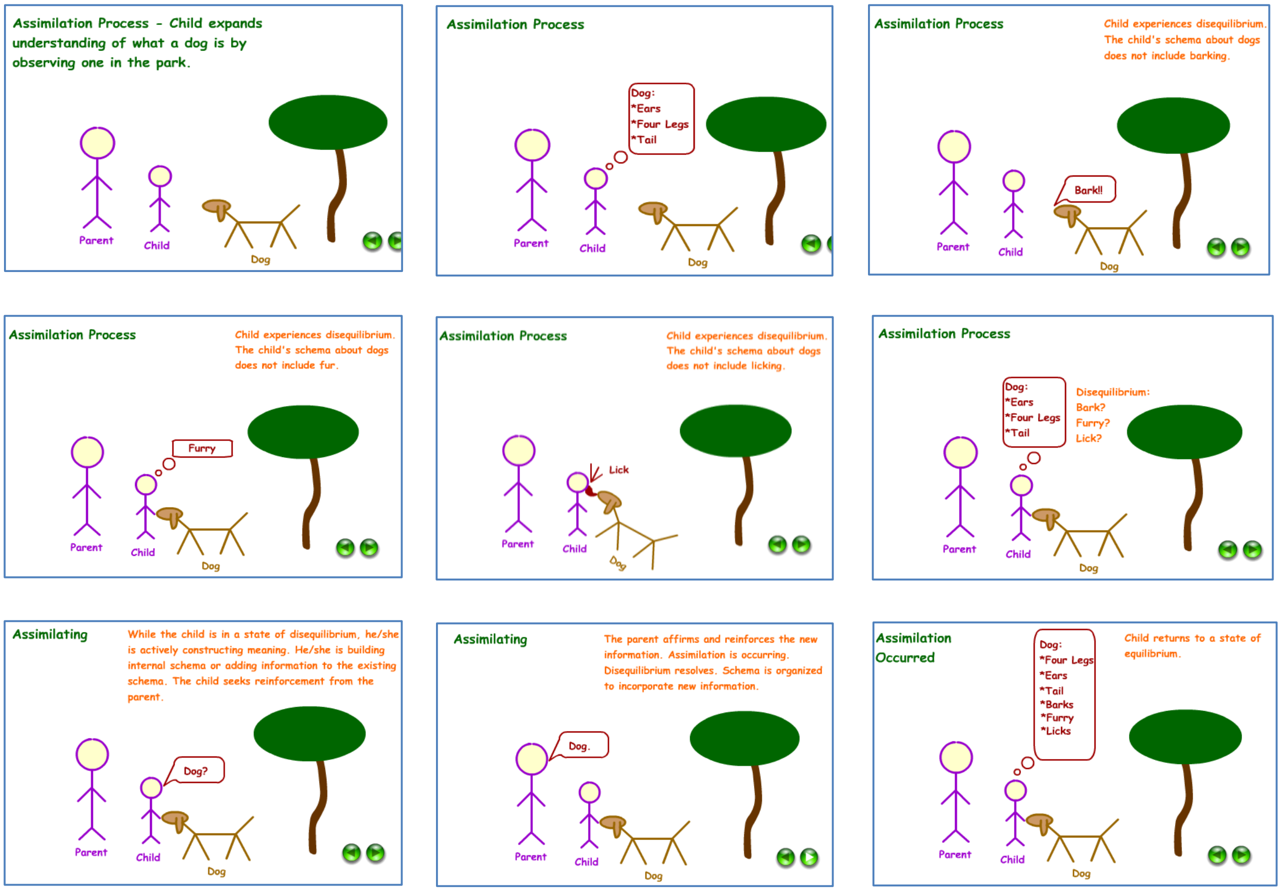
Initial Schema - Child begins to develop an understanding of what a dog is from a picture book.

Schema Forming

Child experiences disequilibrium. Child is actively constructing a schema about dogs. Child assimilates information & returns to state of equilibrium.

...and this is what a dog looks like.
Parent
Child
Dog:
*Ears
*Four Legs
*Tail
Parent
Child

Figure 2.3 Assimilation Process



Assimilation Process - Child expands understanding of what a dog is by observing one in the park.

Assimilation Process

Assimilation Process

Child experiences disequilibrium. The child's schema about dogs does not include barking.

Assimilation Process

Child experiences disequilibrium. The child's schema about dogs does not include fur.

Assimilation Process

Child experiences disequilibrium. The child's schema about dogs does not include licking.

Assimilation Process

Assimilating

While the child is in a state of disequilibrium, he/she is actively constructing meaning. He/she is building internal schema or adding information to the existing schema. The child seeks reinforcement from the parent.

Assimilating

The parent affirms and reinforces the new information. Assimilation is occurring. Disequilibrium resolves. Schema is organized to incorporate new information.

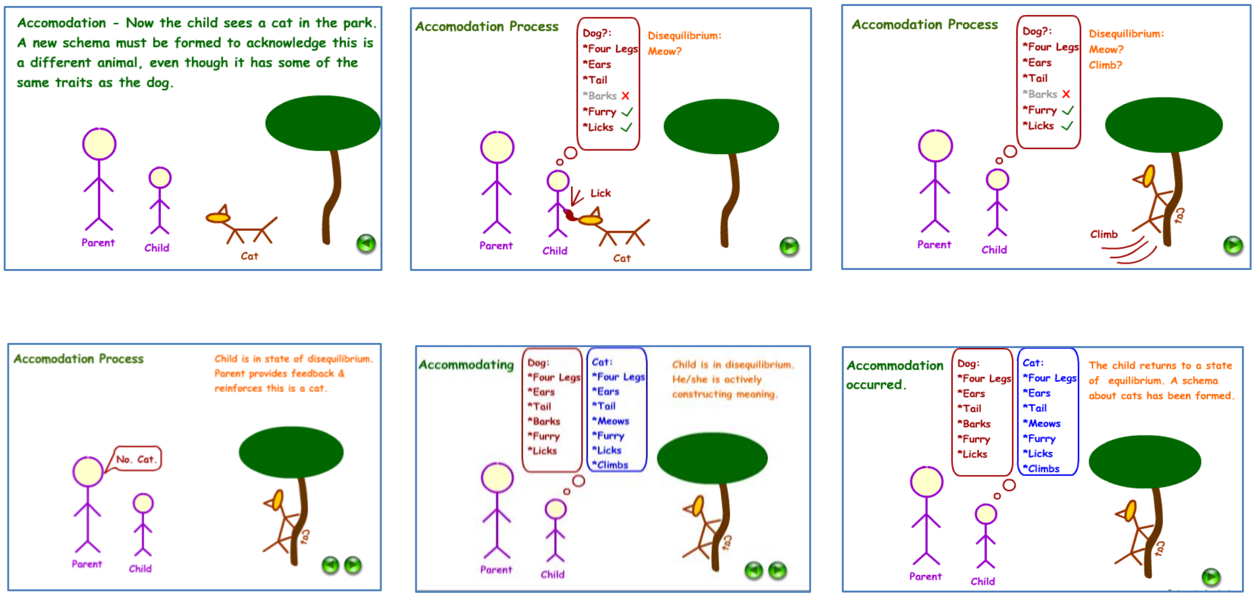
Assimilation Occurred

Child returns to a state of equilibrium.

Parent
Child
Dog
Dog:
*Ears
*Four Legs
*Tail
Parent
Child
Dog
Bark!!
Parent
Child
Dog
Furry
Parent
Child
Dog
Lick
Parent
Child
Dog
Dog:
*Ears
*Four Legs
*Tail
Disequilibrium:
Bark?
Furry?
Lick?
Parent
Child
Dog
Dog?
Parent
Child
Dog
Dog.
Parent
Child
Dog
Dog:
*Four Legs
*Ears
*Tail
*Barks
*Furry
*Licks
Parent
Child
Dog

In Figure 2.3 when the parent reads to the child about dogs, the child constructs a schema about dogs. Later, the child sees a dog in the park; through the process of assimilation the child expands his/her understanding of what a dog is. When the dog barks, the child experiences disequilibria because the child's schema did not include barking. Then the child discovers the dog is furry, and it licks the child's hand. Again, the child experiences disequilibria. By adding the newly discovered information to the existing schema the child is actively constructing meaning. At this point the child seeks reinforcement from the parent. The parent affirms and reinforces the new information. Through assimilation of the new information the child returns to a state of equilibrium.

Figure 2.4. Accommodation Process


Accomodation - Now the child sees a cat in the park. A new schema must be formed to acknowledge this is a different animal, even though it has some of the same traits as the dog.
Parent
Child
Cat
Accomodation Process
Dog?: *Four Legs *Ears *Tail *Barks ✗ *Furry ✓ *Licks ✓
Disequilibrium: Meow?
Lick
Parent
Child
Cat
Accomodation Process
Dog?: *Four Legs *Ears *Tail *Barks ✗ *Furry ✓ *Licks ✓
Disequilibrium: Meow? Climb?
Climb
Cat
Parent
Child
Accomodation Process
Child is in state of disequilibrium. Parent provides feedback & reinforces this is a cat.
No. Cat.
Parent
Child
Accommodating
Dog: *Four Legs *Ears *Tail *Barks *Furry *Licks
Cat: *Four Legs *Ears *Tail *Meows *Furry *Licks *Climbs
Child is in disequilibrium. He/she is actively constructing meaning.
Parent
Child
Accommodation occurred.
Dog: *Four Legs *Ears *Tail *Barks *Furry *Licks
Cat: *Four Legs *Ears *Tail *Meows *Furry *Licks *Climbs
The child returns to a state of equilibrium. A schema about cats has been formed.
Parent
Child

In Figure 2.4. the process of accommodation occurs when the child sees a cat in the park. A new schema must be formed, because the cat has many traits of the dog, but because the cat meows and then climbs a tree the child begins to actively construct new meaning. Again, the parent reinforces that this is a cat to resolve the child's disequilibria. A new schema about cats is then formed and the child returns to a state of equilibrium.

Educational Implications

An important implication of Piaget's theory is adaptation of instruction to the learner's developmental level. The content of instruction needs to be consistent with the developmental level of the learner. The teacher's role is to facilitate learning by providing a variety of experiences. "Discovery Learning" provides opportunities for learners to explore and experiment, thereby encouraging new understandings (Kafia & Resnick, 1996). Opportunities that allow students of differing cognitive levels to work together often encourage less mature students to advance to a more mature understanding. One further implication for instruction is the use of concrete "hands on" experiences to help children learn. Additional suggestions include:

- Provide concrete props and visual aids, such as models and/or time line;
- Use familiar examples to facilitate learning more complex ideas, such as story problems in math;
- Allow opportunities to classify and group information with increasing complexity; use outlines and hierarchies to facilitate assimilating new information with previous knowledge; and
- Present problems that require logical analytic thinking; the use of tools such as "brain teasers" is encouraged.

Huitt and Hummel (1998) asserted that only 35% of high school graduates in industrialized countries obtain formal operations and many people do not think formally during adulthood. This is significant in terms of developing instruction and performance support tools for students who are chronologically adults, but may be limited in their understanding of abstract concepts. For both adolescent and adult learners, it is important to use these instructional strategies:

- Use visual aids and models;
- Provide opportunities to discuss social, political, and cultural issues; and
- Teach broad concepts rather than facts, and to situate these in a context meaningful and relevant to the learner.

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physiological
safety
friendship
love / belonging
I'm creative
confident
self
actualization

CHAPTER 3

Social Cognitive Theory

INTRODUCTION

Albert Bandura (1925-) was born in Mundare, Alberta in 1925. He was the youngest of six children. Both of his parents were immigrants from Eastern Europe. Bandura's father worked as a track layer for the Trans-Canada railroad while his mother worked in a general store before they were able to buy some land and become farmers. Though times were often hard growing up, Bandura's parents placed great emphasis on celebrating life and more importantly family. They were also very keen on their children doing well in school. Mundare had only one school at the time so Bandura did all of his schooling in one place.

After spending a summer working in Alaska after finishing high school, Bandura went to the University of British Columbia. He graduated three years later in 1949 with the Bolocan Award in psychology. Bandura went to the University of Iowa to complete his graduate work. At the time the University of Iowa was central to psychological study, especially in the area of social learning theory. Bandura completed his Master's in 1951 followed by a Ph.D. in clinical psychology in 1952. After completing his doctorate, Bandura went onto a postdoctoral position at the Wichita Guidance Center before accepting a position as a faculty member at Stanford University in 1953. Bandura has studied many different topics over the years, including aggression in adolescents (more specifically he was interested in aggression in boys who came from intact middle-class families), children's abilities to self-regulate and self-reflect, and of course self-efficacy (a person's perception and beliefs about their ability to produce effects, or influence events that concern their lives).

Bandura is perhaps most famous for his Bobo Doll experiments in the 1960s. At the time there was a popular belief that learning was a result of reinforcement. In the Bobo Doll experiments, Bandura presented children with social models of novel (new) violent behavior or non-violent behavior towards the inflatable redounding Bobo Doll. Children who viewed the violent behavior were in turn violent towards the doll; the control group was rarely violent towards the doll. That became Bandura's social learning theory in the 1960s. Social learning theory focuses on what people learn from observing and interacting with other people. It is often called a bridge between behaviorist and cognitive learning theories because it encompasses attention, memory, and motivation. Bandura and his colleagues Dorrie and Sheila Ross continued to show that social modeling is a very effective way of learning. Bandura went on to expand motivational and cognitive processes on social learning theory. In 1986, Bandura published his second book *Social Foundations of Thought and Action: A Social Cognitive Theory,* in which he renamed his original social learning theory to be social cognitive theory. Social cognitive theory claims that learning occurs in a social context with a dynamic and reciprocal interaction of the person, environment, and behavior. Social cognitive theory posits that people are not simply shaped by that environment; they are active participants in their environment. Bandura is highly recognized for his work on social learning theory and social cognitive theory.

REQUIRED READING

The Origin of Social Cognitive Theory: Social Learning Theory

In 1961 and 1963 along with his students and colleagues, Bandura conducted a series of studies known as the Bobo doll experiments to find out why and when children display aggressive behaviors. These studies demonstrated the value of modeling for acquiring novel behaviors. These studies helped Bandura publish his seminal article and book in 1977 that expanded on the idea of how behavior is acquired (Evans & Bandura, 1989), thus social learning theory. In his article Bandura (1977a) claimed that Social Learning Theory shows a direct correlation between a person's perceived self-efficacy and behavioral change. Self-efficacy comes from four sources: "performance accomplishments, vicarious experience, verbal persuasion, and physiological states" (Bandura, 1977a, p. 195).

Social learning is also commonly referred to as observational learning, because it comes about as a result of observing models. Bandura became interested in social aspects of learning at the beginning of his career. Early theories considered behavior to be a function of the person and their environment, or a function of the interaction between the person and their environment. Bandura believed that behavior itself influences both the person and the environment, each of which in turn affects behavior and each other. The result is a complex interplay of factors known as reciprocal determinism. Social learning theory emphasizes that behavior, personal factors, and environmental factors are all equal, interlocking determinants of each other (Bandura, 1973, 1977a; Figure 3.1).

Figure 3.1 Reciprocal Determinism

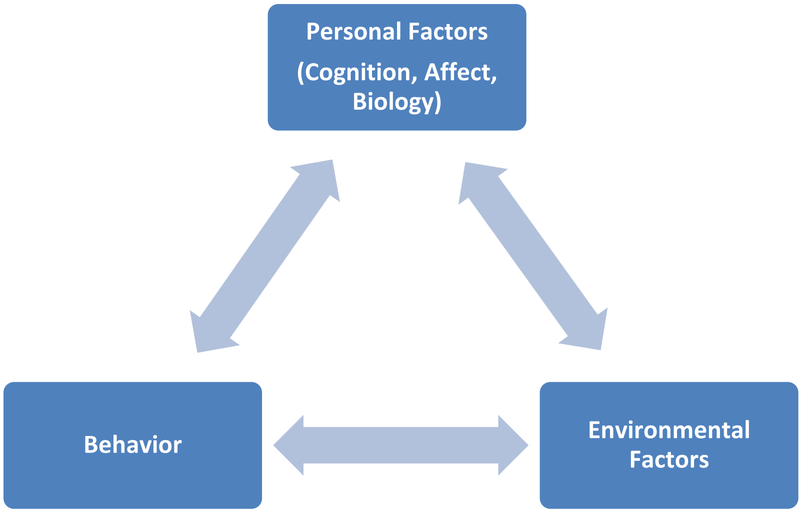

Figure 3.1. Bandura proposed the idea of reciprocal determinism, in which our behavior, Personal factors, and environmental factors all influence each other.

Reciprocal determinism can be seen in everyday observations, such as those made by Bandura and others during their studies of aggression. For example, approximately 75 percent of the time, hostile behavior results in unfriendly responses, whereas friendly acts seldom result in such consequences. With little effort, it becomes easy to recognize individuals who create negative social climates (Bandura, 1973). Thus, while it may still be true that changing environmental contingencies changes behavior, it is also true that changing behavior alters the environmental contingencies. This results in a unique perspective on freedom vs. determinism. Usually we think of determinism as something that eliminates or restricts our freedom. However, Bandura believed that individuals can intentionally act as agents of change within their environment, thus altering the factors that determine their behavior. In other words, we have the freedom to influence factors that which determine our behavior:

> …Given the same environmental constraints, individuals who have many behavioral options and are adept at regulating their own behavior will experience greater freedom than will individuals whose personal resources are limited. (Bandura, 1977a, p. 203)

It is important to note that learning can occur without a change in behavior. According to Ormrod's (2008) general principles of social learning, while a visible change in behavior is the most common proof of learning, it is not absolutely necessary. Social learning theorists say that because people can learn through observation alone, their learning may not necessarily be shown in their performance.

Overview of Social Cognitive Theory

In 1986, Bandura published his second book *Social foundations of thought and action: A social cognitive theory*, which expanded and renamed his original theory. He called the new theory Social Cognitive Theory (SCT). Bandura changed the name social learning theory to social cognitive theory to emphasize the major role cognition plays in encoding and performing behaviors. In this book, Bandura (1986) argued that human behavior is caused by personal, behavioral, and environmental influences. Social Cognitive Theory (SCT) holds that portions of an individual's knowledge acquisition can be directly related to observing others within the context of social interactions, experiences, and outside media influences. The theory states that when people observe a model performing a behavior and the consequences of that behavior, they remember the sequence of events and use this information to guide subsequent behaviors. Observing a model can also prompt the viewer to engage in behavior they already learned (Bandura, 1986, 2002). In other words, people do not learn new behaviors solely by trying them and either succeeding or failing, but rather, the survival of humanity is dependent upon the replication of the actions of others. Depending on whether people are rewarded or punished for their behavior and the outcome of the behavior, the observer may choose to replicate behavior modeled. Media provides models for a vast array of people in many different environmental settings.

Social Cognitive Theory (SCT) is a learning theory based on the idea that people learn by observing others. These learned behaviors can be central to one's personality. While social psychologists agree that the environment one grows up in contributes to behavior, the individual person (and therefore cognition) is just as important. People learn by observing others, with the environment, behavior, and cognition all as the chief factors in influencing development in a reciprocal triadic relationship. For example, each behavior witnessed can change a person's way of thinking (cognition). Similarly, the environment one is raised in may influence later behaviors, just as a father's mindset (also cognition) determines the environment in which his children are raised. The reciprocal determinism was explained in the schematization of triadic reciprocal causation (Bandura, 2002). The schema shows how the reproduction of an observed behavior is influenced by the interaction of the following three determinants:

1. Personal: Whether the individual has high or low self-efficacy toward the behavior (i.e. Get the learner to believe in his or her personal abilities to correctly complete a behavior).
2. Behavioral: The response an individual receives after they perform a behavior (i.e. Provide chances for the learner to experience successful learning as a result of performing the behavior correctly).
3. Environmental: Aspects of the environment or setting that influence the individual's ability to successfully complete a behavior (i.e. Make environmental conditions conducive for improved self-efficacy by providing appropriate support and materials). (Bandura, 2002)

Human Agency

Social Cognitive Theory is proposed in an agentic perspective (Bandura, 1986), which suggested that, instead of being just shaped by environments or inner forces, individuals are self-developing, self-regulating, self-reflecting and proactive:

> …Social cognitive theory rejects a duality of human agency and a disembodied social structure. Social systems are the product of human activity, and social systems, in turn, help to organize, guide, and regulate human affairs. However, in the dynamic interplay within the societal rule structures, there is considerable personal variation in the interpretation of, adoption of, enforcement of, circumvention of, and opposition to societal prescriptions and sanctions…freedom is conceived not just passively as the absence of constraints, but also proactively as the exercise of self-influence…(Bandura, 2006, p. 165).

Specifically, human agency operates within three modes:

- Individual Agency: A person's own influence on the environment;
- Proxy Agency: Another person's effort on securing the individual's interests;
- Collective Agency: A group of people work together to achieve the common benefits. (Pajares, Prestin, Chen, & Nabi, 2009)

Human agency has four core properties:

- Intentionality: Individuals' active decision on engaging in certain activities;
- Forethought: Individuals' ability to anticipate the outcome of certain actions;
- Self-reactiveness: Individuals' ability to construct and regulate appropriate behaviors;
- Self-reflectiveness: Individuals' ability to reflect and evaluate the soundness of their cognitions and behaviors. (Pajares, Prestin, Chen, & Nabi, 2009)

Human Capability

Evolving over time, human beings are featured with advanced neutral systems, which enable individuals to acquire knowledge and skills by both direct and symbolic terms (Bandura, 2002). Four primary capabilities are addressed as important foundations of social cognitive theory: symbolizing capability, self-regulation capability, self-reflective capability, and vicarious capability:

1. Symbolizing Capability: People are affected not only by direct experience but also indirect events. Instead of merely learning through laborious trial-and-error process, human beings are able to symbolically perceive events conveyed in messages, construct possible solutions, and evaluate the anticipated outcomes.

2. Self-regulation Capability: Individuals can regulate their own intentions and behaviors by themselves. Self-regulation lies on both negative and positive feedback systems, in which discrepancy reduction and discrepancy production are involved. That is, individuals proactively motivate and guide their actions by setting challenging goals and then making effort to fulfill them. In doing so, individuals gain skills, resources, self-efficacy and beyond.

3. Self-reflective Capability: Human beings can evaluate their thoughts and actions by themselves, which is identified as another distinct feature of human beings. By verifying the adequacy and soundness of their thoughts through enactive, various, social, or logical manner, individuals can generate new ideas, adjust their thoughts, and take actions accordingly.

4. Vicarious Capability: One critical ability human beings featured is to adopt skills and knowledge from information communicated through a wide array of mediums. By vicariously observing others' actions and their consequences, individuals can gain insights into their own activities. Vicarious capability is of great value to human beings' cognitive development in nowadays, in which most of our information encountered in our lives derives from the mass media than trial-and-error process. (Bandura, 2002)

Core Concepts of Social Cognitive Theory

Modeling/Observational Learning

Social Cognitive Theory (SCT) revolves around the process of knowledge acquisition or learning directly correlated to the observation of models. The models can be those of an interpersonal imitation or media sources. Effective modeling teaches general rules and strategies for dealing with different situations (Bandura, 1988). Modeling is the term that best describes and, therefore, is used to characterize the psychological processes that underlie matching behavior (Bandura, 1986):

> Learning would be exceedingly laborious, not to mention hazardous, if people had to rely solely on the effects of their own actions to inform them what to do. Fortunately, most human behavior is learned observationally through modeling: from observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action. (Bandura, 1977b, p. 22)

Individuals differ in the degree to which they can be influenced by models, and not all models are equally effective. According to Bandura, three factors are most influential in terms of the effectiveness of modeling situations: the characteristics of the model, the attributes of the observers, and the consequences of the model's actions. The most relevant characteristics of an influential model are high status, competence, and power. When observers are unsure about a situation, they rely on cues to indicate what they perceive as evidence of past success by the model. Such cues include general appearance, symbols of socioeconomic success (e.g., a fancy sports car), and signs of expertise (e.g., a doctor's lab coat). Since those models appear to have been successful themselves, it seems logical that observers might want to imitate their behavior. Individuals who are low in self-esteem, dependent, and who lack confidence are not necessarily more likely to be influenced by models. Bandura proposed that when modeling is used to explicitly develop new competencies, the ones who will benefit most from the situation are those who are more talented and more venturesome (Bandura, 1977b).

Despite the potential influence of models, the entire process of observational learning in a social learning environment would probably not be successful if not for four important component processes: attentional processes, retention processes, production (or reproduction) processes, and motivational processes (Bandura, 1977b, 1986). The fact that an observer must pay attention to a model might seem obvious, but some models are more likely to attract attention. Individuals are more likely to pay attention to models with whom they associate, even if the association is more cognitive than personal. It is also well-known that people who are admired, such as those who are physically attractive or popular athletes, make for attention-getting models. There are also certain types of media that are very good at getting people's attention, such as television advertisements (Bandura, 1977b, 1986). It is a curious cultural phenomenon that the television advertisements presented during the National Football League's Super Bowl have become almost as much of the excitement as the game itself (and even more exciting for those who are not football fans)!

The retention processes involve primarily an observer's memory for the modeled behavior. The most important memory processes, according to Bandura (1977b), are visual imagery and verbal coding, with visual imagery being particularly important early in development when verbal skills are limited. Once modeled behavior has been transformed into visual and/or verbal codes, these memories can serve to guide the performance of the behavior at appropriate times. When the modeled behavior is produced by the observer, the so-called production process, the re-enactment can be broken down into the cognitive organization of the responses, their initiation, subsequent monitoring, and finally the refinement of the behavior based on informative feedback. Producing complex modeled behaviors is not always an easy task:

> …A common problem in learning complex skills, such as golf or swimming, is that performers cannot fully observe their responses, and must therefore rely upon vague kinesthetic cues or verbal reports of onlookers. It is difficult to guide actions that are only partially observable or to identify the corrections needed to achieve a close match between representation and performance. (Bandura, 1977b, p. 28)

Finally, motivational processes determine whether the observer is inclined to match the modeled behavior in the first place. Individuals are most likely to model behaviors that result in an outcome they value, and if the behavior seems to be effective for the models who demonstrated the behavior. Given the complexity of the relationships between models, observers, the perceived effectiveness of modeled behavior, and the subjective value of rewards, even using prominent models does not guarantee that they will be able to create similar behavior in observers (Bandura, 1977b, 1986).

In short, for modeling /observational learning to occur, four processes exist:

- *Attention*: Observers selectively give attention to specific social behavior depending on accessibility, relevance, complexity, functional value of the behavior or some observer's personal attributes such as cognitive capability, value preference, preconceptions.

- *Retention*: Observe a behavior and subsequent consequences, then convert that observation to a symbol that can be accessed for future reenactments of the behavior. Note: When a positive behavior is shown a positive reinforcement should follow, this parallel is similar for negative behavior.

- *Production*: refers to the symbolic representation of the original behavior being translated into action through reproduction of the observed behavior in seemingly appropriate contexts. During reproduction of the behavior, a person receives feedback from others and can adjust their representation for future references.

- *Motivation*: reenacts a behavior depending on responses and consequences the observer receives when reenacting that behavior. (Bandura, 1986, 2002)

A common misconception regarding modeling is that it only leads to learning the behaviors that have been modeled. However, modeling can lead to innovative behavior patterns. Observers typically see a given behavior performed by multiple models; even in early childhood one often gets to see both parents model a given behavior. When the behavior is then matched, the observer will typically select elements from the different models, relying on only certain aspects of the behavior performed by each, and then create a unique pattern that accomplishes the final behavior. Thus, partial departures from the originally modeled behavior can be a source of new directions, especially in creative endeavors (such as composing music or creating a sculpture). In contrast, however, when simple routines prove useful, modeling can actually stifle innovation. So, the most innovative individuals appear to be those who have been exposed to innovative models, provided that the models are not so innovative as to create an unreasonably difficult challenge in modeling their creativity and innovation (Bandura, 1977b, 1986; Bandura, Ross, & Ross, 1963).

Moreover, modeling does not limit to only live demonstrations but also verbal and written behavior can act as indirect forms of modeling. Modeling not only allows students to learn behavior that they should repeat but also to inhibit certain behaviors. For instance, if a teacher glares at one student who is talking out of turn, other students may suppress this behavior to avoid a similar reaction. Teachers model both material objectives and underlying curriculum of virtuous living. Teachers should also be dedicated to the building of high self-efficacy levels in their students by recognizing their accomplishments.

Outcome Expectancies

To learn a particular behavior, people must understand what the potential outcome is if they repeat that behavior. The observer does not expect the actual rewards or punishments incurred by the model, but anticipates similar outcomes when imitating the behavior (called outcome expectancies), which is why modeling impacts cognition and behavior. These expectancies are heavily influenced by the environment that the observer grows up in; for example, the expected consequences for a DUI in the United States of America are a fine, with possible jail time, whereas the same charge in another country might lead to the infliction of the death penalty. For example, in the case of a student, the instructions the teacher provides help students see what outcome a particular behavior leads to. It is the duty of the teacher to teach a student that when a behavior is successfully learned, the outcomes are meaningful and valuable to the students.

Self-Efficacy

Social Cognitive Theory posits that learning most likely occurs if there is a close identification between the observer and the model and if the observer also has a good deal of self-efficacy. Self-efficacy is the extent to which an individual believes that they can master a particular skill. Self-efficacy beliefs function as an important set of proximal determinants of human motivation, affect, and action-which operate on action through motivational, cognitive, and affective intervening processes (Bandura, 1989).

According to Bandura (1995), self-efficacy is "the belief in one's capabilities to organize and execute the courses of action required to manage prospective situations" (p. 2). Bandura and other researchers have found an individual's self-efficacy plays a major role in how goals, tasks, and challenges are approached. Individuals with high self-efficacy are more likely to believe they can master challenging problems and they can recover quickly from setbacks and disappointments. Individuals with low self-efficacy tend to be less confident and don't believe they can perform well, which leads them to avoid challenging tasks. Therefore, self-efficacy plays a central role in behavior performance. Observers who have high level of self-efficacy are more likely to adopt observational learning behaviors. Self-efficacy can be developed or increased by:

- *Mastery experience*: which is a process that helps an individual achieve simple tasks that lead to more complex objectives.
- *Social modeling*: provides an identifiable model that shows the processes that accomplish a behavior.
- *Improving physical and emotional states*: refers to ensuring a person is rested and relaxed prior to attempting a new behavior. The less relaxed, the less patient, the more likely they won't attain the goal behavior.
- *Verbal persuasion*: is providing encouragement for a person to complete a task or achieve a certain behavior. (McAlister, Perry, & Parcel, 2008)

For example, students become more effortful, active, pay attention, highly motivated and better learners when they perceive that they have mastered a particular task (Bandura, 1993). It is the duty of the teacher to allow student to develop and perceive their efficacy by providing feedback to understand their level of proficiency. Teachers should ensure that the students have the knowledge and strategies they need to complete the tasks. Self-efficacy development is an exploring human agency and human capability process. Young children have little understanding of what they can and cannot do, so the development of realistic self-efficacy is a very important process:

> …Very young children lack knowledge of their own capabilities and the demands and potential hazards of different courses of action. They would repeatedly get themselves into dangerous predicaments were it not for the guidance of others. They can climb to high places, wander into rivers or deep pools, and wield sharp knives before they develop the necessary skills for managing such situations safely…Adult watchfulness and guidance see young children through

> this early formative period until they gain sufficient knowledge of what they can do and what different situations require in the way of skills. (Bandura, 1986, p. 414)

During infancy, the development of perceived causal efficacy, in other words the perception that one has affected the world by one's own actions, appears to be an important aspect of developing a sense of self. As the infant interacts with its environment, the infant is able to cause predictable events, such as the sound that accompanies shaking a rattle. The understanding that one's own actions can influence the environment is something Bandura refers to as personal agency, the ability to act as an agent of change in one's own world. The infant also begins to experience that certain events affect models differently than the child. For example, if a model touches a hot stove it does not hurt the infant, so the infant begins to recognize their uniqueness, their actual existence as an individual. During this period, interactions with the physical environment may be more important than social interactions, since the physical environment is more predictable, and therefore easier to learn about (Bandura, 1986, 1997). Quickly, however, social interaction becomes highly influential.

Not only does the child learn a great deal from the family, but as they grow peers become increasingly important. As the child's world expands, peers bring with them a broadening of self-efficacy experiences. This can have both positive and negative consequences. Peers who are most experienced and competent can become important models of behavior. However, if a child perceives themselves as socially inefficacious, but does develop self-efficacy in coercive, aggressive behavior, then that child is likely to become a bully. In the midst of this effort to learn socially acceptable behavior, most children also begin attending school, where the primary focus is on the development of cognitive efficacy. For many children, unfortunately, the academic environment of school is a challenge. Children quickly learn to rank themselves (grades help, both good and bad), and children who do poorly can lose the sense of self-efficacy that is necessary for continued effort at school. According to Bandura, it is important that educational practices focus not only on the content they provide, but also on what they do to children's beliefs about their abilities (Bandura, 1986, 1997).

As children continue through adolescence toward adulthood, they need to assume responsibility for themselves in all aspects of life. They must master many new skills, and a sense of confidence in working toward the future is dependent on a developing sense of self-efficacy supported by past experiences of mastery. In adulthood, a healthy and realistic sense of self-efficacy provides the motivation necessary to pursue success in one's life. Poorly equipped adults, wracked with self-doubt, often find life stressful and depressing. Even psychologically healthy adults must eventually face the realities of aging, and the inevitable decline in physical status. There is little evidence, however, for significant declines in mental states until very advanced old age. In cultures that admire youth, there may well be a tendency for the aged to lose their sense of self-efficacy and begin an inexorable decline toward death. But in societies that promote self-growth throughout life, and who admire elders for their wisdom and experience, there is potential for aged individuals to continue living productive and self-fulfilling lives (Bandura, 1986, 1997).

In summary, as we learned more about our world and how it works, we also learned that we can have a significant impact on it. Most importantly, we can have a direct effect on our immediate personal environment, especially with regard to personal relationships, behaviors, and goals. What motivates us to try influencing our environment is specific ways in which we believe, indeed, we can make a difference in a direction we want in life. Thus, research has focused largely on what people think about their efficacy, rather than on their actual ability to achieve their goals (Bandura, 1997).

Self-Regulation

Self-regulation and self-efficacy are two elements of Bandura's theory that rely heavily on cognitive processes. They represent an individual's ability to control their behavior through internal reward or punishment in the case of self-regulation, and their beliefs in their ability to achieve desired goals as a result of their own actions, in the case of self-efficacy. Bandura never rejects the influence of external rewards or punishments, but he proposes that including internal, self-reinforcement and self-punishment expands the potential for learning:

> …Theories that explain human behavior as solely the product of external rewards and punishments present a truncated image of people because they possess self-reactive capacities that enable them to exercise some control over their own feelings, thoughts, and actions. Behavior is therefore regulated by the interplay of self-generated and external sources of influence…(Bandura, 1977b, p. 129).

Self-regulation is a general term that includes both self-reinforcement and self-punishment. Self-reinforcement works primarily through its motivational effects. When an individual sets a standard of performance for themselves, they judge their behavior and determine whether or not it meets the self-determined criteria for reward. Since many activities do not have absolute measures of success, the individual often sets their standards in relative ways. For example, a weight-lifter might keep track of how much total weight they lift in each training session, and then monitor their improvement over time or as each competition arrives. Although competitions offer the potential for external reward, the individual might still set a personal standard for success, such as being satisfied only if they win at least one of the individual lifts. The standards that individuals set for themselves can be learned through modeling. This can create problems when models are highly competent, much more so than the observer is capable of performing (such as learning the standards of a world-class athlete). Children, however, seem to be more inclined to model the standards of low-achieving or moderately competent models, setting standards that are reasonably within their own reach (Bandura, 1977b). According to Bandura, the cumulative effect of setting standards and regulating one's own performance in terms of those standards can lead to judgments about one's self. Within a social learning context, negative self-concepts arise when one is prone to devalue oneself, whereas positive self-concepts arise from a tendency to judge oneself favorably (Bandura, 1977b). Overall, the complexity of this process makes predicting the behavior of an individual rather difficult, and behavior often deviates from social norms in ways that would not ordinarily be expected. However, this appears to be the case in a variety of cultures, suggesting that it is indeed a natural process for people (Bandura & Walters, 1963).

Impact of Social Cognitive Theory

Social Cognitive Theory (SCT) has influenced many areas of inquiry including media, health education, and morality. Social cognitive theory is often applied as a theoretical framework of studies pertained to media representation regarding race, gender, age and beyond (Aubrey, 2004; Mastro & Stern, 2003; Raman, Harwood, Weis, Anderson, & Miller, 2008). Social cognitive theory suggested heavily repeated images presented in mass media can be potentially processed and encoded by the viewers (Bandura, 2011). Media content analytic studies examine the substratum of media messages that viewers are exposed to, which could provide an opportunity to uncover the social values attached to these media representations (Raman, Harwood, Weis, Anderson, & Miller, 2008). Although media contents studies cannot directly test the cognitive process, findings can offer an avenue to predict potential media effects from modeling certain contents, which provides evidence and guidelines for designing subsequent empirical work (Nabi & Clark, 2008; Raman, Harwood, Weis, Anderson, & Miller, 2008). Social cognitive theory is pervasively employed in studies examining attitude or behavior changes triggered by the mass media. As Bandura suggested, people can learn how to perform behaviors through media modeling (Bandura, 2002).

Social Cognitive theory has been widely applied in media studies pertained to sports, health, education and beyond. For instance, Hardin and Greer (2009) examined the gender-typing of sports within the theoretical framework of social cognitive theory, suggesting that sports media consumption and gender-role socialization significantly related with gender perception of sports in American college students. In series TV programming, according to social cognitive theory, the awarded behaviors of liked characters are supposed to be followed by viewers, while punished behaviors are supposed to be avoided by media consumers. However, in most cases, protagonists in TV shows are less likely to experience the long-term suffering and negative consequences caused by their risky behaviors, which could potentially undermine the punishments conveyed by the media, leading to a modeling of the risky behaviors. Nabi and Clark (2008) conducted experiments about individual's attitudes and intentions consuming various portrayals of one-night stand sex-unsafe and risky sexual behavior, finding that individuals who had not previously experience one-night stand sex, consuming media portrayals of this behavior could significantly increase their expectations of having a one-night stand sex in the future, although negative outcomes were represented in TV shows.

In health communication, Social Cognitive Theory (SCT) has been applied in research related to smoking quit, HIV prevention, safe sex behaviors, and so on (Bandura 1994, 2004). For example, Martino, Collins, Kanouse, Elliott, and Berry (2005) examined the relationship between the exposure to television's sexual content and adolescents' sexual behavior through the lens of social cognitive theory, confirming the significant relationship between the two variables among white and African American groups; however, no significant correlation was found between the two variables in the ethic group of Hispanics, indicating that peer norm could possibly serve as a mediator of the two examined variables.

In public health, Miller's (2005) study found that choosing the proper gender, age, and ethnicity for models ensured the success of an AIDS campaign to inner city teenagers. This occurred because participants could identify with a recognizable peer, have a greater sense of self-efficacy, and then imitate the actions to learn the proper preventions and actions. A study by Ahmed (2009) looked to see if there would be an increase in breastfeeding by mothers of preterm infants when exposed to a breastfeeding educational program guided by SCT. Sixty mothers were randomly assigned to either participate in the program or they were given routine care. The program consisted of SCT strategies that touched on all three SCT determinants: personal-showing models performing breastfeeding correctly to improve self-efficacy, behavioral -weekly check-ins for three months reinforced participants' skills, environmental-mothers were given an observational checklist to make sure they successfully completed the behavior. The author found that mothers exposed to the program showed significant improvement in their breastfeeding skills, were more likely to exclusively breastfeed, and had fewer problems then the mothers who were not exposed to the educational program.

In morality development, Social Cognitive Theory (SCT) emphasizes a large difference between an individual's ability to be morally competent and morally performing. Moral competence involves having the ability to perform a moral behavior, whereas moral performance indicates actually following one's idea of moral behavior in a specific situation (Santrock, 2008). Moral competencies include:

- what an individual is capable of
- what an individual knows
- what an individual's skills are
- an individual's awareness of moral rules and regulations
- an individual's cognitive ability to construct behaviors

As far as an individual's development is concerned, moral competence is the growth of cognitive-sensory processes; simply put, being aware of what is considered right and wrong. By comparison, moral performance is influenced by the possible rewards and incentives to act a certain way (Santrock, 2008). For example, a person's moral competence might tell them that stealing is wrong and frowned upon by society; however, if the reward for stealing is a substantial sum, their moral performance might indicate a different line of thought. Therein lies the core of social cognitive theory.

For the most part, social cognitive theory remains the same for various cultures. Since the concepts of moral behavior did not vary much between cultures (as crimes like murder, theft, and unwarranted violence are illegal in virtually every society), there is not much room for people to have different views on what is morally right or wrong. The main reason that social cognitive theory applies to all nations is because it does not say what is moral and immoral; it simply states that we can acknowledge these two concepts. Our actions in real-life scenarios are based on whether we believe the action is moral and whether the reward for violating our morals is significant enough, and nothing else (Santrock, 2008).

Continued Impact of Social Cognitive Theory

Bandura is still influencing the world with expansions of Social Cognitive Theory (SCT). SCT has been applied to many areas of human functioning such as career choice and organizational behavior as well as in understanding classroom motivation, learning, and achievement (Lent, Brown, & Hackett, 1994). Bandura (2001) brought SCT to mass communication in his journal article that stated the theory could be used to analyze how "symbolic communication influences human thought, affect and action" (p. 3). The theory shows how new behavior diffuses through society by psychosocial factors governing acquisition and adoption of the behavior. Bandura’s (2011) book chapter “The Social and Policy Impact of Social Cognitive Theory” to extend SCT's application in health promotion and urgent global issues, which provides insight into addressing global problems through a macro social lens, aiming at improving equality of individuals' lives under the umbrellas of SCT. This work focuses on how SCT impacts areas of both health and population effects in relation to climate change. He proposes that these problems could be solved through television serial dramas that show models similar to viewers performing the desired behavior. On health, Bandura (2011) writes that currently there is little incentive for doctors to write prescriptions for healthy behavior, but he believes the cost of fixing health problems start to outweigh the benefits of being healthy. Bandura argues that we are on the cusp of moving from a disease model (focusing on people with problems) to a health model (focusing on people being healthy) and SCT is the theory that should be used to further a healthy society. On Population, Bandura (2011) states population growth is a global crisis because of its correlation with depletion and degradation of our planet's resources. Bandura argues that SCT should be used to get people to use birth control, reduce gender inequality through education, and to model environmental conservation to improve the state of the planet. Green and Peil (2009) reported he has tried to use cognitive theory to solve a number of global problems such as environmental conservation, poverty, soaring population growth, etc.

Criticism of Social Cognitive Theory

One of the main criticisms of the social cognitive theory is that it is not a unified theory. This means that the different aspects of the theory may not be connected. For example, researchers currently cannot find a connection between observational learning and self-efficacy within the social-cognitive perspective. The theory is so broad that not all of its component parts are fully understood and integrated into a single explanation of learning. The findings associated with this theory are still, for the most part, preliminary. The theory is limited in that not all social learning can be directly observed. Because of this, it can be difficult to quantify the effect that social cognition has on development. Finally, this theory tends to ignore maturation throughout the lifespan. Because of this, the understanding of how a child learns through observation and how an adult learns through observation are not differentiated, and factors of development are not included.

Educational Implications of Social Cognitive Theory

An important assumption of Social Cognitive Theory is that personal determinants, such as self-reflection and self-regulation, do not have to reside unconsciously within individuals. People can consciously change and develop their cognitive functioning. This is important to the proposition that self-efficacy too can be changed, or enhanced. From this perspective, people are capable of influencing their own motivation and performance according to the model of triadic reciprocality in which personal determinants (such as self-efficacy), environmental conditions (such as treatment conditions), and action (such as practice) are mutually interactive influences. Improving performance, therefore, depends on changing some of these influences. In teaching and learning, the challenge upfront is to 1) get the learner to believe in his or her personal capabilities to successfully perform a designated task; 2) provide environmental conditions, such as instructional strategies and appropriate technology, that improve the strategies and self-efficacy of the learner; and 3) provide opportunities for the learner to experience successful learning as a result of appropriate action (Self-efficacy Theory, n.d.). Accordingly, the theory itself has numerous implications in classroom teaching and learning practices:

1. Students learn a great deal simply by observing others;
2. Describing the consequences of behavior increases appropriate behaviors, decreasing inappropriate ones; this includes discussing the rewards of various positive behaviors in the classroom;
3. Modeling provides an alternative to teaching new behaviors. To promote effective modeling, teachers must ensure the four essential conditions exist: attention, retention, production, and motivation (reinforcement and punishment);
4. Instead of using shaping, an operant conditioning strategy, teachers will find modeling is a faster and more efficient means of teaching new knowledge, skills, and dispositions;
5. Teachers must model appropriate behaviors and they do not model inappropriate behaviors;
6. Teachers should expose students to a variety of models including peers and other adult models; this is important to break down stereotypes;
7. Modeling also includes modeling of interest, thinking process, attitudes, instructional materials, media (TV and advertisement), academic work achievement and progress, encouragement, emotions, etc. in the physical, mental and emotional aspects of development.
8. Students must believe that they are capable of accomplishing a task; it is important for students to develop a sense of self-efficacy. Teachers can promote such self-efficacy by having students receive confidence-building messages, watch others be successful, and experience success on themselves;
9. Teachers should help students set realistic expectations ensuring that expectations are realistically challenging. Sometimes a task is beyond a student's ability;
10. Self-regulation techniques provide an effective method for improving student behaviors.

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CHAPTER 4

Sociocultural Theory

INTRODUCTION

Lev Semyonovich Vygotsky (1896-1934) was born in Russia in 1896. He graduated with a law degree from Moscow University. Vygotsky's first big research project was in 1925 with a focus on psychology of art. A few years later, he pursued a career as a psychologist working with Alexander Luria and Alexei Leontiev. Together, they began the Vygotskian approach to psychology. Despite receiving no formal training in psychology, Vygotsky was fascinated by it. After his death of tuberculosis in 1934, his ideas were repudiated by the government. However, his ideas were kept alive by his students. When the Cold War ended in 1960s, Vygotsky's works were introduced to the English-speaking world. Vygotsky has written several articles and books on his theories and psychology, including *Thought and Language*, a widely recognized classic foundational work of cognitive science, published in 1934, the same year after his death.

Vygotsky is best known for being an educational psychologist with a sociocultural theory. This theory suggests that social interaction leads to continuous step-by-step changes in children's thought and behavior that can vary greatly from culture to culture (Woolfolk, 1998). Basically, Vygotsky's theory suggests that development depends on interaction with people and the tools that the culture provides to help form their own view of the world. There are three ways a cultural tool can be passed from one individual to another. The first one is imitative learning, where one person tries to imitate or copy another. The second way is by instructed learning which involves remembering the instructions of the teacher and then using these instructions to self-regulate. The final way that cultural tools are passed on to others is through collaborative learning, which involves a group of peers who strive to understand each other and work together to learn a specific skill (Tomasello, Kruger, & Ratner, 1993).

REQUIRED READING

Discussion is given on the contribution of Vygotsky’s ideas to the understanding of the relation between the social world and cognitive development. Particular attention is given to the significance of culture, the role of language, and the student’s relationship with and development within this social world. In doing so, some similarities and contrasts between other learning theorists, specifically Piaget, are briefly discussed. Vygotsky’s views of the integrated and dynamic social nature of learning are described, and the notion of a zone of proximal development, which utilizes such ideas, is introduced. Vygotsky’s ideas on cognitive development are shown to lead to student-centered and a co-constructivist basis of learning, in which the student potential within the social context is accommodated.

The relationship between the social world and cognitive development has been considered by several investigators, such as Piaget (1959), Vygotsky (1978), Bandura (1977), Rogoff (1990), and Wood (1998). A commonality of the various theories is that student learning is not viewed as a simple process of information transfer from a source (teacher, parent, computer), but often involves an active social interaction in which, for example, a student constructs knowledge through discovery and experiment (Piaget), learns through imitation or observation (Bandura), or relies upon teacher support which is congruent with the student’s immediate (proximal) potential for learning (Vygotsky). The work of Vygotsky gives particular attention to the inter-relationships between macro-social (i.e. cultural-historical) and micro-social (i.e. interpersonal) influences on cognitive development, and thus social influences on learning in a broad sense. External social forces are viewed as important in the learner’s development, in which the learner is considered an apprentice (see also Rogoff, 1990) requiring the guidance, facilitation and support of teachers. This view is often contrasted with that of Piaget’s theory, in which the main forces driving cognitive development of a student are seen as within the individual (i.e. the student as a scientist), constrained to some extent by developmental stages (Lefrancois, 1999).

In the following sections, attention will be given to the ideas of Vygotsky on the relationship between the social world and cognitive development. In particular, the influences of culture, history and language on development will be considered, and a proposed mechanism of cognitive development through notions of student potential described. The specific implications of these ideas for educators will then be considered.

Cognitive Development and the Social World

As indicated above, the social world as defined by Vygotsky considers not only the interpersonal interactions between, say, a student and teacher, or student and peer, but also the broader sociocultural and historical influences on learning and the learning environment. The underlying themes of Vygotsky's theory on cognitive development have thus often been summarized as: (i) the significance of culture, (ii) the role of a principal proponent of culture: language, and (iii) the student's relationship with and development within this sociocultural world. In this context, culture is viewed as socially accepted behaviors, attitudes, and beliefs, and is constructed through human societal products such as institutions, symbol systems, and tools such as language. Culture in this sense is a dynamic outcome of historical events and developments, and thus products of human development. However, as emphasized by Vygotsky, at any particular historical time, culture itself will influence human mental functioning and behavior, and thus a complex integrated relationship between the cultural environment and personal development. In other words, humans are not only producing culture, but are also products of culture themselves.

The cultural influences on childhood development can be exemplified through the elementary and higher mental notions of Vygotsky. The former describes innate functions or characteristics of a young child such as responding to a mother's voice and crying for a need. In the course of development, perhaps through operant conditioning, imitation, perception or some limited cognitive evaluation, elementary functions are gradually transformed into higher mental functions such as problem solving, logic, and propositional and hypothetical thinking. Vygotsky believed that this transformation is strongly influenced by culture. For example, culture results in language and other symbolism which perhaps define non-primitive consciousness (see below), and create the social processes and pressures (motives) for adopting the patterns of behavior and attitudes which are characteristic of that culture.

Vygotsky believed that language makes thought possible and is thus the basis of consciousness. Without language his view was that human development could not exceed that of primitive sense and perception functions, characteristic of lower forms of mammalian life. Language was also seen as the tool of culture which enables social interaction, and thus the direction of behavior and attitudes, and indeed the propagation and development of culture itself. The specific and early relationship of language and cognition can be identified through three key stages in the development of speech: social, egocentric, and inner speech (Vygotsky, 1986). Social or external speech dominates the first stage of language development, and is a means by which young children (typically up to the age of 3) express emotions or simple thoughts. The speech is principally used for control of behavior of others, but also acts as a means of conveying early social influences such as parental tolerances of behavior. Such influences inevitably lead to the restructuring of thoughts, and thus cognition. Egocentric speech occurs between the ages of 3 and 7 and describes an intermediate stage of language development between external speech and inner thoughts (see below). In this stage, the child will often talk to him or herself in an effort to control their own behavior or justify actions or approaches to a task. With maturity, egocentric speech becomes inner speech (self-talk), which has also been referred to as the stream of consciousness by James (1890). Vygotsky believed that inner speech enables individuals to direct and organize thought, and thus an important proponent of higher mental functioning. Hence, the set of arbitrary and conventional symbols which are used to convey meaning, but which are culturally determined in form and interpretation, become a part of the individual's cognitive being.

Closely related to the formation of inner speech is the concept of internalization. This involves the internal acceptance (perhaps with individual modification or interpretation) of social (external) values, beliefs, attitudes or standards, as one's own. In this sense, the psychological make-up of the individual is altered through internalization, and provides a dynamic mechanism by with the inter-social becomes the intra-social. However, such a mental adoption processes should not be confused with processes such as introjection or socialization. The former describes internalization in which there is little active participation by the individual; c.f. operant learning, and indeed some forms of hypnosis. In contrast, socialization describes a pseudo-internalization process in which apparent beliefs arise from a need to conform to society rather than any actual commitment. Internalization as viewed by Vygotsky therefore, represents a genuine, participative, and constructed process, but nevertheless determined by sociocultural influences. As indicated above, the outcome of internalization is that interpersonal or personal-cultural influences, become transformed into intrapersonal characteristics. Thus, every function in the child's cognitive development, such as attention, logic or concept formation, appears twice: first on the social level and then on the individual level (Vygotsky, 1978).

An important implication of the above ideas is that there is much opportunity through the school system to influence the cognitive development of children. For example, through language, the presentation and interpretation of history and current affairs, and the attitudes, beliefs and values of teachers (or significant others), the thought patterns and beliefs of students may be shaped. Unlike Piaget, who believed that children construct their own ideas of the world, Vygotsky's ideas suggest that student-teacher and student-peer relationships are of prime importance of generating and facilitating new ideas, perspectives, and cognitive strategies. Furthermore, the student apprentice can be seen to be active within their learning environments, attempting to construct understanding where possible, and possibly contribute to or affirm with the adopted culture. In turn, this aspect of human development inevitably has influence on the environment itself, and thus a dialectic process in which learning and development is affected by the social world, and the social world changed through learning and development (Tudge & Winterhoff, 1993). In a similar way, Vygotsky has argued that natural (i.e. biological) and cultural development coincide and merge to form a dynamic and integrated sociobiological influence on personality (Vygotsky, 1986).

A second important implication of Vygotsky's views is that rather than deriving explanations of a student's psychological activity (e.g. intelligence and motivation) from the student's characteristics, attention should be given to student behavior and performance when engaged in a social situation. Vygotsky in specific postulated the notion of a zone of proximal development (ZPD) which defines the difference between the child's independent learning accomplishments, and accomplishments under the guidance of a person who is more competent at the specific task at hand. Vygotsky particularly viewed adults, rather than peers, as key in this relationship, perhaps because adults are more likely to be truly competent in the task, and thus less likely to cause regression rather than progression in the collaboration (Tudge & Winterhoff, 1993). The maximization of potential was then viewed as a social process, which challenges the traditional notions of intelligence testing with psychometric tests. For example, emphasis is given to the potential of the student and its social contextualization, rather than current cognitive abilities measured independent of a social context. However, this notion of potential does not necessarily imply an intelligence level, since the ZPD is a dynamic assessment which may be complicated through the various student-specific influences of the social learning environment. Past experiences (prior knowledge), personality attributes, locus of control, and self-esteem for example, may all have possible influences on the efficacy of learning through the social interaction. Likewise, as a further complexity, the ZPD is not a well-defined space, but created in the course of the social interaction (Tudge & Winterhoff, 1993). Nevertheless, the notion of the ZPD gives importance to the student-centered basis of education, and suggests that the individual progression towards an overall learning outcome will be dictated by the guided and subjective accomplishments of intermediate (proximal) outcomes.

Educational Implications

Although the social influences on cognitive development have been considered by other researchers, such as Piaget and Bandura, Vygotsky emphasized that individual development is inherently integrated with cultural, historical, and inter-personal factors. Furthermore, Vygotsky viewed the individual in the social context as the unit of analysis in development, rather than the sole individual. In other words, whilst the internalization of thoughts, attitudes, and beliefs have been widely accepted to be socially influenced, further higher mental development is postulated by Vygotsky to be inseparably dependent upon social interactions, and indeed new understanding is not necessarily viewed as an external feature to be adopted by the student, but something which is created in the process of the social (teaching) interactions (Tudge & Winterhoff, 1993). Some general implications of Vygotsky's ideas on the social influences on cognitive development have been mentioned above, and can be summarized as:

- the central role of the teacher-student relationship in learning;
- the inherent cultural and immediate-social influences upon the student's attitudes and beliefs towards, for example, learning, schooling, and the education philosophy;
- the importance and power of language as a primary tool for the transference of sociocultural influences upon the child; and
- the benefits of student-centered teaching, whereby the student can efficiently progress within their potential towards a learning outcome; i.e. constructing knowledge through social interaction or co-constructivism. (Tudge & Winterhoff, 1993)

Further specific educational implications of the above points arise when considering practical teaching within schools. For example, given a child with particular personality traits and temperament, how should a teacher instigate a teaching objective which is congruent with Vygotskian ideas? The ZPD describes what a student can accomplish with the help of competent support, therefore it describes the actual task that can be effectively supported by the teacher. Although this may seem a rather circular argument, the implication here is that teachers need to continuously evaluate how effectively a student is progressing in a learning activity and respond accordingly with modified tasks or intermediary learning objectives.

In other words, students should be given frequent opportunities to express understanding, and learning tasks fine-tuned by the teacher to address individual capabilities. Such teacher support, which is graduated and task-apportioned based on student needs, has been commonly referred to as scaffolding, which symbolizes strong initial teacher support which is gradually reduced as the student approaches the desired learning outcome. In specific, scaffolding may range from very detailed and explicit tuition, such as the explanation of procedures and demonstrations, to the facilitation or organization of activities for student self-tuition. Scaffolding has also been interpreted as a mechanism by which sequential ZPD’s are used to achieve a learning outcome beyond a child’s immediate (starting) potential, and thus the specific learning activities change as the student competence towards the ultimate task grows (Biggs & Moore, 1993). The notion of ZPD also suggests that effective teaching should not only be within the proximate potential of the individual, but should perhaps be at the upper-level of the ZPD so as to maintain the student interest in the activity.

But how are the above teaching implications of ZPD different from what experienced teachers naturally do? As stated earlier, the social interaction aspect is a key emphasis in the learning process, and therefore the student needs to be active in the learning interaction, and in collaboration with the teacher. Where teaching logistics dictate large classes, small group work should be encouraged whereby peer-support and improved teacher interaction can be maintained. However, as mentioned earlier, overt reliance on peer-support could cause regression in some cases, and requires careful evaluation and support by the teacher. Furthermore, in an educational context, a teacher is likely to prove the best role model, i.e. the best conveyer of culturally esteemed factors pertaining to education; see also the discussions of Biggs and Moore (1993) on modelling in learning.

The use of language related activities in the school environment are also indicated to be of importance to cognitive development. For example, the development of communication skills may influence the clarity and breadth of inner speech, and thus thought patterns. However, care is needed in the degree of literal interpretation of such influences, which may incorrectly suggest, for example, that students with difficulties in expressing themselves, or grasping subtle meanings in language, are necessarily poor in cognitive ability. Furthermore, certain abilities such as bodily-kinesthetic and musical skills, may not necessarily be best represented through language-based thought. However, at an early school age, the development of language is likely to be an enabling tool towards other educational abilities, which in our current cultural setting have a cognitive bias.

Finally, an interesting issue which arises through consideration of Vygotskian views is the specific role and advantages of computer-based learning. Here, in one sense, social interaction is removed, but in another, may be replaced by an interactive and responding interface, which could perhaps evaluate and respond to the user’s ZPD. Such sophisticated computation would inevitably rely on expert-systems type technologies, such that there is an intelligent (e.g. humanly adaptive like) response to user queries and misunderstandings. The relatively unsophisticated nature of many current educational software, even those which are stated to be interactive, may explain the current mixed results of such software.

The influence of the social world on cognitive development has been considered through the views of Vygotsky. The dynamic relationships between culture, history, interpersonal interactions and psychological development have been described, and the important role of language as a common and conducting medium discussed. One specific educational application of such ideas is through the ZPD, which emphasizes the importance of the social aspect of learning, and particularly the student-centered and co-constructivist basis of learning in which the individual’s potential within the social context is addressed. Such ideas have had impact on the school system by challenging teacher-directed (as opposed to student-centered) learning programs, and perhaps emphasize the care needed in, for example, computer-based and distance learning teaching initiatives.

Criticisms of Sociocultural Theory

The writings of Vygotsky have been widely-criticized both during his lifetime and after his death. Vygotsky did not do empirical work to validate his findings instead relying on observation and testing. Social interaction is central to Vygotsky. However, he did not say what types of social interaction are best for learning.

One criticism is Vygotsky's view of active construction of knowledge. Some critics suggest that learning is not always a result of active construction. Rather, learning can occur passively or osmotically. Some children, regardless of how much help is given by others, may still develop at a slower rate cognitively. This suggests that there are other factors involved such as genetics.

Vygotsky's theory of language is not well-developed. Vygotsky, of course, died at age 37 and may have gone on to elucidate his theories had he survived. His theories rely a lot on cultural influences, for it is culture that helps to develop learners' language acquisition and cognitive development. Vygotsky states that little language acquisition and cognitive development come from biological factors. However, some psychologists dismiss the idea that cultural influences play a dominant role in development of language. Some children take years to learn basic skills despite plenty of social support. In some cases, children are unable to grasp certain concepts until they reach a level of maturity. This lends credence to Piaget's view of cognitive development occurring in stages and children not being unable to learn some concepts until they reach a certain age.

Perhaps the main criticism of Vygotsky's work concerns the assumption that it is relevant to all cultures. Rogoff (1990) dismisses the idea that Vygotsky's ideas are culturally universal and instead states the concept of scaffolding-which is heavily dependent on verbal instruction-may not be equally useful in all cultures for all types of learning. Indeed, in some instances, observation and practice may be more effective ways of learning certain skills.

In addition, Vygotsky was criticized for the concept of the "zone of proximal development," referred to as "one of the most used and least understood constructs to appear in contemporary educational literature" (Palinscar, 1998, p. 370) and "used as little more than a fashionable alternative to Piagetian terminology or the concept of IQ for describing individual differences in attainment or potential" (Faukner, Littleton, & Woodhead, 2013, p. 114).

Vygotsky's work has not received the same level of intense scrutiny that Piaget's has, partly due to the time-consuming process of translating Vygotsky's work from Russian. Also, Vygotsky's sociocultural perspective does not provide as many specific hypotheses to test as did Piaget's theory, making refutation difficult, if not impossible.

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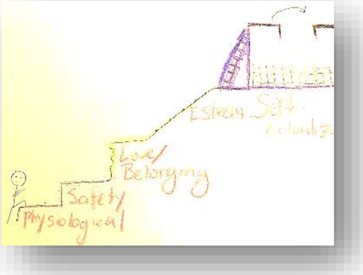

CHAPTER 5

Theory of Moral Development

INTRODUCTION

Lawrence Kohlberg (1927-1987) was a 20th century psychologist known primarily for his research into moral psychology and development. Lawrence Kohlberg was born in Bronxville, New York on October 25, 1927. He received his Ph.D. in psychology from the University of Chicago in 1958. His dissertation was based on his research into the moral choices of adolescent boys and led to a life devoted to the exploration of moral and ethical development in young people. In 1962, he returned to the University of Chicago as an assistant professor. Kohlberg died of an apparent suicide in 1987, after a long battle with depression coupled with painful symptoms from a tropical parasite he had contracted in Belize in 1971.

Kohlberg's stages of moral development were influenced by the Swiss psychologist Jean Piaget's stage-based theory of cognitive development. Kohlberg expanded on Piaget's cognitive development stages to form the six stages of moral development. He argued that correct moral reasoning was the most significant factor in moral decision-making, and that correct moral reasoning would lead to ethical behavior. Kohlberg believed that individuals progress through stages of moral development just as they progress through stages of cognitive development. Kohlberg's theory of moral development included three levels and six stages. To determine which stage of moral development his subjects were in, Kohlberg presented them with invented moral dilemmas, such as the case of a man who stole medicine for his sick wife. According to Kohlberg, few people reach stages five and six; most tend to stay at stage four. Kohlberg purported that women were often at a lower stage of moral development than men, but psychologist Carol Gilligan questioned his findings. Gilligan claims that women place a stronger emphasis on caring and empathy, rather than justice. She developed an alternative scale, heavily influenced by Kohlberg's scale, which showed that both men and women could reach advanced stages of moral development.

REQUIRED READING

Lawrence Kohlberg's stages of moral development constitute an adaptation of a psychological theory originally conceived of by the Swiss psychologist Jean Piaget. Kohlberg began work on this topic while a psychology postgraduate student at the University of Chicago in 1985, and expanded and developed this theory throughout his life.

The theory holds that moral reasoning, the basis for ethical behavior, has six identifiable developmental stages, each more adequate at responding to moral dilemmas than its predecessor. Kohlberg followed the development of moral judgment far beyond the ages studied earlier by Piaget, who also claimed that logic and morality develop through constructive stages. Expanding on Piaget's work, Kohlberg determined that the process of moral development was principally concerned with justice, and that it continued throughout the individual's lifetime, a notion that spawned dialogue on the philosophical implications of such research.

Kohlberg relied for his studies on stories such as the Heinz dilemma, and was interested in how individuals would justify their actions if placed in similar moral dilemmas. He then analyzed the form of moral reasoning displayed, rather than its conclusion, and classified it as belonging to one of six distinct stages.

There have been critiques of the theory from several perspectives. Arguments include that it emphasizes justice to the exclusion of other moral values, such as caring; that there is such an overlap between stages that they should more properly be regarded as separate domains; or that evaluations of the reasons for moral choices are mostly *post hoc* rationalizations (by both decision makers and psychologists studying them) of essentially intuitive decisions.

Nevertheless, an entirely new field within psychology was created as a direct result of Kohlberg's theory, and according to Haggbloom et al.'s (2002) study of the most eminent psychologists of the 20th century, Kohlberg was the 16th most frequently cited psychologist in introductory psychology textbooks throughout the century, as well as the 30th most eminent overall.

Kohlberg's scale is about how people justify behaviors and his stages are not a method of ranking how moral someone's behavior is. There should however be a correlation between how someone scores on the scale and how they behave, and the general hypothesis is that moral behavior is more responsible, consistent and predictable from people at higher levels.

Three Levels and Six Stages

Kohlberg's six stages (Figure 5.1) can be more generally grouped into three levels of two stages each: pre-conventional, conventional and post-conventional. Following Piaget's constructivist requirements for a stage model, as described in his theory of cognitive development, it is extremely rare to regress in stages-to lose the use of higher stage abilities. Stages cannot be skipped; each provides a new and necessary perspective, more comprehensive and differentiated than its predecessors but integrated with them.

Figure 5.1 Levels and Stages of Moral Development

Level 1 Pre-Conventional
  1. Obedience and punishment orientation
     (How can I avoid punishment?)
  2. Self-interest orientation
     (*What's in it for me?*)
     (*Paying for a benefit*)
Level 2 Conventional
  3. Interpersonal accord and conformity
     (*Social norms*)
     (*The good boy/good girl attitude*)
  4. Authority and social order maintaining orientation
     (*Law and order morality*)
Level 3 Post-Conventional
  5. Social contract orientation
  6. Universal ethical principles
     (*Principled conscience*)

Pre-Conventional Level

The pre-conventional level of moral reasoning is especially common in children, although adults can also exhibit this level of reasoning. Reasoners at this level judge the morality of an action by its direct consequences. The pre-conventional level consists of the first and second stages of moral development, and is solely concerned with the self in an egocentric manner. A child with pre-conventional morality has not yet adopted or internalized society's conventions regarding what is right or wrong, but instead focuses largely on external consequences that certain actions may bring.

In Stage One (obedience and punishment driven), individuals focus on the direct consequences of their actions on themselves. For example, an action is perceived as morally wrong because the perpetrator is punished. "The last time I did that I got spanked so I will not do it again." The worse the punishment for the act is, the more "bad" the act is perceived to be. This can give rise to an inference that even innocent victims are guilty in proportion to their suffering. It is "egocentric," lacking recognition that others' points of view are different from one's own.

There is "deference to superior power or prestige."

Stage Two (self-interest driven) espouses the "what's in it for me" position, in which right behavior is defined by whatever is in the individual's best interest. Stage two reasoning shows a limited interest in the needs of others, but only to a point where it might further the individual's own interests. As a result, concern for others is not based on loyalty or intrinsic respect, but rather a "you scratch my back and I'll scratch yours" mentality. The lack of a societal perspective in the pre-conventional level is quite different from the social contract (Stage Five), as all actions have the purpose of serving the individual's own needs or interests. For the stage two theorists, the world's perspective is often seen as morally relative.

Conventional Level

The conventional level of moral reasoning is typical of adolescents and adults. Those who reason in a conventional way judge the morality of actions by comparing them to society's views and expectations. The conventional level consists of the third and fourth stages of moral development. Conventional morality is characterized by an acceptance of society's conventions concerning right and wrong. At this level an individual obeys rules and follows society's norms even when there are no consequences for obedience or disobedience. Adherence to rules and conventions is somewhat rigid, however, and a rule's appropriateness or fairness is seldom questioned.

In Stage Three (interpersonal accord and conformity driven), the self enters society by filling social roles. Individuals are receptive to approval or disapproval from others as it reflects society's accordance with the perceived role. They try to be a "good boy" or "good girl" to live up to these expectations, having learned that there is inherent value in doing so. Stage three reasoning may judge the morality of an action by evaluating its consequences in terms of a person's relationships, which now begin to include things like respect, gratitude, and the "golden rule." "I want to be liked and thought well of; apparently, not being naughty makes people like me." Desire to maintain rules and authority exists only to further support these social roles. The intentions of actions play a more significant role in reasoning at this stage; "they mean well ..."

In Stage Four (authority and social order obedience driven), it is important to obey laws, dictums and social conventions because of their importance in maintaining a functioning society. Moral reasoning in stage four is thus beyond the need for individual approval exhibited in stage three; society must learn to transcend individual needs. A central ideal or ideals often prescribe what is right and wrong, such as in the case of fundamentalism. If one person violates a law, perhaps everyone would-thus there is an obligation and a duty to uphold laws and rules. When someone does violate a law, it is morally wrong; culpability is thus a significant factor in this stage as it separates the bad domains from the good ones. Most active members of society remain at stage four, where morality is still predominantly dictated by an outside force.

Post-Conventional Level

The post-conventional level, also known as the principled level, consists of stages five and six of moral development. There is a growing realization that individuals are separate entities from society, and that the individual’s own perspective may take precedence over society’s view; they may disobey rules inconsistent with their own principles. These people live by their own abstract principles about right and wrong principles that typically include such basic human rights as life, liberty, and justice. Because of this level’s “nature of self before others,” the behavior of post-conventional individuals, especially those at stage six, can be confused with that of
those at the pre-conventional level.

People who exhibit post-conventional morality view rules as useful but changeable mechanisms ideally rules can maintain the general social order and protect human rights. Rules are not absolute dictates that must be obeyed without question. Contemporary theorists often speculate that many people may never reach this level of abstract moral reasoning.

In Stage Five (social contract driven), the world is viewed as holding different opinions, rights and values. Such perspectives should be mutually respected as unique to each person or community. Laws are regarded as social contracts rather than rigid edicts. Those that do not promote the general welfare should be changed when necessary to meet “the greatest good for the greatest number of people.” This is achieved through majority decision, and inevitable compromise. Democratic government is ostensibly based on stage five reasoning.

In Stage Six (universal ethical principles driven), moral reasoning is based on abstract reasoning using universal ethical principles. Laws are valid only insofar as they are grounded in justice, and a commitment to justice carries with it an obligation to disobey unjust laws. Legal rights are unnecessary, as social contracts are not essential for deontic moral action. Decisions are not reached hypothetically in a conditional way but rather categorically in an absolute way, as in the philosophy of Immanuel Kant. This involves an individual imagining what they would do in another’s shoes, if they believed what that other person imagines to be true. The resulting consensus is the action taken. In this way action is never a means but always an end in itself; the individual acts because it is right, and not because it is instrumental, expected, legal, or previously agreed upon. Although Kohlberg insisted that stage six exists, he found it difficult to identify individuals who consistently operated at that level.

Further Stages

In Kohlberg's empirical studies of individuals throughout their life Kohlberg observed that some had apparently undergone moral stage regression. This could be resolved either by allowing for moral regression or by extending the theory. Kohlberg chose the latter, postulating the existence of sub-stages in which the emerging stage has not yet been fully integrated into the personality. In particular Kohlberg noted a stage 4½ or 4+, a transition from stage four to stage five, which shared characteristics of both. In this stage the individual is disaffected with the arbitrary nature of law and order reasoning; culpability is frequently turned from being defined by society to viewing society itself as culpable. This stage is often mistaken for the moral relativism of stage two, as the individual views those interests of society that conflict with their own as being relatively and morally wrong. Kohlberg noted that this was often observed in students entering college.

Kohlberg suggested that there may be a seventh stage-Transcendental Morality, or Morality of Cosmic Orientation-which linked religion with moral reasoning. Kohlberg's difficulties in obtaining empirical evidence for even a sixth stage, however, led him to emphasize the speculative nature of his seventh stage.

Theoretical Assumptions (Philosophy)

The picture of human nature Kohlberg begins with is that humans are inherently communicative and capable of reason. They also possess a desire to understand others and the world around them. The stages of Kohlberg's model relate to the qualitative moral *reasonings* adopted by individuals, and so do not translate directly into praise or blame of any individual's actions or character. Arguing that his theory measures moral reasoning and not particular moral conclusions, Kohlberg insists that the *form and structure* of moral arguments is independent of the *content* of those arguments, a position he calls "formalism" (Figure 5.2).

Figure 5.2 Formal Elements

Stages	Views of Persons	Social Perspective Level
6	Sees how human fallibility and frailty are impacted by communication	Mutual respect as a universal principle
5	Recognize that contracts will allow persons to increase welfare of both	Contractual perspective
4	Able to see abstract normative systems	Social systems perspective
3	Recognize good and bad intentions	Social relationships perspective
2	Sees that a) others have goals and preferences; b) either to conform or to deviate from norms	Instrumental egoism
1	No VOP: only self and norm are recognized	Blind egoism

Kohlberg's theory centers on the notion that justice is the essential characteristic of moral reasoning. Justice itself relies heavily upon the notion of sound reasoning based on principles. Despite being a justice-centered theory of morality, Kohlberg considered it to be compatible with plausible formulations of deontology and eudaimonia.

Kohlberg's theory understands values as a critical component of the right. Whatever the right is, for Kohlberg, it must be universally valid across societies (a position known as "moral universalism"); there can be no relativism. Moreover, morals are not natural features of the world; they are prescriptive. Nevertheless, moral judgments can be evaluated in logical terms of truth and falsity.

According to Kohlberg, someone progressing to a higher stage of moral reasoning cannot skip stages. For example, an individual cannot jump from being concerned mostly with peer judgments (stage three) to being a proponent of social contracts (stage five). On encountering a moral dilemma and finding their current level of moral reasoning unsatisfactory, however, an individual will look to the next level. Realizing the limitations of the current stage of thinking is the driving force behind moral development, as each progressive stage is more adequate than the last. The process is therefore considered to be constructive, as it is initiated by the conscious construction of the individual, and is not in any meaningful sense a component of the individual's innate dispositions, or a result of past inductions.

Progress through Kohlberg's stages happens as a result of the individual's increasing competence, both psychologically and in balancing conflicting social-value claims. The process of resolving conflicting claims to reach an equilibrium is called "justice operation." Kohlberg identifies two of these justice operations: "equality," which involves an impartial regard for persons, and "reciprocity," which means a regard for the role of personal merit. For Kohlberg, the most adequate result of both operations is "reversibility," in which a moral or dutiful act within a particular situation is evaluated in terms of whether or not the act would be satisfactory even if particular persons were to switch roles within that situation (also known colloquially as "moral musical chairs").

Knowledge and learning contribute to moral development. Specifically important are the individual's "view of persons" and their "social perspective level," each of which becomes more complex and mature with each advancing stage. The "view of persons" can be understood as the individual's grasp of the psychology of other persons; it may be pictured as a spectrum, with stage one having no view of other persons at all, and stage six being entirely socio-centric. Similarly, the social perspective level involves the understanding of the social universe, differing from the view of persons in that it involves an appreciation of social norms.

Examples of Applied Moral Dilemmas

Kohlberg established the *Moral Judgement Interview* in his original 1958 dissertation. During the roughly 45-minute tape recorded semi-structured interview, the interviewer uses moral dilemmas to determine which stage of moral reasoning a person uses. The dilemmas are fictional short stories that describe situations in which a person has to make a moral decision. The participant is asked a systemic series of open-ended questions, like what they think the right course of action is, as well as justifications as to why certain actions are right or wrong. The form and structure of these replies are scored and not the content; over a set of multiple moral dilemmas an overall score is derived.

Heinz Dilemma

A dilemma that Kohlberg used in his original research was the druggist's dilemma: *Heinz Steals the Drug in Europe*. From a theoretical point of view, it is not important what the participant thinks that Heinz should *do*. Kohlberg's theory holds that the justification the participant offers is what is significant, the *form* of their response. Below are some of many examples of possible arguments that belong to the six stages:

Stage One (*obedience*): Heinz should not steal the medicine because he would consequently be put in prison, which would mean he is a bad person. Or: Heinz should steal the medicine because it is only worth $200, not how much the druggist wanted for it. Heinz had even offered to pay for it and was not stealing anything else.

Stage Two (*self-interest*): Heinz should steal the medicine because he will be much happier if he saves his wife, even if he will have to serve a prison sentence. Or: Heinz should not steal the medicine because prison is an awful place, and he would probably experience anguish over a jail cell more than his wife's death.

Stage Three (*conformity*): Heinz should steal the medicine because his wife expects it; he wants to be a good husband. Or: Heinz should not steal the drug because stealing is bad and he is not a criminal; he tried to do everything he could without breaking the law, you cannot blame him.

Stage Four (*law-and-order*): Heinz should not steal the medicine because the law prohibits stealing, making it illegal. Or: Heinz should steal the drug for his wife but also take the prescribed punishment for the crime as well as paying the druggist what he is owed. Criminals cannot just run around without regard for the law; actions have consequences.

Stage Five (*human rights*): Heinz should steal the medicine because everyone has a right to choose life, regardless of the law. Or: Heinz should not steal the medicine because the scientist has a right to fair compensation. Even if his wife is sick, it does not make his actions right.

Stage Six (*universal human ethics*): Heinz should steal the medicine, because saving a human life is a more fundamental value than the property rights of another person. Or: Heinz should not steal the medicine, because others may need the medicine just as badly, and their lives are equally significant.

Criticisms of the Theory of Moral Development

One criticism of Kohlberg's theory is that it emphasizes justice to the exclusion of other values, and so may not adequately address the arguments of those who value other moral aspects of actions. In addition, Kohlberg's theory was initially developed based on empirical research using only male participants. Carol Gilligan, a former student of Kohlberg, argued that Kohlberg's theory is overly androcentric and did not adequately describe the concerns of women although research has generally found no significant pattern of differences in moral development between sexes.

Next, Kohlberg's stages are not culturally neutral, as demonstrated by its application to a number of different cultures. Although they progress through the stages in the same order, individuals in different cultures seem to do so at different rates. Kohlberg has responded by saying that although different cultures do indeed inculcate different beliefs, his stages correspond to underlying modes of reasoning, rather than to those beliefs.

Lastly, other psychologists have questioned the assumption that moral action is primarily a result of formal reasoning. Social intuitionists such as Jonathan Haidt, for example, argue that individuals often make moral judgments without weighing concerns such as fairness, law, human rights, or abstract ethical values. Thus the arguments analyzed by Kohlberg and other rationalist psychologists could be considered *post hoc* rationalizations of intuitive decisions; moral reasoning may be less relevant to moral action than Kohlberg's theory suggests.

Educational Implications

Moral and Character Development in Education (Huitt, 2004)

In assisting students with moral and character development, it is acknowledged that morals and character traits/attributes come into play within a rapidly changing context. Teachers cannot teach students all the specific knowledge, values, or behaviors that will lead to success in all aspects of their lives. Teachers must, therefore, acknowledge that some values are relative and teach students to develop their own views accordingly. At the same time, teachers must acknowledge that there are some absolutes with respect to morality and character that are accepted as commonalties among members of specific communities, major world religions, and moral philosophers. Teachers have an obligation to teach or support these morals and character development in the classroom, in the family, in religious organizations, and communities at large.

Moral and character development is integral to the development of self (Ashton & Huitt, 1980), and is as much the responsibility of early caregivers as it is of later educators. Nucci (1989) showed that "children's moral understandings were independent of specific religious concepts" and that both secular and religious children focus "on the same set of fundamental interpersonal issues: those pertaining to justice and compassion" (p. 195). In sum, parents, educators, affiliates of religious organizations, and community members have an obligation to provide young people with training appropriate to their age level that would assist them in holding to the absolutes that are common across philosophies and beliefs of the major religious traditions, while at the same time helping them develop and defend own acquired values.

Wynne (1989) reports that the quality of relationships among faculty (and between the faculty and adults in authority) is a major factor in the development of student character. An atmosphere of adult harmony is vitally important. According to Wynne, schools effectively assisting pupil character development are:

1. directed by adults who exercise their authority toward faculty and students in a firm, sensitive, and imaginative manner, and who are committed to both academics and pupil character development;
2. staffed by dedicated faculty who make vigorous demands on pupils and each other;
3. structured so that pupils are surrounded by a variety of opportunities for them to practice helping (prosocial) conduct;
4. managed to provide pupils-both individually and collectively-with many forms of recognition for good conduct;
5. oriented toward maintaining systems of symbols, slogans, ceremonies, and songs that heighten pupils' collective identities;
6. dedicated to maintaining pupil discipline, via clear, widely disseminated discipline codes that are vigorously enforced and backed up with vital consequences;
7. committed to academic instruction and assigned pupils significant homework and otherwise stressed appropriate academic rigor;
8. sensitive to the need to develop collective pupil loyalties to particular classes, clubs, athletic groups, and other sub-entities in the school;
9. sympathetic to the values of the external adult society, and perceive it as largely supportive and concerned with the problems of the young;

10. always able to use more money to improve their programs, but rarely regard lack of money as an excuse for serious program deficiencies;
11. open to enlisting the help, counsel, and support of parents and other external adults, but willing to propose important constructive changes in the face of (sometimes) ill-informed parent resistance;
12. disposed to define "good character" in relatively immediate and traditional terms.

In teaching moral and characters, it was not a failure of the economic or material aspect of society, in many cases, but rather a failure of the human, social, political, or spiritual aspects. The educational system must prepare individuals to progress in each of these arenas of life. Therefore, character development must be seen as an organic process in the development of the material/physical, human/psychological, and spiritual/transcendental aspects of human being.

The need for moral and character development in education led to the character education movement in the US. By the early 2000s, character education had become the fastest growing school reform movement (Kline, 2017). According to the US Department of Education (n.d.) website, character education is defined as a learning process that enables students and adults in a school community to understand, care about and act on core ethical values such as respect, justice, civic virtue and citizenship, and responsibility for self and others. Thus a set of morally desirable traits exists and these traits should be purposefully taught in schools (Editorial Projects in Education Research Center, 2004; McClellan, 1999; Prestwich, 2004). Huitt (2004) identified a list of moral and character attributes/traits as the focus for K-12 schools (Figure 5.3) based on data results collected in south GA. Those attributes/traits can be integrated into the curriculum to assist young people strive for excellence in both character and competencies. Lesson Plan examples from Figure 5.4 to Figure 5.8) are just a few.

Figure 5.3 Attributes/Character Traits for Moral and Character Development

Ability to See Another's Perspective
Ability to Work in Teams
Accountable
Attentive
Caring
Committed
Compassionate
Competent
Confident
Considerate
Cooperative
Courageous
Courteous
Dedicated
Dependable & Reliable
Determined
Disciplined Mind
Drug-Free
Empathetic
Fair
Faithful
Freedom from Prejudice
Good-Citizenship
Hard-Working
Helpful
High Self-Esteem
Honest
Honorable
Independent
Integrity
Knowledgeable
Law-Abiding
Love of Learning
Loyal
Moral
Obedient
Open-minded
Optimistic
Patient
Persevering
Positive, Encouraging Attitude
Prepared
Productive
Prompt & Punctual
Respect & Accept Authority
Respect for Physical Health
Respect for Self & Own Rights
Respect for the Creator
Respect for the Natural Environment
Respect the Rights of Others
Respectful
Responsible
Rule-Following
Searches for Meaning
Self-Controlled
Self-Disciplined
Strives for Excellence
Teachable
Thankful
Trustworthy
Truthful
Valuing Family

The Lesson Plan is a great place for teachers to start teaching and supporting moral and character development in the classroom. Below are several examples of teaching and supporting moral and character development in a variety of subject areas across various grade levels:

Figure 5.4 Teaching Trait Honesty in Language Arts

Grade Level: 1st	Content Area: Language Arts
Learning Objective(s)	Predict outcomes, oral speaking, following 2-3 step directions.
Moral/Character Trait(s)	Honesty
Lesson Title	Too Many Tamales
Lesson Summary	After reading the story Too Many Tamales about a girl who loses her mother's ring, discuss how Maria solved the problem. Discuss other implications of the story. Divide the class into five groups. Allow the groups to choose from five questions related to honesty. After 10 minutes of planning together, each group acts out the honest way to handle the situation they were given.

Figure 5.5 Teaching Trait Integrity in Social Studies/Health

Grade Level: 7-12	Content Area: Social Studies/Health
Learning Objective(s)	Define integrity and relate what is has to do with your character.
Moral/Character Trait(s)	Integrity
Lesson Title	Are You a Person of Integrity?
Lesson Summary	Discussion questions about integrity for use either with or without a video.

Figure 5.6 Teaching Traits Cooperation and Determination in Science/Health

Grade Level: 5-12	Content Area: Science/Health
Learning Objective(s)	Students will be better able to solve problems in a group team experience, strengthen group cohesion through team building and communication, and reinforce individual communication skills.
Moral/Character Trait(s)	Cooperation; Determination
Lesson Title	Group Rope Squares
Lesson Summary	This activity reinforces group cohesion and communication skills as well as problem solving and cooperation. Groups are formed and students have to work together to make a square out of coiled rope.

Figure 5.7 Teaching Traits Self-Discipline and Responsibility in Music

Grade Level: 7-8	Content Area: Music
Learning Objective(s)	National Music Standards Learning Objectives: Singing, alone and with others, a varied repertoire of music Performing on instruments, alone and with others, a varied repertoire of music. Understanding music in relation to history and culture.
Moral/Character Trait(s)	Self-discipline; Responsibility
Lesson Title	Choral Concert
Lesson Summary	Students perform song using correct posture, singing voice, and rhythm. Students perform accompaniment on non-pitched percussion instruments with appropriate technique and rhythm. Students discuss social and cultural context of the song lyrics.

Figure 5.8 Teaching Traits Respect for Self and Respect for Others in Reading/Language Arts, Health, and Mathematics

Grade Level: 6	Content Area: Reading/Language Arts, Health, Mathematics
Learning Objective(s)	Reading/Language Arts • gather information from reference works: books... periodicals... dictionaries... thesauruses... encyclopedia... atlases and almanacs • present information through reports... demonstrations and projects Health • explain the personal responsibility of individuals and community members for maintaining public safety Mathematics • collect data • display data using tables and graphs • read... analyze and interpret tables and graphs
Moral/Character Trait(s)	Respect for Self, Respect for Others
Lesson Title	Smoke 'Em Out
Lesson Summary	Students develop and use a questionnaire to survey others on their awareness of the danger of second hand smoke, then graph the data collected, relate their findings to at least two character qualities/traits and present to the class.

Moral Development and Classroom Management (Nucci, 2009)

Schools and classrooms contribute to students’ moral development through the nature of the overall social and emotional climate. This includes the way in which teachers and schools address behavioral issues through classroom management and discipline. Paying attention to the emotional climate of classrooms is important because children incorporate emotional experiences within their social cognitive schemes.

Variations in the emotional experiences of children can affect their moral orientations. The development of morality in children is supported by experiences of emotional warmth and fairness. Children who grow up in such environments tend to construct a view of the world based on goodwill. A child who maintains an orientation of goodwill feels emotionally secure and expects the world to operate according to basic moral standards of fairness. Children who maintain this orientation are more likely to engage in prosocial behavior. A moral classroom climate is one that fosters this tendency toward goodwill. The elements of a moral classroom climate address the following four needs: autonomy, belonging, competence, and fairness.

In early childhood it is especially important to construct a classroom climate characterized by positive emotion. In middle childhood students are less dependent on adults. However, they become more susceptible to social comparison and peer exclusion. A positive moral climate reduces competition and increases opportunities for peer collaborative learning and social problem solving. In adolescence the challenge is to offset the negative impact of student cliques and tendencies toward alienation. Large high schools pose special challenges for the creation of moral community. The Just Community School and the Small Schools movement are efforts to address this challenge through “schools within schools.

A positive moral atmosphere is complemented by behavioral management in the form of developmental discipline. In addition to the goals of control and efficiency common to all approaches to behavioral management, developmental discipline includes the additional goal of fostering students’ social and moral competence. Developmental discipline engages students’ intrinsic motivation to do what is right for their own reasons. Developmental discipline deemphasizes the use of external rewards and punishments to shape behavior. Conflicts and misbehavior are addressed primarily through social problem solving. Teacher discourse provides suggestions and scaffolding to support students’ efforts to resolve disputes and arrive at fair solutions.

Teacher feedback in support of positive behavior avoids the use of external rewards such as gold stars or certificates of recognition for good conduct or character because such external rewards reduce intrinsic moral motivation. Moral action and compliance with school conventions is aided by teachers’ judicious use of positive feedback in the form of validations that use moderate language referring to specific behavior and not the characteristics of the student. Responses to misbehavior should minimize the use of consequences when alternative problem-solving methods are available. When consequences are to be employed they should be "light" and in the form of logical consequences that are connected in a meaningful way to the nature of the transgression.

Moral Development and Cheating in the Classroom

Cheating is a violation of social norms (Kline, 2017). Williams (2012) categorized cheating into five dimensions: total cheating, serious cheating, social cheating, plagiarism, and student identified serious cheating. Academic Dishonesty (n.d.) breaks cheating into two dimensions: individual characteristics, such as gender and GPA, and institutional environment. To cheat or not, on the surface, it would seem that a student's level of moral development would be the central factor for deciding whether or not to cheat (Kline, 2017). According to Thoma and Dong (2014) moral reasoning generally increases as the level of education increases. According to Kohlberg's theory, higher stages of moral development would result in clearer moral thinking and thus produce better moral actions and behaviors.

However, in the case of cheating in the classroom, it is found that moral behavior is situation specific regardless of moral development levels or stages (Harthshorne & May, 1928-1930; Kline, 2017; Leming, 2008) Honesty or dishonesty in one situation does not predict the behavior of a child in another situation; no significant difference was found on cheating between students who used religious or moral focused programs and those who did not (Clouse, 2001; Harthshorne & May, 1930; Leming, 1993). Research has shown low levels of significance for factors such as level of education, GPA, a little or no significance for grade level, and cheating is equally prevalent across academic levels and demographic variables such as ethnicity or gender, but it does decrease with age at the college level (Geddes, 2011; Kline, 2017; McCabe & Trevino, 1993; Williams, 2012).

Cheating has always been a concern for educators and it is more prevalent than ever despite all of the focus and efforts on moral education (Kline, 2017; Schab, 1991). A general decrease in aversion toward dishonesty and an increase in the willingness to engage in dishonest behavior over a 30-year period was reported by Schab (1991). There is a disconnect between perceptions of cheating and cheating behaviors (Honz, Kiewra, & Yang, 2010; Williams, 2012). Giving answers or homework to another student is viewed more lightly than receiving or stealing answers or homework from another student; cheating within the classroom was viewed as a greater offense than cheating outside the classroom (Honz, Kiewra, & Yang, 2010). A significant relationship between cheating incidences and perceptions of cheating was also found that the less serious the cheating was perceived to be, the greater the number of cheating incidences was, meaning that the more seriously the behavior was perceived, the less frequently it occurred (Kline, 2017; Williams 2012). Remarkably, there was no large discrepancy in cheating perceptions across grade level and academic level (Kline, 2017).

What does this all mean for teachers? In responding to cheating, preventive measures are among the first strategies in the classroom (Santrock, 2018). It is the teachers' responsibility to help students understand the purpose of learning and goals of education. Teachers should foster intrinsic motivation for learning in the classroom. Learning is not to get a high grade. To improve students' self-efficacy for tests, teachers can help students understand the learning materials, and provide help for students. Study guides and additional assistance can help better prepare students not to cheat. Woolfolk (2015) also suggested the use of a variety of assessment measures in testing students' learning, in order to reduce testing pressure and cheating and to promote intrinsic learning, such as the use of group project, research project, open-book exam, and take-home test, to name a few. Teachers can emphasize the importance of moral behavior and character integrity in the classroom. To help shape students' perceptions on cheating, parents, peers, and others can also help influence students as to what behavior is acceptable and what is not in terms of cheating (Thoma & Dong, 2014). It is important to teach students to be responsible, disciplined, moral individuals (Sandtrock, 2018).

In addition to clarifying goals and purpose of education for intrinsic motivation for learning, providing assistance for testing preparation, instilling character traits, and shaping perceptions on cheating, and the use of a variety of forms of testing learning as mentioned above, it is necessary to help students form proper expectations of testing and cheating culture. Rules of testing and consequences of cheating must to be clearly announced to students in the classroom. Students' questions related to testing procedures need to be addressed before testing. During testing, teachers need to closely monitor students' progress so that no opportunities are created for students to cheat. Cheating incidences should be handled immediately to stop continuous violations. To reduce cheating incidences, testing pressure, and cheating temptations during testing, teachers can help create a low-pressure testing atmosphere, for examples, classical music may be used as background music. Cheating should be dealt promptly, properly, and consistently according to the established rules and policies to reduce and stop cheating offences. This again helps create a culture of not cheating, form an intrinsically motivated learning atmosphere, and shape students' perceptions of what is acceptable and what is not in terms of cheating behaviors.

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CHAPTER 6

Experiential Learning Theory

INTRODUCTION

David Allen Kolb (1939-), American "organizational" sociologist and educational theorist, is best known for his research into experiential learning and learning styles. Kolb received his Bachelor of Arts from Knox College in 1961, his Master of Arts from Harvard in 1964 and his Ph.D. in sociology from Harvard University in 1967. His research has its roots in the works of John Dewey, Kurt Lewin and Jean Piaget and the more recent work of Jack Mezirow, Paulo Freire and other theorists, focusing on how humans process experience. As part of that tradition, Kolb states that experiential learning is a process where knowledge results from making meaning as a result of direct experience, i.e., or simply "learning from experience." His experiential learning theory is a holistic or “meta-view” of learning that is a combination of experience, perception, cognition, and behavior. To explore and continue research on the experiential learning theory, David Kolb, along with his wife Alice Kolb, founded Experience Based Learning Systems (EBLS) in 1981. In addition to experiential learning, Kolb is also known for contributions in important research into organizational behavior, individual and social change, and career development and professional education. Kolb is an emeritus professor of organizational behavior at Case Western Reserve University in Cleveland, Ohio.

REQUIRED READING

Experiential learning is a cyclical process that capitalizes on the participants' experiences for acquisition of knowledge. This process involves setting goals, thinking, planning, experimentation, reflection, observation, and review. By engaging in these activities, learners construct meaning in a way unique to themselves, incorporating the cognitive, emotional, and physical aspects of learning.

> "Tell me, and I will forget. Show me, and I may remember. Involve me, and I will understand."
> (Confucius Circa 450 BC)

The Experiential Learning Theory

Experiential Learning Theory "provides a holistic model of the learning process and a multi-linear model of adult development" (Baker, Jensen, & Kolb, 2002, p. 51). In other words, this is an inclusive model of adult learning that intends to explain the complexities of and differences between adult learners within a single framework. The focus of this theory is experience, which serves as the main driving force in learning, as knowledge is constructed through the transformative reflection on one's experience (Baker, Jensen, & Kolb, 2002).

The learning model outlined by the Experiential Learning Theory (ELT) contains two distinct modes of gaining experience that are related to each other on a continuum: concrete experience (apprehension) and abstract conceptualization (comprehension). In addition, there are also two distinct modes of transforming the experience so that learning is achieved: reflective observation (intension) and active experimentation (extension) (Baker, Jensen, & Kolb, 2002). When these four modes are viewed together, they constitute a four-stage learning cycle that learners go through during the experiential learning process (Figure 6.1). The learners begin with a concrete experience, which then leads them to observe and reflect on their experience. After this period of reflective observation, the learners then piece their thoughts together to create abstract concepts about what occurred, which will serve as guides for future actions. With these guides in place, the learners actively test what they have constructed leading to new experiences and the renewing of the learning cycle (Baker, Jensen, & Kolb).

Figure 6.1 Experiential Learning Cycle

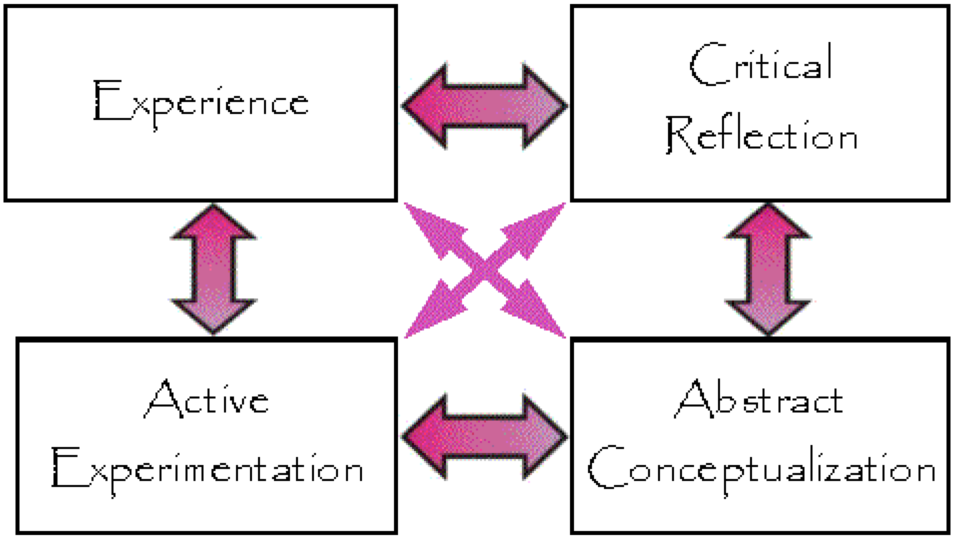

Figure 6.1. The graphic above is a representation of the Experiential Learning Cycle, which includes the components of experience, critical reflection, abstract conceptualization, active experimentation, and more critical reflection. Real experiences help the individual learn advanced abstract concepts. The experiences might result in paths, which allow the individual to actively collect information to learn and become a member of the community of practice. Perhaps critical thinking and reflection may refine ideas or lead the individual to consider alternate possibilities. Each phase potentially leads to another and builds upon the former (LaBanca, 2008).

The ELT model for learning can be viewed as a cycle consisting of two distinct continuums, apprehension-comprehension and intension-extension. However, these dialectical entities must be integrated in order for learning to occur. Apprehension-comprehension involves the perception of experience, while intension-extension involves the transformation of the experience. One without the other is not an effective means for acquiring knowledge (Baker, Jensen, & Kolb, 2002). Another way to view this idea is summarized as follows, "perception alone is not sufficient for learning; something must be done with it" and "transformation alone cannot represent learning, for there must be something to be transformed" (Baker, Jensen, & Kolb, pp. 56-67).

The ELT model attempts to explain why learners approach learning experiences in such different manners but are still able to flourish. Indeed, some individuals develop greater proficiencies in some areas of learning when compared to others (Laschinger, 1990). The ELT model shows that during the learning process, learners must continually choose which abilities to use in a given learning situation and resolve learning abilities that are on opposite ends of a continuum (Baker, Jensen, & Kolb, 2002). Indeed, learners approach the tasks of grasping experience and transforming experience from different points within a continuum of approaches. However, it is important that they also resolve the discomfort with the opposite approach on the continuum in order for effective learning to occur. Thus, if a learner is more comfortable perceiving new information in a concrete manner and actively experimenting during the processing of the experience, the learner must also undergo some abstract conceptualization and reflective observation in order to complete the cycle and lead to effective learning. Thus, a learner who experiments with models and manipulates them in the process of learning must also be able to conceptualize and form observations based on what s/he experiences. This must occur, even if the learners do not consider themselves strong in these areas (Baker, Jensen, & Kolb). This is at the heart of the ELT model and Kolb's view of the adult learner.

Applications of Experiential Learning Theory

There are currently many applications of Experiential Learning Theory within educational systems, especially on college campuses. These examples include field courses, study abroad, and mentor-based internships (Millenbah, Campa, & Winterstein, 2000). Additional examples of well-established experiential learning applications include cooperative education, internships and service learning. There are also numerous examples of computer-based interventions based on experience.

Cooperative Education (Co-Op)

Cooperative Education (Co-Op) is a structured educational strategy integrating classroom studies with work-based learning related to a student's academic or career goals. It provides field-based experiences that integrate theory and practice. Co-Op is a partnership among students, educational institutions, and work sites which include business, government, and non-profit community organizations. Students typically earn credit and a grade for their co-op experience while working in a paid or unpaid capacity. College and university professional and career-technical programs such as engineering, media arts and business often require cooperative education courses for their degrees. The National Commission for Cooperative Education (http://www.co-op.edu/) supports the development of quality work-integrated learning programs.

Internships

Closely related to cooperative education are internships. An internship is typically a temporary position, which may be paid or unpaid, with an emphasis on on-the-job training, making it similar to an apprenticeship. Interns are usually college or university students, but they can also be high school students or post graduate adults seeking skills for a new career. Student internships provide opportunities for students to gain experience in their field, determine if they have an interest in a particular career, create a network of contacts, and, in some circumstances, gain school credit.

Service Learning

Service learning is a teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities with the emphasis on meeting community needs. Because of its connection to content acquisition and student development, service-learning is often linked to school and college courses. Service-learning can also be organized and offered by community organizations. Learn and Serve America (http://www.servicelearning.org/) supports the service-learning community in education, community-based initiatives and tribal programs, as well as all others interested in strengthening schools and communities using service-learning techniques and methodologies.

Field Course Scenario

A university offers a field-based campus course in wildlife and research management that requires students to actively participate in activities other than those normally encountered during a lecture or recitation section of class. These students are introduced to various vegetation sampling techniques in the one-hour lecture period, but application and use of the techniques occurs when students must describe the vegetation's structural differences between two woodlots on campus.

Students are provided with a general goal statement requiring them to differentiate between the two areas based on structure but are not told how to determine these differences or how detailed the description of structure must be (e.g., vertical cover or vertical cover broken out by height strata). Students must first determine the objectives of the project before proceeding. Once these have been agreed on with all members of the group, methods for collecting the data are determined. Students may work with others in the class or with the instructor to determine the most appropriate sampling design. After selecting an appropriate sampling design, students are required to collect the data, and thus learn about the technique(s) through experience with it (concrete experience). By doing so, students learn how to use the technique and are able to more readily decide if the technique is suitable under different sampling regimes (reflection and generalization).

During this process, students gain a broader understanding of the technique and its applicability; much of this may never be addressed or presented in a classroom setting. Based on the prerequisites for the course, the instructor worked from the assumption that students have an understanding of ecological concepts and basic statistics. Having these prerequisites facilitates students putting the techniques to use in the environment being studied. An additional benefit of allowing students to experiment with techniques is that unexpected events may occur e.g., it rains halfway through sampling. These unstructured events can further increase a student's confidence, excitement, and familiarity with a technique requiring the student to make decisions about how to proceed or when to stop (active experimentation). These types of events are difficult to model in a classroom, and even if possible, many students do not know how to deal with unexpected circumstances when their only training has been through discussion. Feeling adequately trained to handle these circumstances will require students to have firsthand knowledge and experience with real-world situations.

Another popular use of experiential learning which has been around for a long time is role play. It has been used for educational and training purposes, for military strategic and tactical analysis and simply as games. We role play in childhood-imitating our parents, playing with dolls and cars, building sand castles and pretending we are princes and warriors-with the result that learning takes place, preparing us for life.

Role Play Scenario

The subject of this lesson is a controversy that has deep roots in American History, the Constitution and the Bill of Rights. Using the PBS documentary video In The Light Of Reverence, the teacher has the students closely examine the struggles of the Lakota Sioux to maintain their sacred site at Mato Tipila (Lakota for Bear's Lodge) at Devils Rock in Wyoming. Although the site at Devil's Rock was never ceded by treaty to the U.S. government, it is now under the administration of the National Park Service. Rock climbers claim any U.S. citizen should have complete access to the site because it is on federal land. In deference to the religious practices of the Lakota, the National Park Service asks that people do not climb there during the entire month of June. The case has been litigated up to the Supreme Court.

After watching the video and discussing various aspects of the controversy, students role-play members of four teams: the Lakota, rock climbers, National Park Service, and the courts. Using extensive online resources linked to the lesson, students research the issues and evaluate the sources. The first three teams present their demands in a hearing. The court tries to help them reach a compromise and then adjudicates any unresolved issues. The lesson continues as students compare the plight of the Lakota to that of the Hopi and Wintu, who also struggle to maintain their sacred lands. The students will understand the concept of "rights in conflict" arising under the First Amendment (freedom of religion), interpret a current conflict from multiple perspectives, learn to advocate for a point of view, and learn to resolve a conflict through a conflict resolution scenario.

Simulations and Gaming

Simulations and gaming within instruction also involve direct experience and thus are valid examples of experiential learning. Within game interactions, there are often several cycles presented to the participant. These cycles generally consist of participation by the user, decision making, and a period of analysis. This process coincides greatly with the Experiential Learning Cycle outlined above (Marcus, 1997). In addition, it has been found that simulations which shorten the debriefing period at the end of the game session can diminish their own effectiveness. This means that games which do not allow for appropriate reflection are not as effective as if proper reflection occurs. Thus, it is apparent that the reflective observation and abstract conceptualization portions of simulations and games are vital to learning, which has also been established by the Experiential Learning Theory (Ulrich, 1997).

E-learning

Yet another application of experiential learning is in the field of e-learning. Specifically, there has been an effort to utilize this model to increase the effectiveness of Continuing Professional Development (CPD) e-learning courses. It was found that many of these courses did not allow for concrete experience and active experimentation due to the fact that the learning processes were based on more traditional learning methods and not capitalizing on the self-directed nature of the learners (Friedman, Watts, Croston, & Durkin, 2002). However, with the use of different technologies such as multimedia resources, web-based discussions, online planners, and creative tasks, e-learning courses could be improved in a manner that would strengthen the entire experiential learning cycle for the learner (Frank, Reich, & Humphreys, 2003).

Steps to Integrating Experiential Learning in the Classroom

1. Set up the experience by introducing learners to the topic and covering basic material that the learner must know beforehand (the video scenario as well as discussion).
2. Engage the learner in a realistic experience that provides intrigue as well as depth of involvement (mock trial).
3. Allow for discussion of the experience including the happenings that occurred and how the individuals involved felt (discussion afterwards).
4. The learner will then begin to formulate concepts and hypotheses concerning the experience through discussion as well as individual reflection (discussion afterwards, but also could be done with journaling).

5. Allow the learners to experiment with their newly formed concepts and experiences (interpreting current conflict and conflict resolution scenario).
6. Further reflection on experimentation (discussion, but could also be done through journaling).

Criticisms of Experiential Learning Theory

Since Kolb created the Experiential Learning Theory and the accompanying learning model, his work has been met with various criticisms about its worth and effectiveness. One of the criticisms of this model is that the concrete experience part of the learning cycle is not appropriately explained in the theory and remains largely unexplored. Herron (as cited in Yorks & Kasl, 2002, pp. 180-181) believes that "the notion of feeling is nowhere defined or elaborated, thus concrete experience is not properly explored. The model is really about reflective observation, abstract conceptualization, and active experimentation." Another common criticism of the theory that exposes a weakness is that the idea of immediate and concrete experience is problematic and unrealistic (Miettinen, 2000).

Other criticisms of the ELT are that the concepts outlined by Kolb are too ill-defined and open to various interpretations and that the ideas he presents are an eclectic blend of ideas from various theorists that do not fit logically together. Another, perhaps more biting criticism of Kolb's work is that his ELT model is only an attempt to explain the societal benefit of his Learning Styles Inventory and thus may actually be a well derived marketing ploy (Miettinen, 2000). Also, it is believed that the phases in the ELT learning model remain separate and do not connect to each other in any manner (Miettinen).

However, the most tangible weaknesses of the ELT and the ELT learning model are the vast differences between it and the ideas established by John Dewey, whose beliefs are largely attributed to the establishment of the ELT. Dewey believed that non-reflective experience borne out of habit was the dominant form of experience and that reflective experience only occurred when there were contradictions of the habitual experience. But, in a glaring weakness of the ELT, Kolb does not adequately discuss the role of non-reflective experience in the process of learning (Miettinen, 2000). In addition, Dewey believed that observations of reality and nature were the starting point of knowledge acquisition. Kolb, however, believes that the experience is the starting point of knowledge acquisition and disregards the observations concerning the subjective reality of the learner, another blatant weakness (Miettinen). A final weakness in the ELT that was noticed is its lack of discussion concerning the social aspect of experience. The ELT learning model focused on the learning process for a single learner and failed to mention how the individual fit into a social group during this process and what role this group may play. Also, there was no discussion on how a social group may gain knowledge through a common experience.

Revised Experiential Learning Cycle

With all of the criticisms of the Experiential Learning Theory, it may be too easy to overlook its merits in the field of adult education. Each adult has his/her own unique set of experiences and set of learning abilities that he/she feels comfortable utilizing. Kolb's theory accounts for this fact and shows how the learner can utilize his/her experiences and learning strengths in the process of constructing knowledge. Kolb also did a good job of integrating the two dialectical entities into the model to create a complete learning cycle in which the entire learning process can be traced. In addition, Kolb did a great job of showing how the learner can be effective utilizing his/her learning strengths, while at the same time using skills that are underdeveloped to complete the learning cycle.

However, due to the weaknesses of the ELT model as created by Kolb, it is necessary to construct another model, which includes Kolb's beliefs and at the same time confronts the weaknesses that have been found. Below (Figure 6.2) is a representation of a model that could be used for this purpose. The idea behind this model was to include the observations of the learners' own subjective reality as a starting point for experience. Then, a disruptive experience occurs, which challenges the habitual patterns of the learner. Once the experience has been encountered learners enter a stage of emotion inventory in which they become cognizant of their emotions in reaction to the experience. These emotions then play a role in the next step, which is a stage of reflective observation similar to that outlined by Kolb in his model. After this stage, learners enter a stage of conceptualization and hypothesis formation in which they attempt to piece the information gathered thus far concerning the experience into logical chunks. Once this occurs, learners address the experience in some manner. This may include active experimentation to test a hypothesis. Or, it may also include higher order planning which requires even more in-depth examination of the experience. This stage can lead to two different types of experiences, expected and disruptive, both of which lead to repetition of the learning cycle. The expected experiences include those which can be predicted by the concepts and hypothesis that were established in the learning cycle. Disruptive experiences, on the other hand, include those that conflict with the concepts that were formulated in the experiential process. It is also readily evident in the model that the experiential learning cycle can occur individually or within a social group.

Figure 6.2 Revised Experiential Learning Cycle

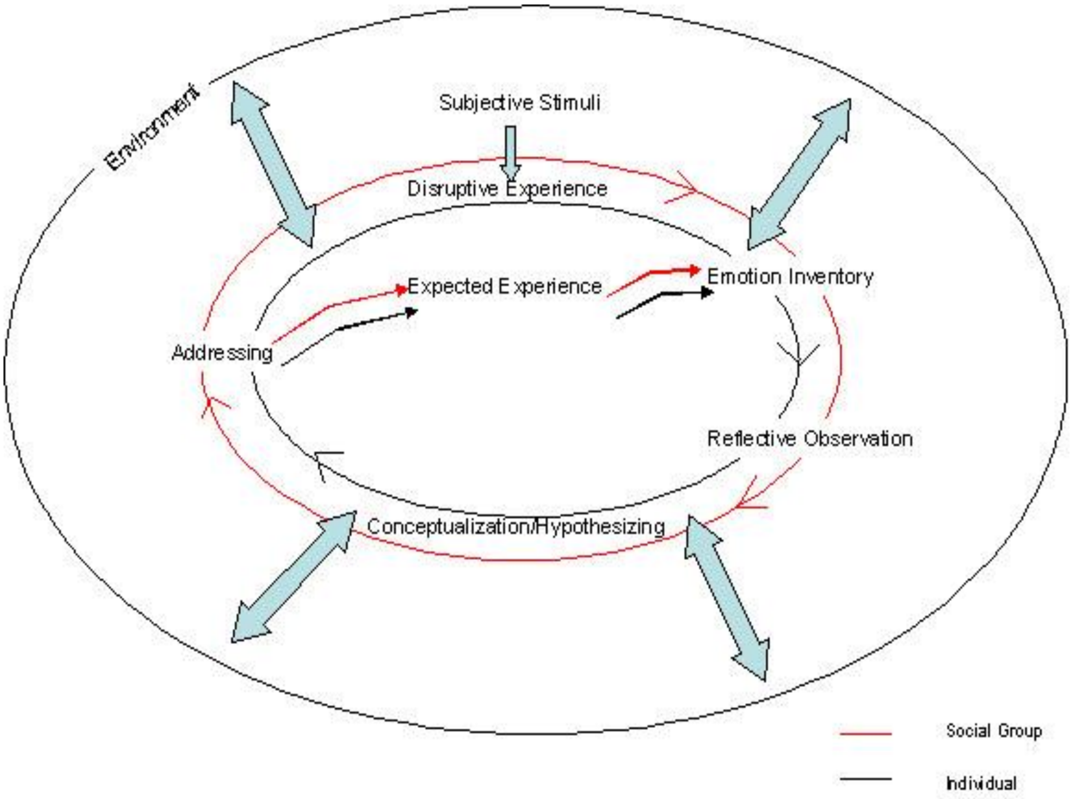

Figure 6.2. The graphic depicts the revised experiential learning cycle. It includes the encompassing circle of the environment as well as cycle of events in the learning process that can occur individually or in a group. The different elements are explained below in the order that they appear on the cycle.

Performed Individually

- Subjective Stimuli: Observations about an individual's surrounding environment and nature made by the individual, as well as more affective and temporal judgments about things not really seen but that are definitely felt. It is possible that individuals can learn from this activity and not enter the cycle depicted below.

Can Occur Individually or In a Social Group

- Disruptive Experience: Experience that is a disruption of the habitual manner in which an individual experiences things. This is in contrast to a non-reflective experience borne out of habit.
- Emotion Inventory: Inventory of emotions that are created by the disruptive experience.
- Reflective Observation: Observations concerning the experience and reflection upon the event including causes, possible effects, etc.
- Conceptualization/Hypothesizing: Further processing of the experience; creating concepts to explain the experience and construction of explanatory hypotheses.
- Addressing: The concepts and hypotheses that have been constructed are formulated and the experience is addressed in some manner. There is an attempt to predict future experience. This may involve planning, active experimentation, or cautious testing.

The encompassing circle of the environment depicts how all of the activities take place in the context of a certain environment and are affected somehow by the environment.

Educational Implications

Experiential Learning Theory outlines the manner in which learners gain knowledge and understanding through experiences. Though some may debate which steps are present in experiential learning, there is no debate about the worth of experience in learning. Through experience, learners are able to construct firsthand a sense of understanding of the events going on around them. Educators have begun to harness the power of experience in study abroad courses, field studies, role plays, and numerous computer-based interventions. The future could bring even more applications of this theory, a possibility as exciting for the learner as much as it is the facilitator.

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CHAPTER 7

Bioecological Model of Human Development

INTRODUCTION

Urie Bronfenbrenner (1917-), a Russian American psychologist, was born on April 29, 1917 to Dr. Alexander Bronfenbrenner and Kamenetski Bronfenbrenner. At the age of 6, his family relocated to United States. For a short period of time, they settled at Letchworth village in Pittsburgh where his father worked as a research director and clinical psychologist. Bronfenbrenner attended Cornell University after his graduation from Haverstraw High School. In 1938, he completed his double major in psychology and music. After that he completed his M.A. at Harvard University. In 1942, he completed his Ph.D. from the University of Michigan. Shortly after that, he was hired as a psychologist in the army doing many assignments for the Office of Strategic Services and the Army Air Corps. In the administration and research, he worked as an assistant chief psychologist before he accepted the offer from the University of Michigan to work as an assistant professor in Psychology. In 1948, he accepted an offer from Cornell University as a professor in Human development, family studies and psychology. He also served as a faculty member on the Board of Trustees in the late 1960's and 1970's. Urie is admired all over the world to develop the innate relationship between research and policy on child development. He holds the view that child development is better applicable when institutional policies motivate studies in a natural environment and theory is best suited in a practical application when it is relevant.

REQUIRED READING

The literature from the human developmental sciences provides more comprehensive conceptual and operational definitions of human development than the economic literature typically does (Gottlieb, Wahlsten, & Lickliter, 1998; Lerner, 1998; Baltes, Lindenberger, & Staudinger, 1998). In essence, according to Thelen and Smith (1998), "The theory of development is based on very general and content-independent principles that describe the behavior of complex physical and biological systems" (p. 258). Thus, development can only be understood as (1) "the multiple, mutual, and continuous interaction of all the levels of the development system, from the molecular to the cultural"; and (2) "as nested processes that unfold over many time scales, from milliseconds to years" (Thelen & Smith, 1998, p. 258). In other words, human development refers to change over time, and time is typically characterized as chronological age. Age is not the cause of development; it is just a frame of reference. More specifically, development comprises interactions among various levels of functioning, from the genetic, physiological, and neurological to the behavioral, social, and environmental. Human development is a permanent exchange among these levels. And the more mature the person, the more influence and control the person has over the organization of these interactions.

Human developmental science attributes the driving force of development to so-called *proximal processes*: stimulating, regular face-to-face interactions over extended periods with people, objects, or symbols, which promote the realization of the genetic potential for effective biological, psychological, and social development. For example, parents influence and shape their children through parenting behaviors, role modeling, and encouraging certain behaviors and activities for their children.

Bronfenbrenner's bioecological model (Figure 7.1) is well suited to illustrate some important dimensions of these human developmental processes, as it captures the complexity of human development as an intricate web of interrelated systems and processes. A basic tenet of the bioecological systems' theories of development (Bronfenbrenner & Morris, 2006) is that child and youth development is influenced by many different "contexts," "settings," or "ecologies" (for example, family, peers, schools, communities, sociocultural belief systems, policy regimes, and, of course, the economy). The model is able to account for multiple face-to-face environments, or *settings*, within the microsystem of a person (for example, family, school, peers); how relations between settings (mesosystem) can affect what happens within them (for example, interactions between school and family); and how settings within which the individuals have no direct presence (exo- and macrosystem) can affect settings in their microsystems (for example, how parents' experiences at their workplace affect their relationships within the family) (Bronfenbrenner, 1979). Thus, this model allows the analysis of the lives of people, "living organisms whose biopsychological characteristics, both as a species and as individuals, have as much to do with their development as do the environments in which they live their lives" (Bronfenbrenner, 1995, p. 8).

Figure 7.1 Bioecological Model of Human Development

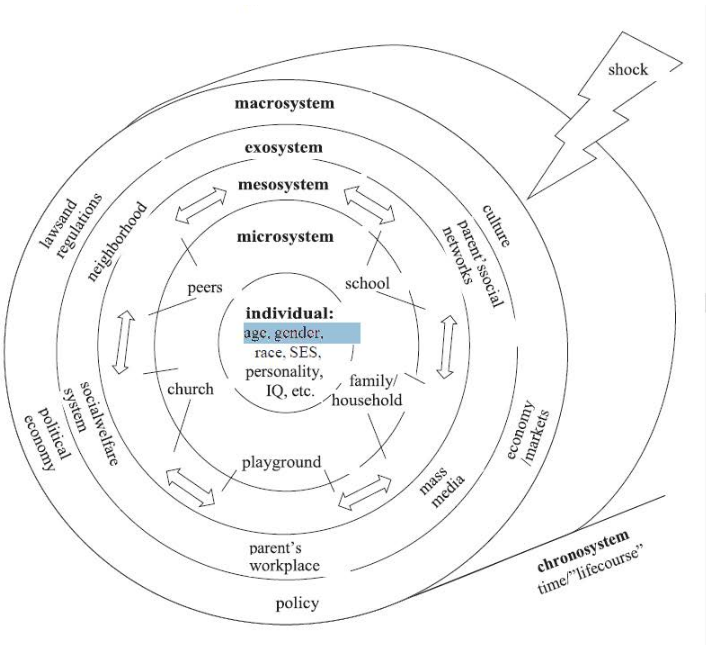
shock
macrosystem
exosystem
mesosystem
microsystem
lawsand regulations
neighborhood
culture
parent'ssocial networks
peers
school
individual:
age, gender,
race, SES,
personality,
IQ, etc.
church
family/ household
socialwelfare system
political economy
economy /markets
playground
mass media
parent's workplace
policy
chronosystem
time/"lifecourse"

Figure 7.1. Source: Visual adaptation of Bronfenbrenner's bioecological model of child development (Bronfenbrenner, 1979). *Note:* SES = socioeconomic status.

A central question in scientific research on how ecologies influence development is how macrosystem contexts and events (for example, aggregate economic shocks) influence intermediate (exo- and mesosystem) contexts, which in turn influence the settings or contexts within the developing person's microsystem, settings within which the person has face-to-face interactions or proximal processes. Aggregate economic shocks are thought to affect the ecology of human development by hitting the macrosystem, as depicted in Figure 7.1.

This model is integrative and interdisciplinary, drawing on and relating concepts and hypotheses from disciplines as diverse as biology, behavioral genetics and neurobiology, psychology, sociology, cultural anthropology, history, and economics-focusing on and highlighting processes and links that shape human development through the life course (Bronfenbrenner, 1995). In particular, this model relates to the economic model of human capital investments outlined earlier in many, but not all, respects. It provides a complementary framework for understanding how shocks affect human development understood as complex systems of interactive processes between developing individuals and their surroundings. As such, bioecological developmental models have the potential to enrich or expand the standard economic approach to human capital.

In what follows we will expound on human developmental processes and how these are nested within a complex set of systems and settings. "Domains," "processes," and "context" provide a convenient organizational structure for discussing the complex topic of human development.

Domains

It is widely understood that human development has many distinct and important dimensions, or domains (Alkire, 2002). Fundamental domains of development are not generally hierarchical (one is not more important than others), irreducible (fundamental dimensions cannot be reduced to other dimensions), or incommensurable (they cannot be adequately compared to each other). Nonetheless, in the practical world of science, programs, and policies, some domains receive more attention than others. In the scientific study of child and youth development, three domains-physical, biological, and neuroanatomical development; cognitive, language, and academic development; and social, emotional, and behavioral development-have received much more attention than have moral, spiritual, and religious development or artistic and aesthetic development. The program and policy world parallels the scientific world in placing greater emphasis on children's physical, cognitive, and social-emotional development, roughly aligned with the domains of health, education, and social-emotional or psychosocial well-being.

Each of these three fundamental domains is a complex system of complex subsystems. These systems emerge and evolve over the course of human development and are complexly interrelated to other domains of human developmental systems and subsystems. The "organizational systems" perspective on human development focuses on these fundamental domains and strives to account for how advances or lags in one domain affect and are affected by advances or lags in other domains. For example, the evidence reveals that nutrients by themselves do not suffice to bring about even purely physical, biological, or neuroanatomical development and thus that development can be significantly delayed and even irreversibly compromised in the absence of other factors crucial to development, such as a secure attachment relationship and other proximal processes (Corrales & Utter, 2005). The bioecological systems' perspective on human development examines how different contexts, settings, experiences, and events affect different domains of child and youth development.

The implications of multiple and interrelated domains of development are clear. Examining the impacts both within the physical (health), cognitive (educational), and social-emotional (psychosocial wellbeing) domains and across these domains will likely enrich efforts to understand child and youth development.

Processes

Put very simply, children's development is the result of proximal processes; of participating in increasingly complex reciprocal interactions with people, objects, and symbols in their immediate environments (their microsystem contexts) over extended periods of time (represented by the chronosystem) (Bronfenbrenner, 1994a). Thus, according to Bronfenbrenner's definition, "a microsystem is a pattern of activities, social roles, and interpersonal relations experienced by the developing person in a given face-to-face setting with particular physical, social, and symbolic features that invite, permit, or inhibit engagement in sustained, progressively more complex interaction with, and activity in, the immediate environment" (Bronfenbrenner, 1994b, p. 39). Examples of settings within the microsystem are families, neighborhoods, day care centers, schools, playgrounds, and so on within which activities, roles, and interpersonal relations set the stage for proximal processes as crucial mechanisms for human development.

The heterogeneity in individual outcomes thus stems from systematic variation in individuals' characteristics and environments and in the nature of the developmental outcomes under scrutiny, which jointly determine form, power, content, and direction of proximal processes (Bronfenbrenner, 1994a). Thus, proximal processes determine the capacities of individuals to (1) differentiate perception and response; (2) direct and control their own behaviors; (3) cope successfully under stress; (4) acquire knowledge and skills; (5) establish and maintain mutually rewarding relationships; and (6) modify and construct their own physical, social, and symbolic environments (Bronfenbrenner, 1994a). Proximal processes are thought to be the most important influences on children's development.

Of course, not only do microcontexts affect children and youth, but also children and youth affect their microcontexts. Children, youth, and the mircocontexts transact (see Sameroff, 2009, for a transactional model). Insecurely attached children are more emotionally demanding for stressed parents to care for, and children slowed in language development stimulate less verbal exchange with adults. Economic shocks are likely to have an impact on these transactional, bidirectional systems of influences between children or youth and their immediate environments. This view of human development as transactional places heavy design and data demands on studies of the underlying mechanisms or pathways of influence, including studies of the influence of economic shocks on child and youth development.

Context and the Interplay of Systems and Settings

In the bioecological model, contextual effects are manifested in a complex interplay of the micro-, meso-, exo-, and macrosystems. The ways these systems interact and influence each other can contribute to an understanding of how shocks to the macrosystem, such as a financial crisis, can disrupt the developmental process as it is transmitted to various settings in a child's *microsystem*. Household socioeconomic status, neighborhood characteristics, and school environments, just to mention a few, will determine the quality, frequency, and intensity of proximal processes. For instance, there is a significant body of literature that looks at how household poverty and hardship affect child development (see, for example, Duncan & Brooks-Gunn, 1997). Neighborhood and community contexts and their influence on children have also been studied extensively (see, for example, Brooks-Gunn, Duncan, & Aber, 1997). For instance, although family socioeconomic status is correlated with well-being and human development, it is not clear if socioeconomic status *causes* variations in health and well-being or if personal characteristics and dispositions of individuals influence both their socioeconomic status and their future socioemotional well-being and behavior (Conger, Conger, & Martin, 2010, p. 687; Mayer, 1997). In addition, studies have started to unravel the pathways through which poverty affects child and youth development, ranging from the availability of quality prenatal and perinatal care, exposure to environmental toxins such as lead, less cognitive stimulation at home, harsh and inconsistent parenting, to lower teacher quality (McLoyd, 1998). Furthermore, various studies have compared the implications of temporary versus chronic deprivation and how the impact differs according to life stage of the developing person (see, for accounts, Elder, 1999; McLoyd, 1998; McLoyd et al., 2009). In other words, a temporary drop in socioeconomic status during a crisis may have markedly different long-term implications depending on the age of the child.

A *mesosystem*, according to Bronfenbrenner, “comprises the linkages and processes taking place between two or more settings containing the developing person” (1994b, p. 40), such as the relations between home and school He notes that “it is formed or extended whenever the developing person moves into a new setting” (1979, p. 25). The main distinction between the meso- and the microsystem is that in the microsystem activities, social roles, and interpersonal relations are confined to one setting, whereas the mesosystem incorporates the interactions across the boundaries of at least two settings (Bronfenbrenner, 1979, p. 209). The mesosystem is structured by institutions that have taken-for-granted rules for interaction and that shape expected behaviors with the help of shared norms. Institutions may be mutually reinforcing or in tensions with one another, as when the implicit rules for gaining status among peers are at odds with standards of behavior valued by schools and with rules facilitating educational achievement (Carter, 2007; Warikoo, 2010).

Settings in the mesosystem can enhance (or diminish) people’s developmental potential when (1) a transition is made together with a group of others that they have engaged with in previous settings (versus alone) (for example, transition with a group of peers from kindergarten to school); (2) when roles and activities between two settings are compatible (or incompatible) and encourage (or discourage) trust, positive orientation, and consensus on goals, as well as a balance of power in favor of the developing person; (3) when the number of structurally different settings is increased (or decreased) and others are more (or less) mature or experienced; and (4) when cultural or subcultural contexts differ from each other (Bronfenbrenner, 1979, pp. 209-223).

An *exosystem* refers to “the linkages and processes taking place between two or more settings, at least one of which does not contain the developing person, but in which events occur that indirectly influence processes within the immediate setting in which the developing person lives” (Bronfenbrenner, 1994b, p. 40). An example of such an exosystem setting would be the parent’s workplace, in which the child does not interact directly, but which could indirectly, through parental stress, job loss, or the like, influence family dynamics and thus the developing child. Consequently, a causal sequence of at least two steps is required to qualify as an exosystem. The first step is to establish a connection between events in the external setting, or exosystem, which does not include the developing person, to processes in the microsystem, which does include the person, and, second, to link these processes to developmental changes in the developing person (Bronfenbrenner, 1979). Important to note in this context is the ability of the child to influence parents just as much as parents influence the child, and this influence can reach far beyond the family into settings of the child’s exosystem (Bronfenbrenner, 1979).

Research to date has focused on three prominent exosystems that are particularly likely to influence the developmental processes of children and youth through their influence on the family, school, and peers: parents’ workplaces, family social networks, and neighborhood-community contexts (Bronfenbrenner, 1994b). To illustrate, Kohn’s research (see, for example, Pearlin & Kohn, 2009) demonstrated that the beliefs, standards, and expectations parents face at work, for example concerning their autonomy or dependency, is what they bring home and essentially expect the same from their children. As a result, parents who were always subdued at work have a tendency to subdue their children. This factor may help explain intergenerational transmission of values. Economic shocks can have a tremendous effect on exosystems, affecting not only the workplaces of parents but also the situations of those who do not have work. Several functions of work-such as organization of the day, income, and social status, among others-can be affected.

The *macrosystem* captures “the overarching pattern of micro-, meso-, and exosystems characteristic of a given culture or subculture, with particular reference to the belief systems, bodies of knowledge, material resources, customs, lifestyles, opportunity structures, hazards, and lifecourse options that are embedded in each of these broader systems" (Bronfenbrenner, 1994b, p. 40). These include the laws and regulations, political economy, economic markets, and public policies of the societies within which the developing person is embedded. Incorporating the macrosystem takes the analysis beyond the identification of class, ethnic, and cultural differences in child-rearing practices and outcomes and incorporates the phenomena of aggregate economic shocks. Of particular interest are dynamic aspects of "ecological transitions," such as investigations of how social and economic changes affect children and youths' development and how they adapt to such changes in the macrosystem.

While Bronfenbrenner refers mainly to cultural aspects of the macrosystem, a society's cultural frameworks, politics, and institutions are all closely interrelated and mutually reinforcing. Thus, the process of change can be induced through several channels or entities, the result of which will be a "complicated set of interlocking physical and social relations, patterns, and processes" (Martin, McCann, & Purcell, 2003, p. 114). Put another way, the macrosystem can be interpreted as "space" that Lefebvre (1991) defined as an "unavoidably social product created from a mix of legal, political, economic, and social practices and structures" (p. 190). Individuals draw on these cultural tools that their environment puts at their disposal, or that they choose to make sense of challenges and imagine effective solutions. They also find strategies for action by observing the behaviors of those around them and the consequences of their actions.

The bioecological model is flexible enough to accommodate cross-national variations in the weight given to various aspects of human development influenced by the local culture (for instance, the greater emphasis on self-esteem, self-actualization, and individualization characteristic of the American upper-middle class; see Markus, 2004). It also takes into consideration meso- and macrolevel conditions for collective human development, including shared myths and narratives that buttress the individual sense of self and capabilities (see, for example, Hall & Lamont, 2009).

Similarly, the bioecological model is capable of capturing "experiences." Proximal processes and other interactions are "experienced by the developing person," which is meant to indicate, "that the scientifically relevant features of any environment include not only its objective properties but also the way in which these properties are perceived by the persons in that environment" (Bronfenbrenner, 1979, p. 22). Experiences in this sense are individual (and collective) constructs of the "objective," which determines an individual's (and a group's) capacity for making meaning and for self-representation (Hall & Lamont, 2009). Experiences, while in part determined by the individual's personality, are embedded in local culture and customs; thus, understanding the cultural frameworks and narratives that shape the relationships and processes within and between settings and systems is crucial to recognizing factors that enhance or weaken the resilience of a developing person.

One example of the cultural or contextual variability in the meaning of experience comes from the empirical literature on the influence of parenting styles on the development of children's academic and social-emotional competencies. Early research indicated that authoritative parenting (which combines warmth with firm control) promoted greater child competence than did authoritarian (low warmth, very high control) or laissez-faire (low warmth, low control) parenting (for reviews, see Baumrind, 1989, 1991). But subsequent research observed race, ethnic, and neighborhood differences in the influence of parenting styles on child competence. In a sample of African American and Latino-American parents living in dangerous inner-city neighborhoods, authoritarian parenting behaviors were associated with less adolescent delinquency than authoritative parenting behaviors (Florsheim, Tolan, & Gorman-Smith, 1996). This pattern of findings has led child developmentalists to believe that "high control" parenting has greater adaptive value in more dangerous neighborhoods and may be "experienced" by children in a different way in those contexts (Furstenberg et al., 1999; Garcia-Coll et al., 1996; McLoyd, 1990; Rodriguez & Walden, 2010).

Finally, only recently have the theory, measures, and mathematical models been available to enable the rigorous empirical study of child and youth development in context. As pointed out previously, children and youth are embedded in and transact with each other in and across contexts. Consequently, the study of peer and other spillover effects in human developmental science has grown, as it has in the social sciences, although many of these studies do not convincingly control for what determines the individuals with whom one interacts. These advances are directly relevant to improving our understanding of the impact of economic shocks on child and youth development.

To reiterate, the human developmental process consequently depends on more than the available resources, prices, policies, and parental preferences for investments in their children. From a human development perspective, if we are to fully understand the effects of economic shocks on child and youth development, we must track the influence of economic (macro) shocks on exo- and mesosystems and in turn on children’s microsystem contexts and the proximal processes-that is, the reciprocal interactions between children and immediate contexts-that are the drivers of human development.

Educational Implications

The Bioecological Model by Bronfenbrenner looked at patterns of development across time as well as the interactions between the development of the child and the environment. The implications of the Model include the social and political policies and practices affecting children, families, and parenting. The Bioecological Model as depicted in Figure 7.1 serve as a visual organizer to both summarize and unpack key concepts and themes as they related to individual development, teaching and learning, and educational practices. As teachers and educators strive to become evidence-based practitioners, the goal of learning this Model is to understand the theoretical and research foundations that inform the work in supporting students' well-being, teaching and learning and identify and use other factors/resources such as parents, family, peers, to provide positive influence on students’ learning and development.

In that regard, Bronfenbrenner‘s Bioecological Model encourages much consideration of what constitutes supportive interactions in fostering development. It goes beyond identifying what might influence development, and, more importantly, assists in considering how and why it influences development. Furthermore, Bronfenbrenner’s theory also assists in considering how an interaction might be added or taken away or improved to foster development and, especially, how a face-to-face interaction between a developing individual and an agent within his or her environment might be changed. Although Bronfenbrenner’s multi-system model has value in identifying the resources that influence development, it is likely of most value in assisting consideration of how the resource might be used. Inherent within this idea is the emphasis Bronfenbrenner places on proximal processes, those interactions nearest to the individual have the greatest influence on the development of the individual.

Criticisms of the Bioecological Model

A criticism of Bronfenbrenner has been that the model focuses too much on the biological and cognitive aspects of human development, but not much on socioemotional aspect of human development. A more comprehensive view of human development with the 3 domains of human development in the center is suggested (Integrated Ecological Systems and Framework, n.d.). This ecological model is called the Integrated Ecological Systems Framework (Figure 7.2).

Figure 7.2 Integrated Ecological Systems Framework

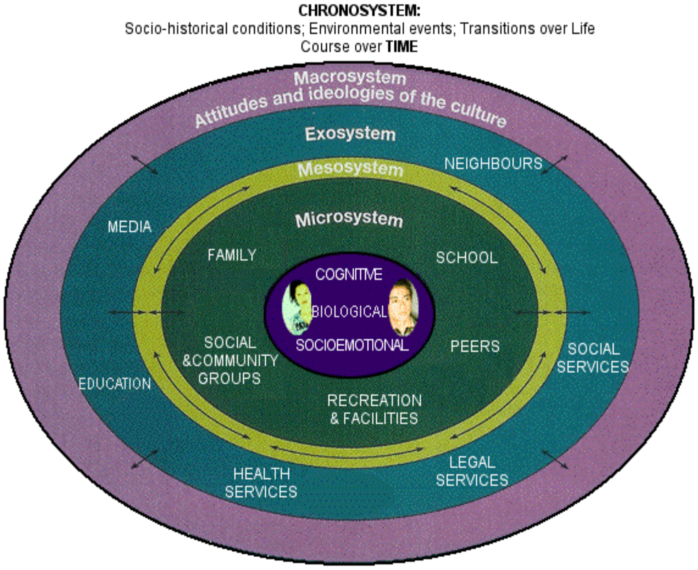
CHRONOSYSTEM:
Socio-historical conditions; Environmental events; Transitions over Life Course over TIME
Macrosystem
Attitudes and ideologies of the culture
Exosystem
NEIGHBOURS
Mesosystem
MEDIA
Microsystem
FAMILY
SCHOOL
COGNITIVE
BIOLOGICAL
SOCIOEMOTIONAL
SOCIAL &COMMUNITY GROUPS
PEERS
SOCIAL SERVICES
EDUCATION
RECREATION & FACILITIES
HEALTH SERVICES
LEGAL SERVICES

Figure 7.2. Source: Integrated Ecological Systems and Framework (n.d.). The picture above illustrated Integrated Systems Framework with 3 domains of human development in the center: Biological Domain, Cognitive Domain, and Socioemotional Domain.

Developmentalists often refer to the three domains as overlapping circles that represent the intricately interwoven relationship between each of the following aspects of an individual's experience (Figure 7.3). *Biological Processes*: the physical changes in an individual's body. *Cognitive Processes:* the changes in an individual's thinking and intelligence. *Socioemotional Processes*: the changes in an individual's relationship with other people in emotions, in personality and in the role of social contexts in development.

Figure 7.3 Processes of Human Development

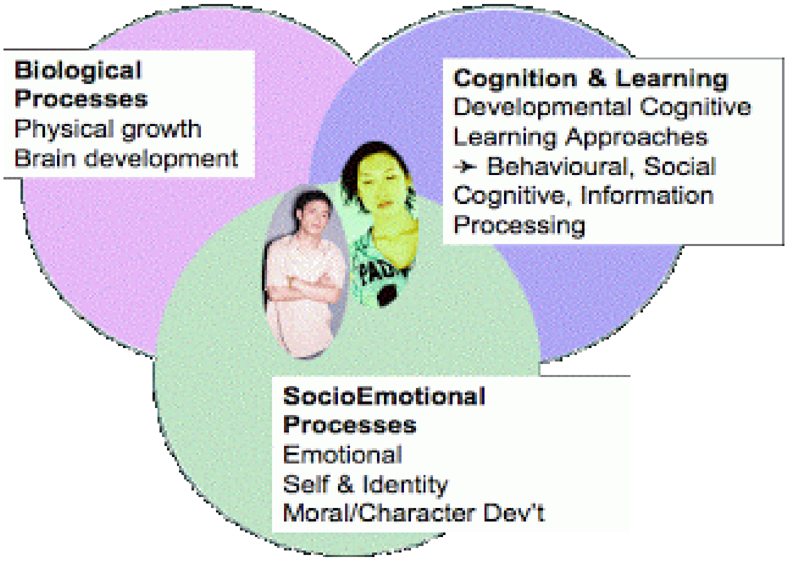
Biological
Processes
Physical growth
Brain development
Cognition & Learning
Developmental Cognitive
Learning Approaches
→ Behavioural, Social
Cognitive, Information
Processing
SocioEmotional
Processes
Emotional
Self & Identity
Moral/Character Dev't

Figure 7.3. Source: Integrated Ecological Systems and Framework. (n.d.). The picture above illustrated the three domains of processes: Biological Processes, Cognitive Processes, and Socioemotional Processes.

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CHAPTER 8

Psychosocial Theory of Identity Development

INTRODUCTION

Erik H. Erikson (1902-1994), born in Germany in 1902, was a world-renowned scholar of the behavioral sciences. His contributions ranged from psychology to anthropology. Moreover, his two biographies, one of Ghandi, the other a Pulitzer-Prize study of Martin Luther, earned him distinction in literature. Curiously, however, he was not a hero in his own house. Serious students of personality theory underscored his seminal contribution: linking individual development to external forces (structured as the "Life Cycle," the stages ranging from infancy to adulthood). Rather than the negations of pathology, Erikson welcomed the affirmation of human strength, stressing always the potential of constructive societal input in personality development. Erikson's dual concepts of an (individual) ego and group identity have become an integral part of group psychology, with terms such as adolescent "identity diffusion," or adolescent "moratorium," having been mainstreamed into everyday language.

In 1933, when the Nazi power was gaining power in Germany, Erikson and his wife and young son left for the US. The Eriksons settled first in Boston. Erikson began teaching at Harvard's medical school, in addition to his work under Henry A. Murray at the university's Psychology Clinic. It was here he met Margaret Mead, Gregory Bateson, Ruth Benedict as well as Kurt Lewin. In 1936, Erikson moved to Yale University where he was attached to both the medical school and to the Yale Institute of Human Relations. His first field study of the Sioux Indians in South Dakota was launched from New Haven. The subsequent work with the Yurok Indians, commenced after he had gone to the University of California in 1939 to join Jean MacFarlane's longitudinal study of personality development. During World War II, Erikson did research for the U.S. Government, including an original study of "Submarine Psychology." In 1950, the same year in which *Childhood and Society*, his most steady-selling book was published, Erikson resigned from the University of California. Though not a Communist, he refused to sign the loyalty contract stating, that "...my conscience did not permit me," to collaborate with witch hunters. He returned to Harvard in the 1960s as a professor of human development and remained there until his retirement in 1970. In 1973 the National Endowment for the Humanities selected Erikson for the Jefferson Lecture, the United States' highest honor for achievement in the humanities.

REQUIRED READING

Erikson's stages of psychosocial development, as articulated by Erik Erikson, in collaboration with Joan Erikson (Thomas, 1997), is a comprehensive psychoanalytic theory that identifies a series of eight stages, in which a healthy developing individual should pass through from infancy to late adulthood. All stages are present at birth but only begin to unfold according to both a natural scheme and one's ecological and cultural upbringing. In each stage, the person confronts, and hopefully masters, new challenges. Each stage builds upon the successful completion of earlier stages. The challenges of stages not successfully completed may be expected to reappear as problems in the future.

However, mastery of a stage is not required to advance to the next stage. The outcome of one stage is not permanent and can be modified by later experiences. Erikson's stage theory characterizes an individual advancing through the eight life stages as a function of negotiating his or her biological forces and sociocultural forces. Each stage is characterized by a psychosocial crisis of these two conflicting forces (Figure 8.1). If an individual does indeed successfully reconcile these forces (favoring the first mentioned attribute in the crisis), he or she emerges from the stage with the corresponding virtue (Figure 8.1). For example, if an infant enters into the toddler stage (autonomy vs. shame and doubt) with more trust than mistrust, he or she carries the virtue of hope into the remaining life stages (Crain, 2011).

Figure 8.1 Psychosocial Identity Development Stages, Virtues, and Crisis

Stage: Approximate Age	Virtues	Psychosocial Crisis	Significant Relationship	Existential Question	Examples
Infancy 0-2 Years	Hope	Trust vs. Mistrust	Mother	Can I trust the world?	Feeding; Abandonment
Early Childhood 2-4 Years	Will	Autonomy vs. Shame and Doubt	Parents	Is it okay to be me?	Toilet Training; Clothing Themselves
Preschool Age 4-5 Years	Purpose	Initiative vs. Guilt	Family	Is it okay for me to do, move, and act?	Exploring; Using Tools or Making Art
School Age 5-12 Years	Competence	Industry vs. Inferiority	Neighbors School	Can I make it in the world of people and things?	School; Sports
Adolescence 13-19 Years	Fidelity	Identity vs. Role Confusion	Peers Role Model	Who am I? Who can I be?	Social Relationships
Early Adulthood 20-39 Years	Love	Intimacy vs. Isolation	Friends Partners	Can I love?	Romantic Relationships
Adulthood 40-64 Years	Care	Generativity vs. Stagnation	Household Workmates	Can I make my life count?	Work; Parenthood
Maturity 65-Death	Wisdom	Ego Integrity vs. Despair	Mankind My kind	Is it okay to have been me?	Reflection on Life

Figure 8.1. The figure above was adapted from the website Introduction to Erikson's 8 Stages (n.d.), and Macnow's (2014) book *MCAT Behavioral Science Review* (p. 220).

Stages of Psychosocial Identity Development

Hope: Trust vs. Mistrust (Infancy, 0-2 years)
Existential Question: Can I Trust the World?

The first stage of Erik Erikson's theory centers around the infant's basic needs being met by the parents and this interaction leading to trust or mistrust. Trust as defined by Erikson is an essential trustfulness of others as well as a fundamental sense of one's own trustworthiness (Sharkey, 1997). The infant depends on the parents, especially the mother, for sustenance and comfort. The child's relative understanding of world and society come from the parents and their interaction with the child. A child's first trust is always with the parent or caregiver; whomever that might be; however, even the caregiver is secondary whereas the parents are primary in the eyes of the child. If the parents expose the child to warmth, regularity, and dependable affection, the infant's view of the world will be one of trust. Should the parents fail to provide a secure environment and to meet the child's basic needs; a sense of mistrust will result (Bee & Boyd, 2009). Development of mistrust can lead to feelings of frustration, suspicion, withdrawal, and a lack of confidence (Sharkey, 1997).

According to Erik Erikson, the major developmental task in infancy is to learn whether or not other people, especially primary caregivers, regularly satisfy basic needs. If caregivers are consistent sources of food, comfort, and affection, an infant learns trust-that others are dependable and reliable. If they are neglectful, or perhaps even abusive, the infant instead learns mistrust-that the world is an undependable, unpredictable, and possibly a dangerous place. While negative, having some experience with mistrust allows the infant to gain an understanding of what constitutes dangerous situations later in life; yet being at the stage of infant or toddler, it is a good idea not to put them in situations of mistrust: the child's number one needs are to feel safe, comforted, and well cared for (Bee & Boyd, 2009).

Will: Autonomy vs. Shame and Doubt (Early Childhood, 2-4 years)
Existential Question: Is It Okay to Be Me?

As the child gains control over eliminative functions and motor abilities, they begin to explore their surroundings. The parents still provide a strong base of security from which the child can venture out to assert their will. The parents' patience and encouragement helps foster autonomy in the child. Children at this age like to explore the world around them and they are constantly learning about their environment. Caution must be taken at this age while children may explore things that are dangerous to their health and safety.

At this age children develop their first interests. For example, a child who enjoys music may like to play with the radio. Children who enjoy the outdoors may be interested in animals and plants. Highly restrictive parents, however, are more likely to instill in the child a sense of doubt, and reluctance to attempt new challenges. As they gain increased muscular coordination and mobility, toddlers become capable of satisfying some of their own needs. They begin to feed themselves, wash and dress themselves, and use the bathroom.

If caregivers encourage self-sufficient behavior, toddlers develop a sense of autonomy-a sense of being able to handle many problems on their own. But if caregivers demand too much too soon, refuse to let children perform tasks of which they are capable, or ridicule early attempts at self-sufficiency, children may instead develop shame and doubt about their ability to handle problems.

Purpose: Initiative vs. Guilt (Preschool, 4-5 years)
Existential Question: Is it Okay for Me to Do, Move, and Act?

Initiative adds to autonomy the quality of undertaking, planning and attacking a task for the sake of just being active and on the move. The child is learning to master the world around them, learning basic skills and principles of physics. Things fall down, not up. Round things roll. They learn how to zip and tie, count and speak with ease. At this stage, the child wants to begin and complete their own actions for a purpose. Guilt is a confusing new emotion. They may feel guilty over things that logically should not cause guilt. They may feel guilt when this initiative does not produce desired results.

The development of courage and independence are what set preschoolers, ages three to six years of age, apart from other age groups. Young children in this category face the challenge of initiative versus guilt. As described in Bee and Boyd (2009), the child during this stage faces the complexities of planning and developing a sense of judgment. During this stage, the child learns to take initiative and prepare for leadership and goal achievement roles. Activities sought out by a child in this stage may include risk-taking behaviors, such as crossing a street alone or riding a bike without a helmet; both these examples involve self-limits.

Within instances requiring initiative, the child may also develop negative behaviors. These behaviors are a result of the child developing a sense of frustration for not being able to achieve a goal as planned and may engage in behaviors that seem aggressive, ruthless, and overly assertive to parents. Aggressive behaviors, such as throwing objects, hitting, or yelling, are examples of observable behaviors during this stage.

Preschoolers are increasingly able to accomplish tasks on their own, and can start new things. With this growing independence comes many choices about activities to be pursued. Sometimes children take on projects they can readily accomplish, but at other times they undertake projects that are beyond their capabilities or that interfere with other people's plans and activities. If parents and preschool teachers encourage and support children's efforts, while also helping them make realistic and appropriate choices, children develop initiative-independence in planning and undertaking activities. But if, instead, adults discourage the pursuit of independent activities or dismiss them as silly and bothersome, children develop guilt about their needs and desires (Rao, 2012).

Competence: Industry vs. Inferiority (School Age, 5-12 Years)
Existential Question: Can I Make it in the World of People and Things?

The aim to bring a productive situation to completion gradually supersedes the whims and wishes of play. The fundamentals of technology are developed. The failure to master trust, autonomy, and industrious skills may cause the child to doubt his or her future, leading to shame, guilt, and the experience of defeat and inferiority (Erik Erikson's Stages of Social-Emotional Development, n.d.). The child must deal with demands to learn new skills or risk a sense of inferiority, failure, and incompetence.

Children at this age are becoming more aware of themselves as "individuals." They work hard at "being responsible, being good and doing it right." They are now more reasonable to share and cooperate. Allen and Marotz (2003) also list some perceptual cognitive developmental traits specific for this age group. Children grasp the concepts of space and time in more logical, practical ways. They gain a better understanding of cause and effect, and of calendar time. At this stage, children are eager to learn and accomplish more complex skills: reading, writing, telling time. They also get to form moral values, recognize cultural and individual differences and are able to manage most of their personal needs and grooming with minimal assistance (Allen & Marotz, 2003). At this stage, children might express their independence by talking back and being disobedient and rebellious.

Erikson viewed the elementary school years as critical for the development of self-confidence. Ideally, elementary school provides many opportunities to achieve the recognition of teachers, parents and peers by producing things-drawing pictures, solving addition problems, writing sentences, and so on. If children are encouraged to make and do things and are then praised for their accomplishments, they begin to demonstrate industry by being diligent, persevering at tasks until completed, and putting work before pleasure. If children are instead ridiculed or punished for their efforts or if they find they are incapable of meeting their teachers' and parents' expectations, they develop feelings of inferiority about their capabilities (Crain, 2011).

At this age, children start recognizing their special talents and continue to discover interests as their education improves. They may begin to choose to do more activities to pursue that interest, such as joining a sport if they know they have athletic ability, or joining the band if they are good at music. If not allowed to discover their own talents in their own time, they will develop a sense of lack of motivation, low self-esteem, and lethargy. They may become "couch potatoes" if they are not allowed to develop interests.

Fidelity: Identity vs. Role Confusion (Adolescence, 13-19 Years)
Existential Question: Who Am I and What Can I Be?

The adolescent is newly concerned with how they appear to others. Superego identity is the accrued confidence that the outer sameness and continuity prepared in the future are matched by the sameness and continuity of one's meaning for oneself, as evidenced in the promise of a career. The ability to settle on a school or occupational identity is pleasant. In later stages of adolescence, the child develops a sense of sexual identity. As they make the transition from childhood to adulthood, adolescents ponder the roles they will play in the adult world. Initially, they are apt to experience some role confusion-mixed ideas and feelings about the specific ways in which they will fit into society-and may experiment with a variety of behaviors and activities (e.g. tinkering with cars, baby-sitting for neighbors, affiliating with certain political or religious groups). Eventually, Erikson proposed, most adolescents achieve a sense of identity regarding who they are and where their lives are headed. The teenager must achieve identity in occupation, gender roles, politics, and, in some cultures, religion.

Erikson is credited with coining the term "identity crisis" (Gross, 1987, p. 47). Each stage that came before and that follows has its own "crisis" but even more so now, for this marks the transition from childhood to adulthood. This passage is necessary because "Throughout infancy and childhood, a person forms many identifications. But the need for identity in youth is not met by these" (Wright, 1982, p. 73). This turning point in human development seems to be the reconciliation between "the person one has come to be" and "the person society expects one to become." This emerging sense of self will be established by "forging" past experiences with anticipations of the future. In relation to the eight life stages as a whole, the fifth stage corresponds to the crossroads.

What is unique about the stage of Identity is that it is a special sort of synthesis of earlier stages and a special sort of anticipation of later ones. Youth has a certain unique quality in a person's life; it is a bridge between childhood and adulthood. Youth is a time of radical change-the great body changes accompanying puberty, the ability of the mind to search one's own intentions and the intentions of others, the suddenly sharpened awareness of the roles society has offered for later life (Gross,1987).

Adolescents "are confronted by the need to re-establish [boundaries] for themselves and to do this in the face of an often potentially hostile world" (Stevens, 1983, pp. 48-50). This is often challenging since commitments are being asked for before particular identity roles have formed. At this point, one is in a state of “identity confusion” but society normally makes allowances for youth to "find themselves" and this state is called “the moratorium.”

The problem of adolescence is one of role confusion-a reluctance to commit which may haunt a person into his mature years. Given the right conditions-and Erikson believes these are essentially having enough space and time, a psychosocial moratorium, when a person can freely experiment and explore-what may emerge is a firm sense of identity, an emotional and deep awareness of who he or she is (Stevens, 1983, pp. 48-50).

As in other stages, bio-psycho-social forces are at work. No matter how one has been raised, one's personal ideologies are now chosen for oneself. Often, this leads to conflict with adults over religious and political orientations. Another area where teenagers are deciding for themselves is their career choice, and often parents want to have a decisive say in that role. If society is too insistent, the teenager will acquiesce to external wishes, effectively forcing him or her to ‘foreclose' on experimentation and, therefore, true self-discovery. Once someone settles on a worldview and vocation, will he or she be able to integrate this aspect of self-definition into a diverse society? According to Erikson, when an adolescent has balanced both perspectives of "What have I got?" and "What am I going to do with it?" he or she has established their identity (Gross, 1987). Dependent on this stage is the ego quality of fidelity-the ability to sustain loyalties freely pledged in spite of the inevitable contradictions and confusions of value systems (Stevens, 1983).

Given that the next stage (Intimacy) is often characterized by marriage, many are tempted to cap off the fifth stage at 20 years of age. However, these age ranges are actually quite fluid, especially for the achievement of identity, since it may take many years to become grounded, to identify the object of one's fidelity, to feel that one has "come of age". In the biographies *Young Man Luther* and *Gandhi's Truth*, Erikson determined that their crises ended at ages 25 and 30, respectively.

Erikson does note that the time of Identity crisis for persons of genius is frequently prolonged. He further notes that in our industrial society, identity formation tends to be long, because it takes us so long to gain the skills needed for adulthood's tasks in our technological world. So… we do not have an exact time span in which to find ourselves. It doesn't happen automatically at eighteen or at twenty-one. A very approximate rule of thumb for our society would put the end somewhere in one's twenties (Gross, 1987).

Love: Intimacy vs. Isolation (Early Adulthood, 20-39 years)

Existential Question: Can I Love?

The Intimacy vs. Isolation conflict is emphasized around the age of 30. At the start of this stage, identity vs. role confusion is coming to an end, though it still lingers at the foundation of the stage (Erikson, 1950). Young adults are still eager to blend their identities with friends. They want to fit in. Erikson believes we are sometimes isolated due to intimacy. We are afraid of rejections such as being turned down or our partners breaking up with us. We are familiar with pain and to some of us rejection is so painful that our egos cannot bear it. Erikson also argues that "Intimacy has a counterpart: Distantiation: the readiness to isolate and if necessary, to destroy those forces and people whose essence seems dangerous to our own, and whose territory seems to encroach on the extent of one's intimate relations" (Erikson, 1950, p. 237).

Once people have established their identities, they are ready to make long-term commitments to others. They become capable of forming intimate, reciprocal relationships (e.g. through close friendships or marriage) and willingly make the sacrifices and compromises that such relationships require. If people cannot form these intimate relationships-perhaps because of their own needs-a sense of isolation may result; arousing feelings of darkness and angst.

Care: Generativity vs. Stagnation (Adulthood, 40-64 years)
Existential Question: Can I Make My Life Count?

Generativity is the concern of guiding the next generation. Socially-valued work and disciplines are expressions of generativity. The adult stage of generativity has broad application to family, relationships, work, and society. "Generativity, then is primarily the concern in establishing and guiding the next generation... the concept is meant to include... productivity and creativity" (Erikson, 1950, p. 240).

During middle age the primary developmental task is one of contributing to society and helping to guide future generations. When a person makes a contribution during this period, perhaps by raising a family or working toward the betterment of society, a sense of generativity-a sense of productivity and accomplishment-results. In contrast, a person who is self-centered and unable or unwilling to help society move forward develops a feeling of stagnation-a dissatisfaction with the relative lack of productivity. Central tasks of middle adulthood are to:

- Express love through more than sexual contacts.
- Maintain healthy life patterns.
- Develop a sense of unity with mate.
- Help growing and grown children to be responsible adults.
- Relinquish central role in lives of grown children.
- Accept children's mates and friends.
- Create a comfortable home.
- Be proud of accomplishments of self and mate/spouse.
- Reverse roles with aging parents.
- Achieve mature, civic and social responsibility.
- Adjust to physical changes of middle age.
- Use leisure time creatively.

Wisdom: Ego Integrity vs. Despair (Maturity, 65-Death)
Existential Question: Is it Okay to Have Been Me?

As we grow older and become senior citizens we tend to slow down our productivity and explore life as a retired person. It is during this time that we contemplate our accomplishments and are able to develop integrity if we see ourselves as leading a successful life. If we see our life as unproductive, or feel that we did not accomplish our life goals, we become dissatisfied with life and develop despair, often leading to depression and hopelessness.

The final developmental task is retrospection: people look back on their lives and accomplishments. They develop feelings of contentment and integrity if they believe that they have led a happy, productive life. They may instead develop a sense of despair if they look back on a life of disappointments and unachieved goals. This stage can occur out of the sequence when an individual feels they are near the end of their life (such as when receiving a terminal disease diagnosis).

Ninth Stage

Joan M. Erikson, who married and collaborated with Erik Erikson, added a ninth stage in *The Life Cycle Completed: Extended Version* (Erikson & Erikson, 1998). Living in the ninth stage, she wrote, "old age in one's eighties and nineties brings with it new demands, reevaluations, and daily difficulties" (Erikson & Erikson, 1998, p. 4). Addressing these new challenges requires "designating a new ninth stage". Erikson was ninety-three years old when she wrote about the ninth stage (Erikson & Erikson, 1998, p. 105).

Joan Erikson showed that all the eight stages "are relevant and recurring in the ninth stage" (Mooney, 2007, p. 78). In the ninth stage, the psychosocial crises of the eight stages are faced again, but with the quotient order reversed. For example, in the first stage (infancy), the psychosocial crisis was "Trust vs. Mistrust" with Trust being the "syntonic quotient" and Mistrust being the "diatonic" (Erikson & Erikson, 1998, p. 106). Joan Erikson applies the earlier psychosocial crises to the ninth stage as follows:

- *Basic Mistrust vs. Trust: Hope*
  In the ninth stage, "elders are forced to mistrust their own capabilities" because one's "body inevitably weakens." Yet, Joan Erikson asserts that "while there is light, there is “hope” for a "bright light and revelation" (Erikson & Erikson, 1998, pp. 106-107).
- *Shame and Doubt vs. Autonomy: Will*
  Ninth stage elders face the "shame of lost control" and doubt "their autonomy over their own bodies." So it is that "shame and doubt challenge cherished autonomy" (Erikson & Erikson, 1998, pp. 107-108).
- *Inferiority vs. Industry: Competence*
  Industry as a "driving force" that elders once had is gone in the ninth stage. Being incompetent "because of aging is belittling" and makes elders "like unhappy small children of great age" (Erikson & Erikson, 1998, p. 109).
- *Identity Confusion vs. Identity: Fidelity*
  Elders experience confusion about their "existential identity" in the ninth stage and "a real uncertainty about status and role" (Erikson & Erikson, 1998, pp. 109-110).
- *Isolation vs. Intimacy: Love*
  In the ninth stage, the "years of intimacy and love" are often replaced by "isolation and deprivation." Relationships become "overshadowed by new incapacities and dependencies" (Erikson & Erikson, 1998, pp. 110-111).
- *Stagnation vs. Generativity: Care*
  The generativity in the seventh stage of "work and family relationships" if it goes satisfactorily, is "a wonderful time to be alive." In one's eighties and nineties, there is less energy for generativity or caretaking. Thus, "a sense of stagnation may well take over" (Erikson & Erikson, 1998, pp. 111-112).
- *Despair and Disgust vs. Integrity: Wisdom*
  Integrity imposes "a serious demand on the senses of elders." Wisdom requires capacities that ninth stage elders "do not usually have." The eighth stage includes retrospection that can evoke a "degree of disgust and despair." In the ninth stage, introspection is replaced by the attention demanded to one's "loss of capacities and disintegration" (Erikson & Erikson, 1998, pp. 112-113).

Living in the ninth stage, Joan Erikson expressed confidence that the psychosocial crisis of the ninth stage can be met as in the first stage with the "basic trust" with which "we are blessed" (Erikson & Erikson, 1998, pp. 112-113). Erikson saw a dynamic at work throughout life, one that did not stop at adolescence. He also viewed the life stages as a cycle: the end of one generation was the beginning of the next. Seen in its social context, the life stages were linear for an individual but circular for societal development (Erikson, 1950). Erik Erikson believed that development continues throughout life. Erikson took the foundation laid by Freud and extended it through adulthood and into late life (Kail & Cavanaugh, 2004).

Criticism of the Psychosocial Theory of Identity Development

Erikson's theory may be questioned as to whether his stages must be regarded as sequential, and only occurring within the age ranges he suggests. There is debate as to whether people only search for identity during the adolescent years or if one stage needs to happen before other stages can be completed. However, Erikson states that each of these processes occur throughout the lifetime in one form or another, and he emphasizes these "phases" only because it is at these times that the conflicts become most prominent (Erikson, 1956).

Most empirical research into Erikson has related to his views on adolescence and attempts to establish identity. His theoretical approach was studied and supported, particularly regarding adolescence, by James E. Marcia. Marcia's work (1966) has distinguished different forms of identity, and there is some empirical evidence that those people who form the most coherent self-concept in adolescence are those who are most able to make intimate attachments in early adulthood. This supports Eriksonian theory in that it suggests that those best equipped to resolve the crisis of early adulthood are those who have most successfully resolved the crisis of adolescence.

Educational Implications

Teachers who apply psychosocial development in the classroom create an environment where each child feels appreciated and is comfortable with learning new things and building relationships with peers without fear (Hooser, 2010). Teaching Erikson’s theory at the different grade levels is important to ensure that students will attain mastery of each stage in Erikson's theory without conflict. There are specific classroom activities that teachers can incorporate into their classroom during the three stages that include school age children. The activities listed below are just a few suggested examples that apply psychosocial development.

At the preschool level, teachers want to focus on developing a hardy personality. Classroom examples that can be incorporated at the Preschool Level are as follows:

1. Find out what students are interested in and create projects that incorporate their area of interest.
2. Let the children be in charge of the learning process when participating in a classroom project. This will exhibit teacher appreciation for the areas of interest of the students as well as confidence in their ability.
3. Make sure to point out and praise students for good choices.
4. Offer continuous feedback on work that has been completed.
5. Do not ridicule or criticize students openly. Find a private place to talk with a child about a poor choice or behavior. Help students formulate their own alternate choices by guiding them to a positive solution and outcome.
6. When children experiment, they should not be punished for trying something that may turn out differently than the teacher planned.
7. Utilize physical activity to teach fairness and sportsmanship (Bianca, 2010).

Teachers should focus on achievement and peer relationships at the Elementary Level. Classroom examples that can be incorporated at the Elementary Level are as follows:

1. Create a list of classroom duties that needed to be completed on a scheduled basis. Ask students for their input when creating the list as well as who will be in charge of what.
2. Discuss and post classroom rules. Make sure to include students in the decision-making process when discussing rules.
3. Encourage students to think outside of their day-to-day routine by role playing different situations.
4. Let students know that striving for perfection is not as important as learning from mistakes. Teach them to hold their head high and move forward.
5. Encourage children to help students who may be having trouble socially and/or academically. Never allow any child to make fun of or bully another child.
6. Build confidence by recognizing success in what children do best.
7. Provide a variety of choices when making an assignment so that students can express themselves with a focus on their strengths.
8. Utilize physical activity to build social development and to help students appreciate their own abilities as well as the abilities of others (Bianca, 2010).

During the middle and high school years, building identity and self-esteem should be part of a teacher's focus. Classroom examples that can be incorporated at the Middle School and High School Level are as follows:

1. Treat all students equally. Do not show favoratism to a certain group of students based on gender, race, academic ability or socioeconimic status.
2. Incorporate guest speakers and curriculum activities from as many areas as possible so as to expose students to many career choices.
3. Encourage students to focus on their strengths and acknowledge them when they exhibit work that incorporates these strengths.
4. Encourage students to develop confidence by trying different approaches to solving problems.
5. Incorporate life skills into lesson planning to increase confidence and self-sufficiency.
6. Utilize physical activity to help relieve stress, negative feelings and improve moods (Bianca, 2010).

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CHAPTER 9

Theory of Multiple Intelligences

INTRODUCTION

Howard Gardner (1943-) currently serves as the John H. and Elisabeth A. Hobbs Professor of Cognition of Education at the Harvard Graduate School of Education. He also holds positions as Adjunct Professor of Psychology at Harvard University and Senior Director of Harvard Project Zero. Among numerous honors, Gardner received a MacArthur Prize Fellowship in 1981 and the University of Louisville's Grawemeyer Award in Education in 2000. He has received honorary degrees from twenty-nine colleges and universities, including institutions in Bulgaria, Chile, Greece, Ireland, Israel, Italy, South Korea and Spain. He has twice been selected by Foreign Policy and Prospect magazines as one of the 100 most influential public intellectuals in the world. In 2011, Gardner received the Prince of Asturias Award for Social Sciences. Gardner is best known in educational for his theory of multiple intelligences, a critique of the notion that there exists but a single human intelligence that can be adequately assessed by standard psychometric instruments.

REQUIRED READING

Multiple Intelligences Scenario

Ms. Cunningham, a seventh grade American History teacher, is preparing a unit on the American Civil Rights Movement of the 1950's and 1960's. The teacher has created a succession of lessons to be completed over a two-week period to enhance her students' understanding of the events, organizations, and individuals that were crucial to the movement. When the unit is over, Ms. Cunningham wants her students to have a complete picture of the historical period. She designs a variety of activities that give the students the opportunity to explore historical and cultural aspects of the 1950's and 1960's, and to fully identify with those who were involved in the Movement. In order to reach her instructional goals, the students will read selected excerpts from the textbook and listen to various lecturers about the Movement. In addition to the aforementioned, the students will complete several exploratory tasks about the Civil Rights Movement as well.

To begin the unit the teacher uses a KWL chart on the overhead to spur discussion and start the students' "juices" flowing. A KWL chart is a visual representation of what students already know, what they want to know, and what they learned at the end of a lesson. This activity is completed as a class. The students take turns sharing the tidbits of information that they already know about the Civil Rights movement. This information is on major figures, events and places involved in the Civil Rights movement. Upon establishing what basic prior knowledge the students possess, it is now time to begin discovering new information and confirming previously held information about the Civil Rights movement. Ms. Cunningham then lectures on the basic events, people, and places involved in the majority of the Civil Rights movement in order to provide students some framework within which to begin placing their new information.

She closes the first lesson by asking the students to create a timeline using the dates of events she has provided. This will be a working outline to be used throughout the unit. During a subsequent lesson, students are asked to share their outlines with their classmates in small groups. They should make corrections and comments on the outlines as needed. Ms. Cunningham gains class consensus of the proper order for their working outline as she places an enlarged version on the classroom wall.

The culmination of this unit will be a final project in which students create a portfolio containing work on three mini-projects. All students will listen to the same guest lecturers, view the same video-taped footage and participate in the same class discussions during the first half of each class. The remainder of each class period will be reserved for work on personal exploration pertaining to their portfolio pieces. Ms. Cunningham has provided a list of possible activities and a rubric for each suggested activity in order to support and to guide the student's work. She has also arranged her room so that "art" materials are in a central location. Mapping and graphing information is grouped together and there is a section with reading and research materials.

Mrs. Cunningham's students will have many options for creating something chat can be included in their portfolios. Students will have the option to write letters to members of the community who were teenagers during the Civil Rights Movement, asking them to share their memories and experiences about life during the time period. Students may work in teams to prepare speeches based on period issues for their fellow classmates. Students may consult with the school's Media Specialist or more knowledgeable other to find resources for the class, including popular music from the time period. They may also learn and share dances that were popular during the 1950's and 1960's. If they choose, students may include music in the plays they write and act out for their classmates. With the assistance of the Art instructor, students may opt to work together to create a mural that represents key figures of the Civil Rights Movement such as Rosa Parks and Martin Luther King Jr., with accompanying biographical information about each leader. Students may also create a map representing key events. Students may also work in groups to prepare short plays to enact for the class based on the readings and what they learn from the guest speakers. Afterwards, Mrs. Cunningham will moderate discussion sessions about the plays. All students will keep a record of their thoughts and feelings about the mini-lessons they completed. This journaling process will provide a synthesis of the materials with which they dealt. As one final measure, students present their portfolios to their classmates.

James, a student whose proclivities lean towards creative visual projects expresses interest in working on the mural of Civil Rights leaders. Mrs. Cunningham feels that James needs to shift gears and concentrate on other activities in the classroom. The teacher suggests that James work on creating the map and/or timeline. At the teacher's encouragement, James begins to work on the other projects, but his attention continues to drift towards the students painting the mural. He contributes some excellent ideas and shows so much interest in the details and creation of the mural, that the teacher allows him to shift his focus back towards the visual project.

In another seventh grade classroom, Mr. Smith taught a unit on the Civil Rights Movement by assigning textbook readings and lecturing the students on the historical events surrounding the Movement. Students were given sentence completion pop quizzes throughout the course of the lesson. The teacher showed videotaped programs to the class and each student wrote a short research paper about a Civil Rights leader or prominent figure. At the end of the unit, students were given a multiple choice and essay test.

What Is the Theory of Multiple Intelligences?

Howard Gardner's Theory of Multiple Intelligences utilizes aspects of cognitive and developmental psychology, anthropology, and sociology to explain the human intellect. Although Gardner had been working towards the concept of Multiple Intelligences for many years prior, the theory was not introduced until his book Gardner (1983) *Frames of Mind* was published. Gardner's research consisted of brain research and interviews with stroke victims, prodigies, and individuals with autism. Based on his findings, Gardner established eight criteria for identifying the seven separate intelligences. The eight criteria used by Gardner to identify the intelligences are listed below:

- Isolation by brain damage/neurological evidence;
- The existence of prodigies, idiot savants, and exceptional individuals;
- Distinguishable set of core operations;
- Developmental stages with an expert end state;
- Evolutionary history and plausibility;
- Susceptibility to encoding in a symbol system;
- Support from experimental psychological tasks; and
- Support from psychometric research

Originally, the theory accounted for seven separate intelligences. Subsequently, with the publishing of Gardner's (1999) book *Intelligence Reframed*, two more intelligences were added to the list. The nine intelligences are Verbal/Linguistic, Logical/Mathematical, Visual/Spatial, Bodily-Kinesthetic, Musical, Interpersonal, Intrapersonal, Naturalistic, and Existential. Gardner's theory challenges traditional, narrower views of intelligence. Previously accepted ideas of human intellectual capacity contend that an individual's intelligence is a fixed entity throughout his lifetime and that intelligence can be measured through an individual's logical and language abilities. According to Gardner's theory, an intelligence encompasses the ability to create and solve problems, create products or provide services that are valued within a culture or society. Listed below are key points of Gardner's theory:

- All human beings possess all nine intelligences in varying degrees.
- Each individual has a different intelligence profile.

- Education can be improved by assessment of students' intelligence profiles and designing activities accordingly.
- Each intelligence occupies a different area of the brain.
- The nine intelligences may operate in consort or independently from one another.
- These nine intelligences may define the human species.

The Nine Multiple Intelligences

Verbal/Linguistic. Verbal/Linguistic intelligence refers to an individual's ability to understand and manipulate words and languages. Everyone is thought to possess this intelligence at some level. This includes reading, writing, speaking, and other forms of verbal and written communication. Teachers can enhance their students' verbal/linguistic intelligence by having them keep journals, play word games, and by encouraging discussion. People with strong rhetorical and oratory skills such as poets, authors, and attorneys exhibit strong linguistic intelligence. Some examples are T.S. Elliot, Maya Angelou, and Martin Luther King Jr. Traditionally, linguistic intelligence and logical/mathematical intelligence have been highly valued in education and learning environments.

Logical/Mathematical. Logical/Mathematical intelligence refers to an individual's ability to do things with data: collect, and organize, analyze and interpret, conclude and predict. Individuals strong in this intelligence see patterns and relationships. These individuals are oriented toward thinking: inductive and deductive logic, numeration, and abstract patterns. They would be a contemplative problem solver-one who likes to play strategy games and to solve mathematical problems. Being strong in this intelligence often implies great scientific ability. This is the kind of intelligence studied and documented by Piaget. Teachers can strengthen this intelligence by encouraging the use of computer programming languages, critical-thinking activities, linear outlining, Piagetian cognitive stretching exercises, science-fiction scenarios, logic puzzles, and through the use of logical/sequential presentation of subject matter. Some real life examples people who are gifted with this intelligence are Albert Einstein, Niehls Bohr, and John Dewey.

Visual/Spatial. Visual/Spatial intelligence refers to the ability to form and manipulate a mental model. Individuals with strength in this area depend on visual thinking and are very imaginative. People with this kind of intelligence tend to learn most readily from visual presentations such as movies, pictures, videos, and demonstrations using models and props. They like to draw, paint, or sculpt their ideas and often express their feelings and moods through art. These individuals often daydream, imagine and pretend. They are good at reading diagrams and maps and enjoy solving mazes and jigsaw puzzles. Teachers can foster this intelligence by utilizing charts, graphs, diagrams, graphic organizers, videotapes, color, art activities, doodling, microscopes and computer graphics software. It could be characterized as right-brain activity. Pablo Picasso, Bobby Fischer, and Georgia O'Keefe are some examples of people gifted with this intelligence.

Bodily/Kinesthetic. Bodily/Kinesthetic intelligence refers to people who process information through the sensations they feel in their bodies. These people like to move around, touch the people they are talking to and act things out. They are good at small and large muscle skills; they enjoy all types of sports and physical activities. They often express themselves through dance. Teachers may encourage growth in this area of intelligence through the use of touching, feeling, movement, improvisation, "hands-on" activities, permission to squirm and wiggle, facial expressions and physical relaxation exercises. Some examples of people who are gifted with this intelligence are Michael Jordan, Martina Navratilova, and Jim Carrey.

Musical. Musical intelligence refers to the ability to understand, create, and interpret musical pitches, timbre, rhythm, and tones and the capability to compose music. Teachers can integrate activities into their lessons that encourage students' musical intelligence by playing music for the class and assigning tasks that involve students creating lyrics about the material being taught. Composers and instrumentalists are individuals with strength in this area. Wolfgang Amadeus Mozart and Louis Armstrong are examples.

Interpersonal. Although Gardner classifies interpersonal and intrapersonal intelligences separately, there is a lot of interplay between the two and they are often grouped together. Interpersonal intelligence is the ability to interpret and respond to the moods, emotions, motivations, and actions of others. Interpersonal intelligence also requires good communication and interaction skills, and the ability show empathy towards the feelings of other individuals. Teachers can encourage the growth of interpersonal intelligence by designing lessons that include group work and by planning cooperative learning activities. Counselors and social workers are professions that require strength in this area. Some examples of people with this intelligence include Gandhi, Ronald Reagan, and Bill Clinton.

Intrapersonal. Intrapersonal intelligence, simply put, is the ability to know oneself. It is an internalized version of Interpersonal Intelligence. To exhibit strength in Intrapersonal Intelligence, an individual must be able to understand their own emotions, motivations, and be aware of their own strengths and weaknesses. Teachers can assign reflective activities, such as journaling to awaken students' intrapersonal intelligence. It's important to note that this intelligence involves the use of all others. An individual should tap into their other intelligences to completely express their intrapersonal intelligence. Those who are often associated with this intelligence are Sigmund Freud, Plato, or Virginia Woolf.

Figure 9.1 Summary of the Eight Accepted Multiple Intelligences

Intelligence	Strengths	Preferences	Learns Best Through	Needs
Verbal / Linguistic	Writing, reading, memorizing dates, thinking in words, telling stories	Write, read, tell stories, talk, memorize, work at solving puzzles	Hearing and seeing words, speaking, reading, writing, discussing and debating	Books, tapes, paper diaries, writing tools, dialogue, discussion, debated, stories, etc.
Mathematical/ Logical	Math, logic, problem-solving, reasoning, patterns	Question, work with numbers, experiment, solve problems	Working with relationships and patterns, classifying, categorizing, working with the abstract	Things to think about and explore, science materials, manipulative, trips to the planetarium and science museum, etc.
Visual/Spatial	Maps, reading charts, drawing, mazes, puzzles, imagining things, visualization	Draw, build, design, create, daydream, look at pictures	Working with pictures and colors, visualizing, using the mind's eye, drawing	LEGOs, video, movies, slides, art, imagination games, mazes, puzzles, illustrated book, trips to art museums, etc.
Bodily / Kinesthetic	Athletics, dancing, crafts, using tools, acting	Move around, touch and talk, body language	Touching, moving, knowledge through bodily sensations, processing	Role-play, drama, things to build, movement, sports and physical games, tactile experiences, hands-on learning, etc.
Musical	Picking up sounds, remembering melodies, rhythms, singing	Sing, play an instrument, listen to music, hum	Rhythm, singing, melody, listening to music and melodies	Sing-along time, trips to concerts, music playing at home and school, musical instruments, etc.
Interpersonal	Leading, organizing, understanding people, communicating, resolving conflicts, selling	Talk to people, have friends, join groups	Comparing, relating, sharing, interviewing, cooperating	Friends, group games, social gatherings, community events, clubs, mentors/ apprenticeships, etc.
Intrapersonal	Recognizing strengths and weaknesses, setting goals, understanding self	Work alone, reflect pursue interests	Working alone, having space, reflecting, doing self-paced projects	Secret places, time alone, self-paced projects, choices, etc.
Naturalistic	Understanding nature, making distinctions, identifying flora and fauna	Be involved with nature, make distinctions	Working in nature, exploring living things, learning about plants and natural events	Order, same/different, connections to real life and science issues, patterns

Figure 9.1. The figure above summarizes the strengths, learning preferences, and needs that correspond to the intelligences.

Naturalistic. Naturalistic intelligence is seen in someone who recognizes and classifies plants, animals, and minerals including a mastery of taxonomies. They are holistic thinkers who recognize specimens and value the unusual. They are aware of species such as the flora and fauna around them. They notice natural and artificial taxonomies such as dinosaurs to algae and cars to clothes. Teachers can best foster this intelligence by using relationships among systems of species, and classification activities. Encourage the study of relationships such as patterns and order, and compare-and-contrast sets of groups or look at connections to real life and science issues. Charles Darwin and John Muir are examples of people gifted in this way.

Existential Intelligence. There is a ninth intelligence that has yet to experience full acceptance by educators in the classroom. That is existential intelligence, which encompasses the ability to pose and ponder questions regarding the existence-including life and death. This would be in the domain of philosophers and religious leaders.

Educational Implications

Although the theory was not originally designed for use in a classroom application, it has been widely embraced by educators and enjoyed numerous adaptations in a variety of educational settings. Teachers have always known that students had different strengths and weaknesses in the classroom. Gardner's research was able to articulate that and provide direction as to how to improve a student's ability in any given intelligence. Teachers were encouraged to begin to think of lesson planning in terms of meeting the needs of a variety of the intelligences. From this new thinking, schools such the Ross School in New York, an independent educational institution, and the Key Learning Community, a public magnet school in Indianapolis emerged to try teaching using a Multiple Intelligences curriculum. The focus of this part of the chapter will be on lesson design using the theory of Multiple Intelligences, and providing various resources that educators may use to implement the theory into their classroom activities.

Multiple Intelligences in the Classroom

There are many ways to incorporate Multiple Intelligences theory into the curriculum, and there is no set method by which to incorporate the theory. Some teachers set up learning centers with resources and materials that promote involving the different intelligences. For example, in the above scenario, Ms. Cunningham creates an area with art supplies in her classroom. Other instructors design simulations that immerse students into real life situations. Careful planning during the lesson design process will help to ensure quality instruction and valuable student experiences in the classroom.

Other instructional models, such as project-based and collaborative learning may be easily integrated into lessons with Multiple Intelligences. Collaborative learning allows students to explore their interpersonal intelligence, while project-based learning may help structure activities designed to cultivate the nine intelligences. For instance, Ms. Cunningham uses aspects of project-based learning in her classroom by allowing students to plan, create, and process (through reflection) information throughout the Civil Rights unit, while also integrating activities that teach to the intelligences. This particular instructional model allows students to work together to explore a topic and to create something as the end product. This works well with Multiple Intelligences theory, which places value on the ability to create products. By collaborating with the Media Specialist to give students the opportunity to choose from a variety of resources to complete their assignments, Ms. Cunningham uses aspects of resource-based learning, an instructional model that places the ultimate responsibility of choosing resources on the student. It is important for teachers to carefully select activities that not only teach to the intelligences, but also realistically mesh with the subject matter of the lesson or unit. Multiple Intelligences theory should enhance, not detract from what is being taught.

Disney's website entitled Tapping into Multiple Intelligences suggests two approaches for implementing Multiple Intelligences theory in the classroom. One is a teacher-centered approach, in which the instructor incorporates materials, resources, and activities into the lesson that teach to the different intelligences. The other is a student-centered approach in which students actually create a variety of different materials that demonstrate their understanding of the subject matter. The student-centered approach allows students to actively use their varied forms of intelligence. In a teacher-centered lesson, the number of intelligences explored should be limited to two or three. To teach less than two is nearly impossible since the use of speech will always require the use of one's verbal/linguistic intelligence. In a student-centered lesson, the instructor may incorporate aspects of project-based learning, collaborative learning, or other inquiry-based models. In such a case, activities involving all nine intelligences may be presented as options for the class, but each student participates in only one or two of the tasks.

Ms. Cunningham incorporates both student-centered and teacher-centered activities into her unit on the Civil Rights Movement. The teacher-led lecture is a standard example of a teacher-centered activity. The lecture teaches to students' verbal/linguistic intelligence. The viewing of the videotape is another example of a teacher-centered activity. This activity incorporates visual/spatial intelligence into how the unit is learned. It is important to note that many activities, although designed to target a particular intelligence, may also utilize other intelligences as well. For example, in Ms. Cunningham's classroom the students may work together on creating a mural of Civil Rights leaders. This is a student-centered activity that directly involves visual/spatial intelligence, but also gives students a chance to exercise their Interpersonal intelligence. The journal assignment, also a student-centered activity, is designed to enhance students' Intrapersonal intelligence by prompting them to reflect on their feelings and experiences in relation to the Civil Rights Movement.

This activity also taps into verbal/linguistic intelligence. The timeline and map assignments are student-centered activities that are designed to enhance students' logical/mathematical intelligence, but they also delve into Visual/Spatial intelligence. Students must collect and organize information for both the timeline and the map therefore using their logical/mathematical intelligence. In creating these items, students must think visually as well. By incorporating dance into one lesson, Ms. Cunningham is able to promote awareness of her students' bodily-kinesthetic intelligence. By showing videos of popular dances from the time period, or inviting an expert from the community to talk about the social aspects of dance, Ms. Cunningham might incorporate a teacher-centered activity. Having students learn and perform dances is a student-centered way of teaching through bodily-kinesthetic intelligence. The short plays that students prepare involve bodily-kinesthetic intelligence, as well as interpersonal and verbal/linguistic intelligences. Class discussions provide an opportunity for students to exercise both areas of their personal intelligences, as well as to reinforce the subject matter.

Planning and Implementing Student-Centered Lessons

This type of lesson revolves around student created materials. The types of activities and assignments that support student-centered lessons can be easily designed in concert with many of the inquiry-based models. One of the most important aspects of student-centered lessons is allowing students to make choices (Figure 9.2). Teachers should encourage students to exercise their weaker intelligences, but allow them to explore their stronger areas as well. In Ms. Cunningham's class, the student named James is very strong in visual/spatial intelligence and always leans towards this type of project. The teacher encourages James to participate in other activities, but when it is obvious that his interest lies in working on the mural, Ms. Cunningham allows him to work on the project. Listed below are steps to implement a student-centered lesson or unit:

- Carefully identify instructional goals, objectives, and instructional outcomes.
- Consider activities that you can integrate into the lesson or unit that teach to the different intelligences. Teachers need not incorporate all nine intelligences into one lesson.
- When gathering resources and materials, consider those which will allow students to explore their multiple intelligences.
- Specify a timeframe for the lesson or unit.
- Allow for considerable element of student choice when designing activities and tasks for the intelligences.
- Design activities that are student-centered, using inquiry-based models of instruction.
- Provide a rubric for student activities. You might consider having students help create rubrics.
- Incorporate assessment into the learning process.

In an effort to maximize students' interest in both the subject matter and their own learning proclivities, teachers may wish to teach their students a little bit about Multiple Intelligences. Teachers can brief the class about each type of intelligence and then follow up with a self-assessment for each student. In this way, students will be able to capitalize on their strengths and work on their weaker areas. Disney's Tapping Into Multiple Intelligences website includes a self-assessment.

Planning and Implementing a Teacher-Centered Lesson

Structured, teacher-centered activities provide an opportunity for teachers to introduce material and establish prior knowledge and student conceptions. Teachers may lecture students, show informational videos and posters, perform drills, pose problem-solving exercises, arrange museum visits, and plan outings to concerts. There are all examples of teacher-centered activities. All of these activities integrate the Multiple Intelligences into the subject matter being taught. Teacher-centered lessons should be limited to a few activities that provide a foundation for students to later complete more exploratory tasks in which they can demonstrate understanding of the material. A teacher may choose to start an instructional unit or lesson with teacher-centered activities and then follow up with subsequent student-centered lessons (Figure 9.2).

Figure 9.2 Teacher-Centered and Student-Centered Classroom Activities

Intelligence	Teacher-Centered	Student-Centered
 Verbal/Linguistic	• Present content verbally • Ask questions aloud and look for student feedback • Interviews	• Student presents material • Students read content and prepare a presentation for his/her classmates • Students debate over an issue
 Logical/Mathematical	• Provide brain teasers or challenging questions to begin lessons. • Make logical connections between the subject matter and authentic situations to answer the question "why?"	• Students categorize information in logical sequences for organization • Students create graphs or charts to explain written info • Students participate in webquests associated with the content
 Bodily/Kinesthetic	• Use props during lecture • Provide tangible items pertaining to content for students to examine • Review using sports related examples (throw a ball to someone to answer a question)	• Students use computers to research subject matter • Students create props of their own explaining subject matter (shadow boxes, mobiles, etc...) • Students create review games
 Visual/Spatial	• When presenting the information, use visuals to explain content • PowerPoint slides, charts, graphs, cartoons, videos, overheads, smartboards	• Have students work individually or in groups to create visuals pertaining to the information • Posters, timelines, models, PowerPoint slides, maps, illustrations, charts, concept mapping
 Musical	• Play music in the classroom during reflection periods • Show examples or create musical rhythms for students to remember things	• Create a song or melody with the content embedded for memory • Use well known songs to memorize formulas, skills, or test content
 Interpersonal	• Be aware of body language and facial expressions • Offer assistance whenever needed • Encourage classroom discussion	• Encourage collaboration among peers • Group work strengthens interpersonal connections • Peer feedback and peer tutoring • Students present to the class • Encourage group editing
 Intrapersonal	• Encourage journaling as a positive outlet for expression • Introduce web logging (blogs) • Make individual questions welcome • Create a positive environment	• Journaling • Individual research on content • Students create personal portfolios of work
 Naturalistic	• Take students outside to enjoy nature while in learning process (lecture) • Compare authentic subject matter to natural occurrences • Relate subject matter to stages that occur in nature (plants, weather, etc.)	• Students organize thoughts using natural cycles • Students make relationships among content and the natural environment (how has nature had an impact?) • Students perform community service

Figure 9.2. The figure above was added by Brandy Bellamy and Camille Baker (2005).

Teachers may follow these steps when designing and implementing a teacher-centered lesson:

- Identify instructional goals and objectives.
- Consider teacher-centered activities that teach to students' Multiple Intelligences. In a teacher-centered lesson, limit the number of activities to two or three.
- Consider what resources and materials you will need to implement the lesson. For example, will you need to schedule a museum visit or to consult the Media Specialist for videos or other media?
- Specify a timeframe for the lesson or unit.
- Provide an opportunity for reflection by students.
- Provide a rubric to scaffold student activities.
- Integrate assessment into the learning process.

Assessment is one of the biggest challenges in incorporating Multiple Intelligences in the classroom. Ms. Cunningham's students are given the option of working on several mini-projects during the course of the Civil Rights unit. At the end of the unit, their performance is assessed through a portfolio that represents their work on these projects. It is very important for assessment to be integrated into the learning process. Assessment should give students the opportunity to demonstrate their understanding of the subject matter. One of the main goals of acknowledging and using Multiple Intelligences in the classroom is to increase student understanding of material by allowing them to demonstrate the ways in which they understand the material. Teachers need to make their expectations clear, and may do so in the form of a detailed rubric.

Benefits of Using Multiple Intelligences Theory in the Classroom

Using Multiple Intelligences theory in the classroom has many benefits:

- As a teacher and learner you realize that there are many ways to be "smart."
- All forms of intelligence are equally celebrated.
- By having students create work that is displayed to parents and other members of the community, your school could see more parent and community involvement.
- A sense of increased self-worth may be seen as students build on their strengths and work towards becoming an expert in certain areas.
- Students may develop strong problem-solving skills that they can use in real life situations.

Criticisms of Theory of Multiple Intelligences

One of the most widely held criticisms is that there is little, if any, empirical evidence to support it. Most of these critics are of the psychometric testing community (Armstrong, 2009). They argue that rather than eight unique and autonomous intelligences, there is really only one intelligence that you can test for, the “Spearman *g*-factor,” or one’s general intelligence. According to Linda Gottfredson (2004) of the University of Delaware, "The *g* factor was discovered by the first mental testers, who found that people who scored well on one type of mental test tended to score well on all of them. This common factor, *g*, can be distilled from scores on any broad set of cognitive tests, and it takes the same form among individuals of every age, race, sex, and nation yet studied” (p. 35). As a matter of fact, three scientists put together a comprehensive, 16-part test, 2-test relating to each of the 8 intelligences, and found that people generally scored about the same on each of them. Gardner counters this by saying that he agrees that there is a *g*-factor, but sees the *g*-factor as a mere manifestation of the mathematical logical intelligence. Furthermore, MI Theory, Gardner argues, is solidly grounded in research showing the existence of savants and how brain damage can affect an isolated skill set, or intelligence.

A second common criticism is that MI Theory is a pc mind frame, a way to simply tell “dumb” children’s parents that there is hope for their kid. They argue that it is simply used to make everyone feel good about him or herself. However, there is nothing in MI Theory stating that anyone has to be good at a particular intelligence, let alone all of them. There are humans who for whatever reason are not capable or learning or understanding or being intelligent in the way that other people are. MI does not deny their existence; it only gives psychology and education a different lens to view intelligence and smarts to get a fuller picture of each person's abilities. Below are some quotes from MI critics:

> To date there have been no published studies that offer evidence of the validity of the multiple intelligences. In 1994, Sternberg (1994) reported finding no empirical studies. In 2000, Allix (2000) reported finding no empirical validating studies, and at that time Gardner and Connell (2000) conceded that there was "little hard evidence for MI theory" (p. 292). In 2004, Sternberg and Grigerenko (2004) stated that there were no validating studies for multiple intelligences, and in 2004, Gardner (2004) asserted that he would be "delighted were such evidence to accrue" (p. 214), and he admitted that "MI theory has few enthusiasts among psychometricians or others of a traditional psychological background" because they require "psychometric or experimental evidence that allows one to prove the existence of the several intelligences" (p. 214). (Waterhouse, 2006, p. 208)

> The human brain is unlikely to function via Gardner's multiple intelligences. Taken together the evidence for the intercorrelations of subskills of IQ measures, the evidence for a shared set of genes associated with mathematics, reading, and *g*, and the evidence for shared and overlapping "what is it?" and "where is it?" neural processing pathways, and shared neural pathways for language, music, motor skills, and emotions suggest that it is unlikely that that each of Gardner's intelligences could operate "via a different set of neural mechanisms" (Gardner, 1999, p. 99). Equally important, the evidence for the "what is it?" and "where is it?" processing pathways, for Kahneman's two decision-making systems, and for adapted cognition modules suggests that these cognitive brain specializations have evolved to address very specific problems in our environment. Because Gardner claimed that that the intelligences are innate potentialities related to a general content area, MI theory lacks a rationale for the phylogenetic emergence of the intelligences. (Waterhouse, 2006, p. 213)

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CHAPER 10

Bloom’s Taxonomy

INTRODUCTION

Benjamin Samuel Bloom (1913-1999) was born on February 21, 1913 in Lansford, Pennsylvania. Bloom received both a bachelor’s and master’s degree from Pennsylvania State University in 1935. He went on to earn a doctorate’s degree from the University of Chicago in 1942, where he acted as first a staff member of the Board of Examinations (1940-1943), then a University Examiner (1943-1959), as well as an instructor in the Department of Education, beginning in 1944.

Bloom’s most recognized and highly regarded initial work spawned from his collaboration with his mentor and fellow examiner Ralph W. Tyler and came to be known as Bloom’s Taxonomy. These ideas are highlighted in his third publication, *Taxonomy of Educational Objectives: Handbook I, The Cognitive Domain.* He later wrote a second handbook for the taxonomy in 1964, which focuses on the affective domain. Bloom’s research in early childhood education, published in his 1964 *Stability and Change in Human Characteristics* sparked widespread interest in children and learning and eventually and directly led to the formation of the Head Start program in America. Aside from his scholarly contributions to the field of education, Benjamin Bloom was an international activist and educational consultant. In 1957, he traveled to India to conduct workshops on evaluation, which led to great changes in the Indian educational system. He helped create the International Association for the Evaluation of Educational Achievement, the IEA, and organized the International Seminar for Advanced Training in Curriculum Development. He developed the Measurement, Evaluation, and Statistical Analysis (MESA) program at the University of Chicago. Benjamin Bloom died in his home in Chicago on September 13, 1999.

REQUIRED READING

Bloom's Taxonomy was created in 1956 under the leadership of educational psychologist Dr. Benjamin Bloom in order to promote higher forms of thinking in education, such as analyzing and evaluating concepts, processes, procedures, and principles, rather than just remembering facts (rote learning). It is most often used when designing lesson objectives, learning goals, and instructional activities. Bloom et al. (1956) identified three *domains* of educational activities or learning:

- Cognitive Domain: mental skills (*knowledge*)
- Psychomotor Domain: manual or physical skills (*skills*)
- Affective Domain: growth in feelings or emotional areas (*attitude*)

Since the work was produced by higher education, the words tend to be a little bigger than what would be normally used. Domains may be thought of as categories. Instructional designers, trainers, and educators often refer to these three categories as KSA (Knowledge [cognitive], Skills [psychomotor], and Attitudes [affective]). This taxonomy of learning behaviors may be thought of as “the goals of the learning process.” That is, after a learning episode, the learner should have acquired a new skill, knowledge, and/or attitude.

While Bloom et al. (1956) produced an elaborate compilation for the cognitive and affective domains, they omitted the psychomotor domain. Their explanation for this oversight was that they have little experience in teaching manual skills within the college level. However, there have been at least three psychomotor models created by other researchers. Their compilation divides the three domains into subdivisions, starting from the simplest cognitive process or behavior to the most complex. The divisions outlined are not absolutes and there are other systems or hierarchies that have been devised, such as the Structure of Observed Learning Outcome (SOLO). However, Bloom's Taxonomy is easily understood and is probably the most widely applied one in use today.

The Cognitive Domain (Clarka, 2015a)

The cognitive domain involves knowledge and the development of intellectual skills (Bloom, 1956). This includes the recall or recognition of specific facts, procedural patterns, and concepts that serve in the development of intellectual abilities and skills. There are six major levels of cognitive processes, starting from the simplest to the most complex: Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation. The levels can be thought of as degrees of difficulties. That is, the first ones must normally be mastered before the next one can take place.

Bloom's Revised Taxonomy

Lorin Anderson, a former student of Bloom, and David Krathwohl revisited the cognitive domain in the mid-nineties and made some changes, with perhaps the three most prominent ones being:

- Changing the names in the six levels from noun to verb forms;
- Rearranging them as shown in Figure 10.1 and Figure 10.2; and
- Creating a cognitive processes and knowledge dimension matrix (Anderson et al., 2000; Figure 10.5, Figure 10.6, & Figure 10.7).

Figure 10.1 Revised Cognitive Domain

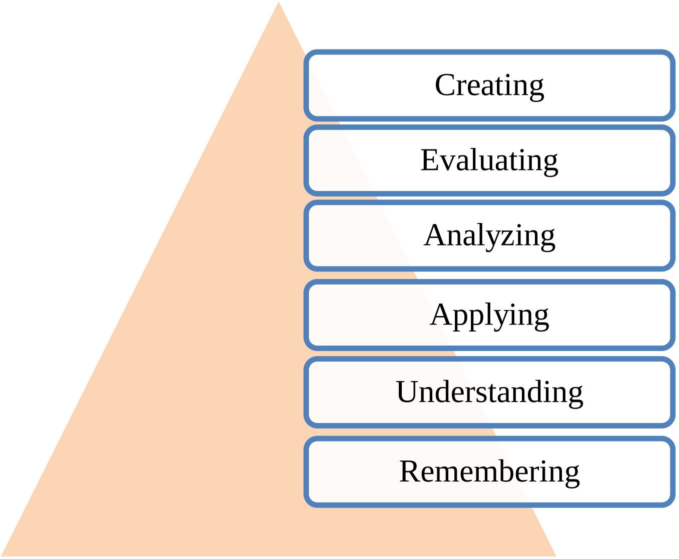

Creating
Evaluating
Analyzing
Applying
Understanding
Remembering

Figure 10.2 Original and Revised Cognitive Domain

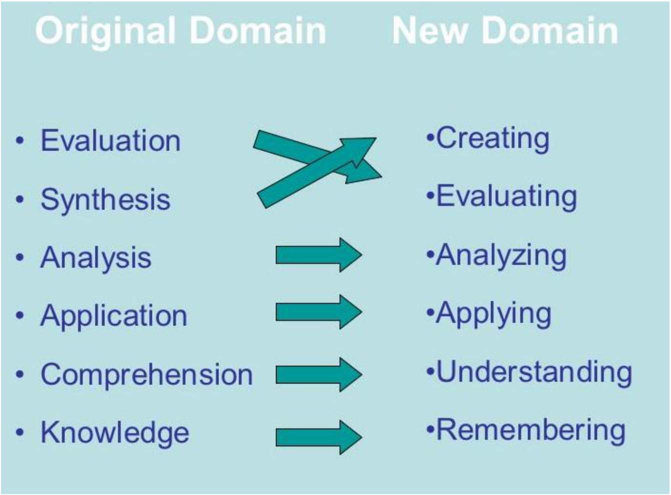

Original Domain
New Domain
• Evaluation
• Synthesis
• Analysis
• Application
• Comprehension
• Knowledge
•Creating
•Evaluating
•Analyzing
•Applying
•Understanding
•Remembering

Figure 10.2. The chart shown above compares the original taxonomy with the revised one.

This new taxonomy reflects a more active form of thinking and is perhaps more accurate. The new version of Bloom's Taxonomy with examples and keywords is shown in Figure 10.3.

Figure 10.3 Levels of Original and Revised Cognitive Domain with Examples and Key Words

Old (Original) Cognitive Domain		**New (Revised) Cognitive Domain**	
Levels	**Examples, Key Words (Verbs), and Learning Activities and Technologies**	**Levels**	**Examples, Key Words (Verbs), and Learning Activities and Technologies**
Knowledge: Recall data or information.	**Examples**: Recite a policy. Quote prices from memory to a customer. Know the safety rules. Define a term. **Key Words**: arranges, defines, describes, identifies, knows, labels, lists, matches, names, outlines, recalls, recognizes, reproduces, selects, states **Technologies**: bookmarking, flash cards, Internet search, reading	**Remembering**: Recall or retrieve previous learned information.	**Examples**: Recite a policy. Quote prices from memory to a customer. Recite the safety rules. **Key Words**: defines, describes, identifies, knows, labels, lists, matches, names, outlines, recalls, recognizes, reproduces, selects, states **Technologies**: book marking, flash cards, rote learning based on repetition, reading
Comprehension: Understand the meaning, translation, interpolation, and interpretation of instructions and problems. State a problem in one's own words.	**Examples**: Rewrites the principles of test writing. Explain in one's own words the steps for performing a complex task. Translates an equation into a computer spreadsheet. **Key Words**: comprehends, converts, diagrams, defends, distinguishes, estimates, explains, extends, generalizes, gives an example, infers, interprets, paraphrases, predicts, rewrites, summarizes, translates **Technologies**: create an analogy, participating in cooperative learning, taking notes, story telling	**Understanding**: Comprehending the meaning, translation, interpolation, and interpretation of instructions and problems. State a problem in one's own words.	**Examples**: Rewrite the principles of test writing. Explain in one's own words the steps for performing a complex task. Translate an equation into a computer spreadsheet. **Key Words**: comprehends, converts, defends, distinguishes, estimates, explains, extends, generalizes, gives an example, infers, interprets, paraphrases, predicts, rewrites, summarizes, translates **Technologies**: create an analogy, participating in cooperative learning, taking notes, storytelling, Internet search
Application: Use a concept in a new situation or unprompted use of an abstraction. Apply what was learned in the classroom into novel situations in the work place.	**Examples**: Use a manual to calculate an employee's vacation time. Apply laws of statistics to evaluate the reliability of a written test. **Key Words**: applies, changes, computes, constructs, demonstrates, discovers, manipulates, modifies, operates, predicts, prepares, produces, relates, shows, solves, uses **Technologies**: collaborative learning, create a process, blog, practice	**Applying**: Use a concept in a new situation or unprompted use of an abstraction. Apply what was learned in the classroom into novel situations in the work place.	**Examples**: Use a manual to calculate an employee's vacation time. Apply laws of statistics to evaluate the reliability of a written test. **Key Words**: applies, changes, computes, constructs, demonstrates, discovers, manipulates, modifies, operates, predicts, prepares, produces, relates, shows, solves, uses **Technologies**: collaborative learning, create a process, blog, practice

Analysis: Separate material or concepts into component parts so that its organizational structure may be understood. Distinguish between facts and inferences.	**Examples**: Troubleshoot a piece of equipment by using logical deduction. Recognize logical fallacies in reasoning. Gathers information from a department and selects the required tasks for training. **Key Words**: analyzes, breaks down, compares, contrasts, diagrams, deconstructs, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, relates, selects, separates **Technologies**: fishbowls, debating, questioning what happened, run a test	**Analyzing**: Separate material or concepts into component parts so that its organizational structure may be understood. Distinguish between facts and inferences.	**Examples**: Troubleshoot a piece of equipment by using logical deduction. Recognize logical fallacies in reasoning. Gathers information from a department and selects the required tasks for training. **Key Words**: analyzes, breaks down, compares, contrasts, diagrams, deconstructs, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, relates, selects, separates **Technologies**: fishbowls, debating, questioning what happened, run a test
Synthesis: Build a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure.	**Examples**: Write a company operations or process manual. Design a machine to perform a specific task. Integrates training from several sources to solve a problem. Revises and process to improve the outcome. **Key Words**: categorizes, combines, compiles, composes, creates, devises, designs, explains, generates, modifies, organizes, plans, rearranges, reconstructs, relates, reorganizes, revises, rewrites, summarizes, tells, writes **Technologies**: essay, networking	**Evaluating**: Make judgments about the value of ideas or materials.	**Examples**: Select the most effective solution. Hire the most qualified candidate. Explain and justify a new budget. **Key Words**: appraises, compares, concludes, contrasts, criticizes, critiques, defends, describes, discriminates, evaluates, explains, interprets, justifies, relates, summarizes, supports **Technologies**: survey, blogging
Evaluation: Make judgments about the value of ideas or materials.	**Examples**: Select the most effective solution. Hire the most qualified candidate. Explain and justify a new budget. **Key Words**: appraises, compares, concludes, contrasts, criticizes, critiques, defends, describes, discriminates, evaluates, explains, interprets, justifies, relates, summarizes, supports **Technologies**: survey, blogging	**Creating**: Build a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure.	**Examples**: Write a company operations or process manual. Design a machine to perform a specific task. Integrate training from several sources to solve a problem. Revise and process to improve the outcome. **Key Words**: categorizes, combines, compiles, composes, creates, devises, designs, explains, generates, modifies, organizes, plans, rearranges, reconstructs, relates, reorganizes, revises, rewrites, summarizes, tells, writes **Technologies**: create a new model, write an essay, network with others

Cognitive Processes and Levels of Knowledge Matrix

Bloom's Revised Taxonomy not only improved the usability of it by using action words, but added a Cognitive Process Dimension and Knowledge Dimension Matrix (Figure 10.4). While Bloom's original cognitive taxonomy did mention three levels of knowledge or products that could be processed, they were not discussed very much and remained one-dimensional:

- **Factual**: The basic elements students must know to be acquainted with a discipline or solve problems.
- **Conceptual**: The interrelationships among the basic elements within a larger structure that enable them to function together.
- **Procedural:** How to do something, methods of inquiry, and criteria for using skills, algorithms, techniques, and methods.

In Krathwohl and Anderson's (2001) revised version, the authors combine the cognitive processes with the above three levels of knowledge to form a matrix. In addition, they added another level of knowledge-metacognition:

- **Metacognitive**: Knowledge of cognition in general, as well as awareness and knowledge of one's own cognition.

When the cognitive and knowledge dimensions are arranged in a matrix, as shown below, it makes a nice performance aid for creating performance objectives (Figure 10.4).

Figure 10.4 Cognitive Process Dimension and Knowledge Dimension Matrix

	The Cognitive Process Dimension					
The Knowledge Dimension	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual						
Conceptual						
Procedural						
Metacognitive						

However, others have also identified five contents or artifacts (Clark & Chopeta, 2004; Clark & Mayer, 2007) for the knowledge dimension (Figure 10.5):

- **Facts**: Specific and unique data or instance.
- **Concepts**: A class of items, words, or ideas that are known by a common name, includes multiple specific examples, shares common features. There are two types of concepts: concrete and abstract.
- **Processes**: A flow of events or activities that describe how things work rather than how to do things. There are normally two types: business processes that describe work flows and technical processes that describe how things work in equipment or nature. They may be thought of as the big picture, of how something works.
- **Procedures**: A series of step-by-step actions and decisions that result in the achievement of a task. There are two types of actions: linear and branched.
- **Principles**: Guidelines, rules, and parameters that govern. It includes not only what should be done, but also what should not be done. Principles allow one to make predictions and draw implications. Given an effect, one can infer the cause of a phenomena. Principles are the basic building blocks of causal models or theoretical models (theories).

Thus, the new Cognitive Process Dimension and Knowledge Dimension Matrix would look as shown in Figure 10.5.

Figure 10.5 Revised Cognitive Process Dimension and Knowledge Dimension Matrix

	The Cognitive Process Dimension					
The Knowledge Dimension	Remember	Understand	Apply	Analyze	Evaluate	Create
Facts						
Concepts						
Processes						
Procedures						
Principles						
Metacognitive						

An example matrix that has been filled in will look like Figure 10.6:

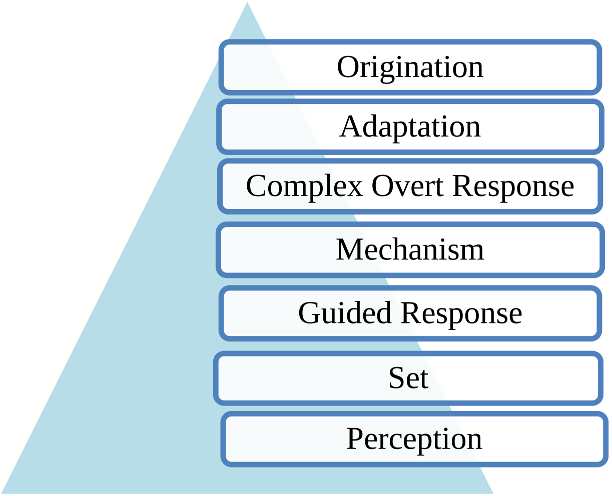
Figure 10.6 Filled in Cognitive Process Dimension and Knowledge Dimension Matrix

	The Cognitive Process Dimension					
The Knowledge Dimension	Remember	Understand	Apply	Analyze	Evaluate	Create
Facts	list	paraphrase	classify	outline	rank	categorize
Concepts	recall	explain	show	contrast	criticize	modify
Processes	outline	estimate	produce	diagram	defend	design
Procedures	reproduce	give an example	relate	identify	critique	plan
Principles	state	convert	solve	differentiate	conclude	revise
Metacognitive	proper use	interpret	discover	infer	predict	actualize

The Psychomotor Domain (Clark, 2015b)

The psychomotor domain (Simpson, 1972) (Figure 10.7) includes physical movement, coordination, and use of the motor-skill areas. Development of these skills requires practice and is measured in terms of speed, precision, distance, procedures, or techniques in execution. Thus, psychomotor skills rage from manual tasks, such as digging a ditch or washing a car, to more complex tasks, such as operating a complex piece of machinery or dancing.

Figure 10.7 Levels of Psychomotor Domain



The seven major levels (Figure 10.8) are listed from the simplest behavior to the most complex (Simpson, 1972):

Figure 10.8 Levels of Psychomotor Domain with Examples and Key Words by Simpson (1972)

Levels	Examples and Key Words (Verbs)
Perception (awareness): The ability to use sensory cues to guide motor activity. This ranges from sensory stimulation, through cue selection, to translation.	**Examples**: Detect non-verbal communication cues. Estimate where a ball will land after it is thrown and then moving to the correct location to catch the ball. Adjust heat of stove to correct temperature by smell and taste of food. Adjust the height of the forks on a forklift by comparing where the forks are in relation to the pallet. **Key Words**: chooses, describes, detects, differentiates, distinguishes, identifies, isolates, relates, selects
Set: Readiness to act. It includes mental, physical, and emotional sets. These three sets are dispositions that predetermine a person's response to different situations (sometimes called mindsets).	**Examples**: Know and act upon a sequence of steps in a manufacturing process. Recognize one's abilities and limitations. Show desire to learn a new process (motivation). NOTE: This subdivision of Psychomotor is closely related with the “Responding to phenomena” subdivision of the Affective domain. **Key Words**: begins, displays, explains, moves, proceeds, reacts, shows, states, volunteers
Guided Response: The early stages in learning a complex skill that include imitation, trial, and error. Adequacy of performance is achieved by practicing.	**Examples**: Perform a mathematical equation as demonstrated. Follow instructions to build a model. Respond hand-signals of instructor while learning to operate a forklift. **Key Words**: copies, traces, follows, reacts, reproduces, responds
Mechanism (basic proficiency): This is the intermediate stage in learning a complex skill. Learned responses have become habitual and the movements can be performed with some confidence and proficiency.	**Examples**: Use a personal computer. Repair a leaking faucet. Drive a car. **Key Words**: assembles, calibrates, constructs, dismantles, displays, fastens, fixes, grinds, heats, manipulates, measures, mends, mixes, organizes, sketches
Complex Overt Response (Expert): The skillful performance of motor acts that involve complex movement patterns. Proficiency is indicated by a quick, accurate, and highly coordinated performance, requiring a minimum of energy. This category includes performing without hesitation, and automatic performance. For example, players are often utter sounds of satisfaction as soon as they hit a tennis ball or throw a football, because they can tell by the feel of the act what the result will produce.	**Examples**: Maneuver a car into a tight parallel parking spot. Operate a computer quickly and accurately. Display competence while playing the piano. **Key Words**: assembles, builds, calibrates, constructs, dismantles, displays, fastens, fixes, grinds, heats, manipulates, measures, mends, mixes, organizes, sketches NOTE: The Key Words are the same as Mechanism, but will have adverbs or adjectives that indicate that the performance is quicker, better, more accurate, etc.
Adaptation: Skills are well-developed and the individual can modify movement patterns to fit special requirements.	**Examples**: Respond effectively to unexpected experiences. Modify instruction to meet the needs of the learners. Perform a task with a machine, which was not originally intended to do (machine is not damaged and there is no danger in performing the new task). **Key Words**: adapts, alters, changes, rearranges, reorganizes, revises, varies
Origination: The creating of new movement patterns to fit a particular situation or specific problem. Learning outcomes emphasize creativity based upon highly developed skills.	**Examples**: Construct a new theory. Develop a new and comprehensive training programming. Create a new gymnastic routine. **Key Words**: arranges, builds, combines, composes, constructs, creates, designs, initiate, makes, originates

Other Psychomotor Domain Taxonomies

Bloom et al. (1956) did not produce a compilation for the psychomotor domain model, but others have. The one discussed above is by Simpson (1972) (Figure 10.8). There are two other popular versions by Dave (1970) (Figure 10.9) and Harrow (1972) (Figure 10.10):

Figure 10.9 Levels of Psychomotor Domain with Examples and Key Words by Dave (1970)

Levels	Examples and Key Words (Verbs)
Imitation: Observing and patterning behavior after someone else. Performance may be of low quality.	**Examples**: Copying a work of art. Performing a skill while observing a demonstrator. **Key Words**: copy, follow, mimic, repeat, replicate, reproduce, trace
Manipulation: Being able to perform certain actions by memory or following instructions.	**Examples**: Being able to perform a skill on one's own after taking lessons or reading about it. Following instructions to build a model. **Key Words**: act, build, execute, perform
Precision: Refining, becoming more exact. Performing a skill within a high degree of precision.	**Examples**: Working and reworking something, so it will be "just right." Performing a skill or task without assistance. Demonstrating a task to a beginner. **Key Words**: calibrate, demonstrate, master, perfection
Articulation: Coordinating and adapting a series of actions to achieve harmony and internal consistency.	**Examples**: Combining a series of skills to produce a video that involves music, drama, color, sound, etc. Combining a series of skills or activities to meet a novel requirement. **Key Words**: adapt, constructs, combine, creates, customize, modifies, formulate
Naturalization: Mastering a high level of performance until it become second-nature or natural, without needing to think much about it.	**Examples**: Maneuvering a car into a tight parallel parking spot. Operating a computer quickly and accurately. Displaying competence while playing the piano. Michael Jordan playing basketball or Nancy Lopez hitting a golf ball. **Key Words**: create, design, develop, invent, manage, naturally

Figure 10.10 Levels of Psychomotor Domain with Examples and Key Words by Harrow (1972)

Levels	Examples and Key Words (Verbs)
Reflex Movements: Reactions that are not learned, such as an involuntary reaction.	**Examples**: instinctive response **Key Words**: react, respond
Fundamental Movements: Basic movements such as walking, or grasping.	**Examples**: performing a simple task **Key Words**: grasp an object, throw a ball, walk
Perceptual Abilities: Response to stimuli such as visual, auditory, kinesthetic, or tactile discrimination.	**Examples**: tracking a moving object, recognizing a pattern **Key Words**: catch a ball, draw or write
Physical Abilities (fitness): Stamina that must be developed for further development such as strength and agility.	**Examples**: gaining strength, running a marathon **Key Words**: agility, endurance, strength
Skilled Movements: Advanced learned movements as one would find in sports or acting.	**Examples**: Using an advanced series of integrated movements, performing a role in a stage play or play in a set of series in a sports game. **Key Words**: adapt, constructs, creates, modifies
Non-discursive Communication: Effective use body language, such as gestures and facial expressions.	**Examples**: Expressing one's self by using movements and gestures **Key Words**: arrange, compose, interpretation

The Affective Domain (Clark, 2015c)

The affective domain is one of three domains in Bloom's Taxonomy, with the other two being the cognitive and psychomotor (Bloom, et al., 1956). The affective domain (Krathwohl, Bloom, & Masia, 1973) includes the manner in which we deal with things emotionally, such as feelings, values, appreciation, enthusiasms, motivations, and attitudes. The five major levels are listed from the simplest behavior to the most complex (Figure 10.11 & Figure 10.12):

Figure 10.11 Levels of Affective Domain

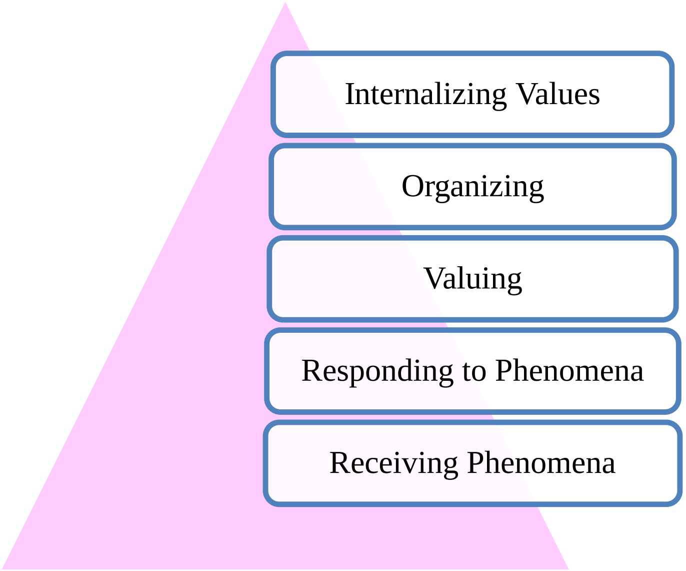


Figure 10.12 Levels of Affective Domain with Examples and Key Words

Levels	Examples and Key Words (Verbs)
Receiving Phenomena: Awareness, willingness to hear, selected attention.	**Examples**: Listen to others with respect. Listen for and remember the name of newly introduced people. **Key Words**: acknowledges, asks, follows, gives, listens, understands
Responding to Phenomena: Active participation on the part of the learners. Attend and react to a particular phenomenon. Learning outcomes may emphasize compliance in responding, willingness to respond, or satisfaction in responding (motivation).	**Examples**: Participate in class discussions. Give a presentation. Question new ideals, concepts, models, etc. in order to fully understand them. Know the safety rules and practice them. **Key Words**: answers, assists, aids, complies, conforms, discusses, greets, helps, labels, performs, presents, tells
Valuing: The worth or value a person attaches to a particular object, phenomenon, or behavior. This ranges from simple acceptance to the more complex state of commitment. Valuing is based on the internalization of a set of specified values, while clues to these values are expressed in the learner's overt behavior and are often identifiable.	**Examples**: Demonstrate belief in the democratic process. Is sensitive towards individual and cultural differences (value diversity). Show the ability to solve problems. Propose a plan to social improvement and follows through with commitment. Inform management on matters that one feels strongly about. **Key Words**: appreciates, cherishes, treasures, demonstrates, initiates, invites, joins, justifies, proposes, respects, shares
Organizing: The organizing of values into priorities by contrasting different values, resolving conflicts between them, and creating a unique value system. The emphasis is on comparing, relating, and synthesizing values.	**Examples**: Recognize the need for balance between freedom and responsible behavior. Explain the role of systematic planning in solving problems. Accept professional ethical standards. Create a life plan in harmony with abilities, interests, and beliefs. Prioritize time effectively to meet the needs of the organization, family, and self. **Key Words**: compares, relates, synthesizes

Internalizing Values (characterization): Having a value system that controls their behavior. The behavior is pervasive, consistent, predictable, and most important characteristic of the learner. Instructional objectives are concerned with the student's general patterns of adjustment (personal, social, emotional).	**Examples**: Show self-reliance when working independently. Cooperate in group activities (display teamwork). Use an objective approach in problem solving. Display a professional commitment to ethical practice on a daily basis. Revise judgments and change behavior in light of new evidence. Value people for what they are, not how they look. **Key Words**: acts, discriminates, displays, influences, modifies, performs, qualifies, questions, revises, serves, solves, verifies

Educational Implications (Clark, 2015d)

Learning or instructional strategies determine the approach for achieving the learning objectives and are included in the pre-instructional activities, information presentation, learner activities, testing, and follow-through. The strategies are usually tied to the needs and interests of students to enhance learning and are based on many types of learning styles (Ekwensi, Moranski, &Townsend-Sweet, 2006). Thus the learning objectives point you towards the instructional strategies, while the instructional strategies will point you to the medium that will deliver or assist the delivery of the instruction, such as elearning, self-study, classroom learning and instructional activities, etc.

The *Instructional Strategy Selection Chart* (Figure 10.13) shown below is a general guideline for selecting the teaching and learning strategy. It is based on Bloom's Taxonomy (Learning Domains). The matrix generally runs from the passive learning methods (top rows) to the more active participation methods (bottom rows). Bloom's Taxonomy (the right three columns) runs from top to bottom, with the lower level behaviors being on top and the higher behaviors being on the bottom. That is, there is a direct correlation in learning:

- Lower levels of performance can normally be taught using the more passive learning methods.
- Higher levels of performance usually require some sort of action or involvement by the learners.

Figure 10.13 Instructional Strategy Selection Chart

Instructional Strategy	**Cognitive Domain** (Bloom, 1956)	**Psychomotor Domain** (Simpson, 1972)	**Affective Domain** (Krathwohl, Bloom, & Masia, 1973)
Lecture, reading, audio/visual, demonstration, or guided observations, question and answer period.	1. Knowledge (Remembering)	1. Perception 2. Set	1. Receiving Phenomena
Discussions, multimedia, Socratic didactic method, reflection. Activities such as surveys, role playing, case studies, fishbowls, etc.	2. Comprehension (Understanding) 3. Application (Applying)	3. Guided Response 4. Mechanism	2. Responding to Phenomena
Practice by doing (some direction or coaching is required), to simulated learning settings.	4. Analysis (Analyzing)	5. Complex Response	3. Valuing
Use in real situations. May use several high-level activities.	5. Synthesis (Evaluating)	6. Adaptation	4. Organizing Values into Priorities
Normally developed on own (informal learning) through self-study or learning through mistakes, but mentoring and coaching can speed the process.	6. Evaluation (Creating)	7. Origination	5. Internalizing Values

Figure 10.13. The chart above does not cover all possibilities, but most activities should fit in. For example, self-study could fall under reading, audio visual, and/or activities, depending upon the type of learning environment and activities teachers design.

Criticisms of Bloom’s Taxonomy

As Morshead (1965) pointed out on the publication of the second volume, the classification was not a properly constructed taxonomy, as it lacked a systemic rationale of construction. This was subsequently acknowledged in the discussion of the original taxonomy in its 2000 revision *(*Anderson & Krathwohl, 2001), and the taxonomy was reestablished on more systematic lines. It is generally considered that the role the taxonomy played in systematizing a field was more important than any perceived lack of rigor in its construction.

Some critiques of the taxonomy's cognitive domain admit the existence of six categories of cognitive domain but question the existence of a sequential, hierarchical link *(*Paul, 1993). Often, educators view the taxonomy as a hierarchy and may mistakenly dismiss the lowest levels as unworthy of teaching *(*Flannery, 2007; Lawler, 2016). The learning of the lower levels enables the building of skills in the higher levels of the taxonomy, and in some fields, the most important skills are in the lower levels, such as identification of species of plants and animals in the field of natural history (Flannery, 2007; Lawler, 2016). Instructional scaffolding of higher-level skills from lower-level skills is an application of Vygotskian constructivism *(*Keene, Colvin, & Sissons, 2010; Vygotsky, 1978).

Some consider the three lowest levels as hierarchically ordered, but the three higher levels as parallel *(*Anderson & Krathwohl, 2001). Others say that it is sometimes better to move to Application before introducing concepts (Tomei, 2010, p.66). The idea is to create a learning environment where the real world context comes first and the theory second to promote the student's grasp of the phenomenon, concept or event. This thinking would seem to relate to the method of problem-based learning.

Furthermore, the distinction between the categories can be seen as artificial since any given cognitive task may entail a number of processes. It could even be argued that any attempt to nicely categorize cognitive processes into clean, cut-and-dried classifications undermines the holistic, highly connective and interrelated nature of cognition *(*Fadul, 2009). This is a criticism that can be directed at taxonomies of mental processes in general.

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Physiological
Safety
Love/Belonging
Esteem
Self-Actualization

CHAPTER 11

Theory of Human Motivation

INTRODUCTION

Abraham Harold Maslow (1908-1970) was born on April 1, 1908, in Brooklyn, New York. His parents were Jewish immigrants from Russia who were rather uneducated. Maslow was the sole Jewish boy in his neighborhood; therefore, he was unhappy and lonesome throughout the majority of his childhood. Maslow also had problems within his home. His father continually degraded him and pushed him to excel in areas that were of no interest to him. His mother also treated him poorly. Because of this Maslow wanted no interaction with his parents. Maslow perceived his mother as being entirely insensitive and unloving.

After a difficulty childhood, Maslow was able to obtain a Ph.D. from the University of Wisconsin in 1934. After he received his Ph.D. in 1934, he continued to teach at the University of Wisconsin. Maslow theorized that humans have several inborn needs that were the basis for his theory of motivation on the hierarchy of needs. Furthermore, he believed that the needs are ranked in terms of a hierarchy. Nonhumans can possess the lower, more basic needs also, but only humans may possess the higher needs. First, physiological needs are related to survival. These necessities include food, water, elimination, sex, and sleep. If one of these needs is not achieved, it will rule the individual's life. Maslow believed that most humans achieve these needs easily. After one need is met, the individual moves onto the next level. However, Maslow stressed that a person can experience periodic times of hunger or thirst and still move onto higher levels, but the individual's life cannot be dominated by just one need.

Safety needs appear when physiological needs are fulfilled. These are the needs for structure, order, security, and predictability. Reducing uncertainty is the chief objective at this stage. Individuals are free from danger, fear, and chaos when the safety needs are adequately met. Affiliation is the next level after the physiological and safety needs are attained. This level includes the need for friends, family, identification with a group, and a personally intimate relationship. A person may experience feelings of solitude and emptiness if these needs are not quenched. The esteem needs will follow only if one has achieved the physiological, safety, and belongingness needs. In this stage, approval must come from earned respect and not from fame or social status. Acceptance and self-esteem originate from engaging in activities that are deemed as being socially constructive. An individual may possess feelings of inferiority if the esteem needs are not reached.

If the previous needs are sufficiently met, a person now has the opportunity to become self-actualized. However, self-actualization is an exceptional feat since it so rarely occurs. A person who reaches this stage strives for growth and self-improvement. According to Maslow, the majority of people advance through the hierarchy of needs from the bottom up, in an orderly fashion.

REQUIRED READING

In Maslow (1943a), various propositions were presented which would have to be included in any theory of human motivation that could lay claim to being definitive. These conclusions may be briefly summarized as follows:

1. The integrated wholeness of the organism must be one of the foundation stones of motivation theory.
2. The hunger drive (or any other physiological drive) was rejected as a centering point or model for a definitive theory of motivation. Any drive that is somatically based and localizable was shown to be atypical rather than typical in human motivation.
3. Such a theory should stress and center itself upon ultimate or basic goals rather than partial or superficial ones, upon ends rather than means to these ends. Such a stress would imply a more central place for unconscious than for conscious motivations.
4. There are usually available various cultural paths to the same goal. Therefore conscious, specific, local-cultural desires are not as fundamental in motivation theory as the more basic, unconscious goals.
5. Any motivated behavior, either preparatory or consummatory, must be understood to be a channel through which many basic needs may be simultaneously expressed or satisfied. Typically, an act has more than one motivation.
6. Practically all organismic states are to be understood as motivated and as motivating.

7. Human needs arrange themselves in hierarchies of pre-potency. That is to say, the appearance of one need usually rests on the prior satisfaction of another, more pre-potent need. Man is a perpetually wanting animal. Also no need or drive can be treated as if it were isolated or discrete; every drive is related to the state of satisfaction or dissatisfaction of other drives.
8. *Lists* of drives will get us nowhere for various theoretical and practical reasons. Furthermore any classification of motivations must deal with the problem of levels of specificity or generalization the motives to be classified.
9. Classifications of motivations must be based upon goals rather than upon instigating drives or motivated behavior.
10. Motivation theory should be human-centered rather than animal-centered.
11. The situation or the field in which the organism reacts must be taken into account but the field alone can rarely serve as an exclusive explanation for behavior. Furthermore the field itself must be interpreted in terms of the organism. Field theory cannot be a substitute for motivation theory.
12. Not only the integration of the organism must be taken into account, but also the possibility of isolated, specific, partial or segmental reactions. It has since become necessary to add to these another affirmation.
13. Motivation theory is not synonymous with behavior theory. The motivations are only one class of determinants of behavior. While behavior is almost always motivated, it is also almost always biologically, culturally and situationally determined as well.

This paper is an attempt to formulate a positive theory of motivation which will satisfy these theoretical demands and at the same time conform to the known facts, clinical and observational as well as experimental. It derives most directly, however, from clinical experience. This theory is, I think, in the functionalist tradition of James and Dewey, and is fused with the holism of Wertheimer (n.d.), Goldstein (1939), and Gestalt Psychology, and with the dynamicism of Freud (1933) and Adler (1938). This fusion or synthesis may arbitrarily be called a 'general-dynamic' theory.

It is far easier to perceive and to criticize the aspects in motivation theory than to remedy them. Mostly this is because of the very serious lack of sound data in this area. I conceive this lack of sound facts to be due primarily to the absence of a valid theory of motivation. The present theory then must be considered to be a suggested program or framework for future research and must stand or fall, not so much on facts available or evidence presented, as upon researches to be done, research suggested perhaps, by the questions raised in this paper.

The Basic Needs

The 'physiological' needs. The needs that are usually taken as the starting point for motivation theory are the so-called physiological drives. Two recent lines of research make it necessary to revise our customary notions about these needs, first, the development of the concept of homeostasis, and second, the finding that appetites (preferential choices among foods) are a fairly efficient indication of actual needs or lacks in the body.

Homeostasis refers to the body's automatic efforts to maintain a constant, normal state of the blood stream. Cannon (1932) has described this process for (1) the water content of the blood, (2) salt content, (3) sugar content, (4) protein content, (5) fat content, (6) calcium content, (7) oxygen content, (8) constant hydrogen-ion level (acid-base balance) and (9) constant temperature of the blood. Obviously this list can be extended to include other minerals, the hormones, vitamins, etc.

Young (1936) in a recent article has summarized the work on appetite in its relation to body needs. If the body lacks some chemical, the individual will tend to develop a specific appetite or partial hunger for that food element.

Thus it seems impossible as well as useless to make any list of fundamental physiological needs for they can come to almost any number one might wish, depending on the degree of specificity of description. We cannot identify all physiological needs as homeostatic. That sexual desire, sleepiness, sheer activity and maternal behavior in animals, are homeostatic, has not yet been demonstrated. Furthermore, this list would not include the various sensory pleasures (tastes, smells, tickling, stroking) which are probably physiological and which may become the goals of motivated behavior.

In a previous paper (Maslow, 1943a), it has been pointed out that these physiological drives or needs are to be considered unusual rather than typical because they are isolable, and because they are localizable somatically. That is to say, they are relatively independent of each other, of other motivations and of the organism as a whole, and secondly, in many cases, it is possible to demonstrate a localized, underlying somatic base for the drive. This is true less generally than has been thought (exceptions are fatigue, sleepiness, maternal responses) but it is still true in the classic instances of hunger, sex, and thirst.

It should be pointed out again that any of the physiological needs and the consummatory behavior involved with them serve as channels for all sorts of other needs as well. That is to say, the person who thinks he is hungry may actually be seeking more for comfort, or dependence, than for vitamins or proteins. Conversely, it is possible to satisfy the hunger need in part by other activities such as drinking water or smoking cigarettes. In other words, relatively isolable as these physiological needs are, they are not completely so.

Undoubtedly these physiological needs are the most pre-potent of all needs. What this means specifically is, that in the human being who is missing everything in life in an extreme fashion, it is most likely that the major motivation would be the physiological needs rather than any others. A person who is lacking food, safety, love, and esteem would most probably hunger for food more strongly than for anything else.

If all the needs are unsatisfied, and the organism is then dominated by the physiological needs, all other needs may become simply non-existent or be pushed into the background. It is then fair to characterize the whole organism by saying simply that it is hungry, for consciousness is almost completely preempted by hunger. All capacities are put into the service of hunger-satisfaction, and the organization of these capacities is almost entirely determined by the one purpose of satisfying hunger. The receptors and effectors, the intelligence, memory, habits, all may now be defined simply as hunger-gratifying tools. Capacities that are not useful for this purpose lie dormant, or are pushed into the background. The urge to write poetry, the desire to acquire an automobile, the interest in American history, the desire for a new pair of shoes are, in the extreme case, forgotten or become of secondary importance. For the man who is extremely and dangerously hungry, no other interests exist but food. He dreams food, he remembers food, he thinks about food, he emotes only about food, he perceives only food, and he wants only food. The more subtle determinants that ordinarily fuse with the physiological drives in organizing even feeding, drinking or sexual behavior, may now be so completely overwhelmed as to allow us to speak at this time (but only at this time) of pure hunger drive and behavior, with the one unqualified aim of relief.

Another peculiar characteristic of the human organism when it is dominated by a certain need is that the whole philosophy of the future tends also to change. For our chronically and extremely hungry man, Utopia can be defined very simply as a place where there is plenty of food. He tends to think that, if only he is guaranteed food for the rest of his life, he will be perfectly happy and will never want anything more. Life itself tends to be defined in terms of eating. Anything else will be defined as unimportant. Freedom, love, community feeling, respect, philosophy, may all be waved aside as fripperies which are useless since they fail to fill the stomach. Such a man may fairly be said to live by bread alone.

It cannot possibly be denied that such things are true but their generality can be denied. Emergency conditions are, almost by definition, rare in the normally functioning peaceful society. That this truism can be forgotten is due mainly to two reasons. First, rats have few motivations other than physiological ones, and since so much of the research upon motivation has been made with these animals, it is easy to carry the rat-picture over to the human being. Secondly, it is too often not realized that culture itself is an adaptive tool, one of whose main functions is to make the physiological emergencies come less and less often. In most of the known societies, chronic extreme hunger of the emergency type is rare, rather than common. In any case, this is still true in the United States. The average American citizen is experiencing appetite rather than hunger when he says "I am hungry." He is apt to experience sheer life-and-death hunger only by accident and then only a few times through his entire life.

Obviously a good way to obscure the 'higher' motivations, and to get a lopsided view of human capacities and human nature, is to make the organism extremely and chronically hungry or thirsty. Anyone who attempts to make an emergency picture into a typical one, and who will measure all of man's goals and desires by his behavior during extreme physiological deprivation is certainly being blind to many things. It is quite true that man lives by bread alone-when there is no bread. But what happens to man's desires when there is plenty of bread and when his belly is chronically filled?

At once other (and 'higher') needs emerge and these, rather than physiological hungers, dominate the organism. And when these in turn are satisfied, again new (and still 'higher') needs emerge and so on. This is what we mean by saying that the basic human needs are organized into a hierarchy of relative prepotency.

One main implication of this phrasing is that gratification becomes as important a concept as deprivation in motivation theory, for it releases the organism from the domination of a relatively more physiological need, permitting thereby the emergence of other more social goals. The physiological needs, along with their partial goals, when chronically gratified cease to exist as active determinants or organizers of behavior. They now exist only in a potential fashion in the sense that they may emerge again to dominate the organism if they are thwarted. But a want that is satisfied is no longer a want. The organism is dominated and its behavior organized only by unsatisfied needs. If hunger is satisfied, it becomes unimportant in the current dynamics of the individual.

This statement is somewhat qualified by a hypothesis to be discussed more fully later, namely that it is precisely those individuals in whom a certain need has always been satisfied who are best equipped to tolerate deprivation of that need in the future, and that furthermore, those who have been deprived in the past will react differently to current satisfactions than the one who has never been deprived.

The safety needs. If the physiological needs are relatively well gratified, there then emerges a new set of needs, which we may categorize roughly as the safety needs. All that has been said of the physiological needs is equally true, although in lesser degree, of these desires. The organism may equally well be wholly dominated by them. They may serve as the almost exclusive organizers of behavior, recruiting all the capacities of the organism in their service, and we may then fairly describe the whole organism as a safety-seeking mechanism. Again, we may say of the receptors, the effectors, of the intellect and the other capacities that they are primarily safety-seeking tools. Again, as in the hungry man, we find that the dominating goal is a strong determinant not only of his current world-outlook and philosophy but also of his philosophy of the future. Practically everything looks less important than safety, (even sometimes the physiological needs which being satisfied, are now underestimated). A man, in this state, if it is extreme enough and chronic enough, may be characterized as living almost for safety alone.

Although in this paper we are interested primarily in the needs of the adult, we can approach an understanding of his safety needs perhaps more efficiently by observation of infants and children, in whom these needs are much more simple and obvious. One reason for the clearer appearance of the threat or danger reaction in infants, is that they do not inhibit this reaction at all, whereas adults in our society have been taught to inhibit it at all costs. Thus even when adults do feel their safety to be threatened we may not be able to see this on the surface. Infants will react in a total fashion and as if they were endangered, if they are disturbed or dropped suddenly, startled by loud noises, flashing light, or other unusual sensory stimulation, by rough handling, by general loss of support in the mother's arms, or by inadequate support.

In infants we can also see a much more direct reaction to bodily illnesses of various kinds. Sometimes these illnesses seem to be immediately and per se threatening and seem to make the child feel unsafe. For instance, vomiting, colic or other sharp pains seem to make the child look at the whole world in a different way. At such a moment of pain, it may be postulated that, for the child, the appearance of the whole world suddenly changes from sunniness to darkness, so to speak, and becomes a place in which anything at all might happen, in which previously stable things have suddenly become unstable. Thus a child who because of some bad food is taken ill may, for a day or two, develop fear, nightmares, and a need for protection and reassurance never seen in him before his illness.

Another indication of the child's need for safety is his preference for some kind of undisrupted routine or rhythm. He seems to want a predictable, orderly world. For instance, injustice, unfairness, or inconsistency in the parents seems to make a child feel anxious and unsafe. This attitude may be not so much because of the injustice per se or any particular pains involved, but rather because this treatment threatens to make the world look unreliable, or unsafe, or unpredictable. Young children seem to thrive better under a system which has at least a skeletal outline of rigidity, in which there is a schedule of a kind, some sort of routine, something that can be counted upon, not only for the present but also far into the future. Perhaps one could express this more accurately by saying that the child needs an organized world rather than an unorganized or unstructured one.

The central role of the parents and the normal family setup are indisputable. Quarreling, physical assault, separation, divorce or death within the family may be particularly terrifying. Also parental outbursts of rage or threats of punishment directed to the child, calling him names, speaking to him harshly, shaking him, handling him roughly, or actual physical punishment sometimes elicit such total panic and terror in the child that we must assume more is involved than the physical pain alone. While it is true that in some children this terror may represent also a fear of loss of parental love, it can also occur in completely rejected children, who seem to cling to the hating parents more for sheer safety and protection than because of hope of love.

Confronting the average child with new, unfamiliar, strange, unmanageable stimuli or situations will too frequently elicit the danger or terror reaction, as for example, getting lost or even being separated from the parents for a short time, being confronted with new faces, new situations or new tasks, the sight of strange, unfamiliar or uncontrollable objects, illness or death. Particularly at such times, the child's frantic clinging to his parents is eloquent testimony to their role as protectors (quite apart from their roles as food-givers and love-givers).

From these and similar observations, we may generalize and say that the average child in our society generally prefers a safe, orderly, predictable, organized world, which he can count, on, and in which unexpected, unmanageable or other dangerous things do not happen, and in which, in any case, he has all-powerful parents who protect and shield him from harm.

That these reactions may so easily be observed in children is in a way a proof of the fact that children in our society, feel too unsafe (or, in a word, are badly brought up). Children who are reared in an unthreatening, loving family do not ordinarily react as we have described above (Shirley, 1942). In such children the danger reactions are apt to come mostly to objects or situations that adults too would consider dangerous.

The healthy, normal, fortunate adult in our culture is largely satisfied in his safety needs. The peaceful, smoothly running, 'good' society ordinarily makes its members feel safe enough from wild animals, extremes of temperature, criminals, assault and murder, tyranny, etc. Therefore, in a very real sense, he no longer has any safety needs as active motivators. Just as a sated man no longer feels hungry, a safe man no longer feels endangered. If we wish to see these needs directly and clearly we must turn to neurotic or near-neurotic individuals, and to the economic and social underdogs. In between these extremes, we can perceive the expressions of safety needs only in such phenomena as, for instance, the common preference for a job with tenure and protection, the desire for a savings account, and for insurance of various kinds (medical, dental, unemployment, disability, old age).

Other broader aspects of the attempt to seek safety and stability in the world are seen in the very common preference for familiar rather than unfamiliar things, or for the known rather than the unknown. The tendency to have some religion or world-philosophy that organizes the universe and the men in it into some sort of satisfactorily coherent, meaningful whole is also in part motivated by safety-seeking. Here too we may list science and philosophy in general as partially motivated by the safety needs (we shall see later that there are also other motivations to scientific, philosophical or religious endeavor).

Otherwise the need for safety is seen as an active and dominant mobilizer of the organism's resources only in emergencies, *e.g.* war, disease, natural catastrophes, crime waves, societal disorganization, neurosis, brain injury, chronically bad situation.

Some neurotic adults in our society are, in many ways, like the unsafe child in their desire for safety, although in the former it takes on a somewhat special appearance. Their reaction is often to unknown, psychological dangers in a world that is perceived to be hostile, overwhelming and threatening. Such a person behaves as if a great catastrophe were almost always impending, i.e., he is usually responding as if to an emergency. His safety needs often find specific expression in a search for a protector, or a stronger person on whom he may depend, or perhaps, a Fuehrer.

The neurotic individual may be described in a slightly different way with some usefulness as a grown-up person who retains his childish attitudes toward the world. That is to say, a neurotic adult may be said to behave 'as if' he were actually afraid of a spanking, or of his mother's disapproval, or of being abandoned by his parents, or having his food taken away from him. It is as if his childish attitudes of fear and threat reaction to a dangerous world had gone underground, and untouched by the growing up and learning processes, were now ready to be called out by any stimulus that would make a child feel endangered and threatened.

The neurosis in which the search for safety takes its dearest form is in the compulsive-obsessive neurosis. Compulsive-obsessives try frantically to order and stabilize the world so that no unmanageable, unexpected or unfamiliar dangers will ever appear (Maslow & Mittelemann, 1941); they hedge themselves about with all sorts of ceremonials, rules and formulas so that every possible contingency may be provided for and so that no new contingencies may appear. They are much like the brain injured cases, described by Goldstein (1939), who manage to maintain their equilibrium by avoiding everything unfamiliar and strange and by ordering their restricted world in such a neat, disciplined, orderly fashion that everything in the world can be counted upon. They try to arrange the world so that anything unexpected (dangers) cannot possibly occur. If, through no fault of their own, something unexpected does occur, they go into a panic reaction as if this unexpected occurrence constituted a grave danger. What we can see only as a none-too-strong preference in the healthy person, e.g., preference for the familiar, becomes a life-and-death necessity in abnormal cases.

The love needs. If both the physiological and the safety needs are fairly well gratified, then there will emerge the love and affection and belongingness needs, and the whole cycle already described will repeat itself with this new center. Now the person will feel keenly, as never before, the absence of friends, or a sweetheart, or a wife, or children. He will hunger for affectionate relations with people in general, namely, for a place in his group, and he will strive with great intensity to achieve this goal. He will want to attain such a place more than anything else in the world and may even forget that once, when he was hungry, he sneered at love.

In our society the thwarting of these needs is the most commonly found core in cases of maladjustment and more severe psychopathology. Love and affection, as well as their possible expression in sexuality, are generally looked upon with ambivalence and are customarily hedged about with many restrictions and inhibitions. Practically all theorists of psychopathology have stressed thwarting of the love needs as basic in the picture of maladjustment. Many clinical studies have therefore been made of this need and we know more about it perhaps than any of the other needs except the physiological ones (Maslow & Mittelemann, 1941).

One thing that must be stressed at this point is that love is not synonymous with sex. Sex may be studied as a purely physiological need. Ordinarily sexual behavior is multi-determined, that is to say, determined not only by sexual but also by other needs, chief among which are the love and affection needs. Also not to be overlooked is the fact that the love needs involve both giving *and* receiving love (Maslow, 1942; Plant, 1937).

The esteem needs. All people in our society (with a few pathological exceptions) have a need or desire for a stable, firmly based, (usually) high evaluation of themselves, for self-respect, or self-esteem, and for the esteem of others. By firmly based self-esteem, we mean that which is soundly based upon real capacity, achievement and respect from others. These needs may be classified into two subsidiary sets. These are, first, the desire for strength, for achievement, for adequacy, for confidence in the face of the world, and for independence and freedom (Fromm, 1941) Secondly, we have what we may call the desire for reputation or prestige (defining it as respect or esteem from other people), recognition, attention, importance or appreciation. These needs have been relatively stressed by Alfred Adler and his followers, and have been relatively neglected by Freud and the psychoanalysts. More and more today however there is appearing widespread appreciation of their central importance.

Satisfaction of the self-esteem need leads to feelings of self-confidence, worth, strength, capability and adequacy of being useful and necessary in the world. But thwarting of these needs produces feelings of inferiority, of weakness and of helplessness. These feelings in turn give rise to either basic discouragement or else compensatory or neurotic trends. An appreciation of the necessity of basic self-confidence and an understanding of how helpless people are without it, can be easily gained from a study of severe traumatic neurosis (Kardiner, 1941; Maslow, 1939).

The need for self-actualization. Even if all these needs are satisfied, we may still often (if not always) expect that a new discontent and restlessness will soon develop, unless the individual is doing what he is fitted for. A musician must make music, an artist must paint, a poet must write, if he is to be ultimately happy. What a man can be, he must be. This need we may call self-actualization.

This term, first coined by Kurt Goldstein, is being used in this paper in a much more specific and limited fashion. It refers to the desire for self-fulfillment, namely, to the tendency for him to become actualized in what he is potentially. This tendency might be phrased as the desire to become more and more what one is, to become everything that one is capable of becoming. The specific form that these needs will take will of course vary greatly from person to person. In one individual it may take the form of the desire to be an ideal mother, in another it may be expressed athletically, and in still another it may be expressed in painting pictures or in inventions. It is not necessarily a creative urge although in people who have any capacities for creation it will take this form.

The clear emergence of these needs rests upon prior satisfaction of the physiological, safety, love and esteem needs. We shall call people who are satisfied in these needs, basically satisfied people, and it is from these that we may expect the fullest (and healthiest) creativenes. Since, in our society, basically satisfied people are the exception, we do not know much about self-actualization, either experimentally or clinically. It remains a challenging problem for research.

The preconditions for the basic need satisfactions. There are certain conditions which are immediate prerequisites for the basic need satisfactions. Danger to these is reacted to almost as if it were a direct danger to the basic needs themselves. Such conditions as freedom to speak, freedom to do what one wishes so long as no harm is done to others, freedom to express one's self, freedom to investigate and seek for information, freedom to defend one's self, justice, fairness, honesty, orderliness in the group are examples of such preconditions for basic need satisfactions. Thwarting in these freedoms will be reacted to with a threat or emergency response. These conditions are not ends in themselves but they are almost so since they are so closely related to the basic needs, which are apparently the only ends in themselves. These conditions are defended because without them the basic satisfactions are quite impossible, or at least, very severely endangered.

If we remember that the cognitive capacities (perceptual, intellectual, learning) are a set of adjustive tools, which have, among other functions, that of satisfaction of our basic needs, then it is clear that any danger to them, any deprivation or blocking of their free use, must also be indirectly threatening to the basic needs themselves. Such a statement is a partial solution of the general problems of curiosity, the search for knowledge, truth and wisdom, and the ever-persistent urge to solve the cosmic mysteries.

We must therefore introduce another hypothesis and speak of degrees of closeness to the basic needs, for we have already pointed out that *any* conscious desires (partial goals) are more or less important as they are more or less close to the basic needs. The same statement may be made for various behavior acts. An act is psychologically important if it contributes directly to satisfaction of basic needs. The less directly it so contributes, or the weaker this contribution is, the less important this act must be conceived to be from the point of view of dynamic psychology. A similar statement may be made for the various defense or coping mechanisms. Some are very directly related to the protection or attainment of the basic needs, others are only weakly and distantly related. Indeed if we wished, we could speak of more basic and less basic defense mechanisms, and then affirm that danger to the more basic defenses is more threatening than danger to less basic defenses (always remembering that this is so only because of their relationship to the basic needs).

The desires to know and to understand. So far, we have mentioned the cognitive needs only in passing. Acquiring knowledge and systematizing the universe have been considered as, in part, techniques for the achievement of basic safety in the world, or, for the intelligent man, expressions of self-actualization. Also freedom of inquiry and expression has been discussed as preconditions of satisfactions of the basic needs. True though these formulations may be, they do not constitute definitive answers to the question as to the motivation role of curiosity, learning, philosophizing, experimenting, etc. They are, at best, no more than partial answers.

This question is especially difficult because we know so little about the facts. Curiosity, exploration, desire for the facts, desire to know may certainly be observed easily enough. The fact that they often are pursued even at great cost to the individual's safety is an earnest of the partial character of our previous discussion. In addition, the writer must admit that, though he has sufficient clinical evidence to postulate the desire to know as a very strong drive in intelligent people, no data are available for unintelligent people. It may then be largely a function of relatively high intelligence. Rather tentatively, then, and largely in the hope of stimulating discussion and research, we shall postulate a basic desire to know, to be aware of reality, to get the facts, to satisfy curiosity, or as Wertheimer phrases it, to see rather than to be blind.

This postulation, however, is not enough. Even after we know, we are impelled to know more and more minutely and microscopically on the one hand, and on the other, more and more extensively in the direction of a world philosophy, religion, etc. The facts that we acquire, if they are isolated or atomistic, inevitably get theorized about, and either analyzed or organized or both. This process has been phrased by some as the search for 'meaning.' We shall then postulate a desire to understand, to systematize, to organize, to analyze, to look for relations and meanings.

Once these desires are accepted for discussion, we see that they too form themselves into a small hierarchy in which the desire to know is prepotent over the desire to understand. All the characteristics of a hierarchy of prepotency that we have described above, seem to hold for this one as well.

We must guard ourselves against the too easy tendency to separate these desires from the basic needs we have discussed above, *i.e.*, to make a sharp dichotomy between 'cognitive' and 'conative' needs. The desire to know and to understand are themselves conative, i.e., have a striving character, and are as much personality needs as the 'basic needs' we have already discussed (Wertheimer, n.d., p. 386).

Future Characteristics of the Basic Needs

The degree of fixity of the hierarchy of basic needs. We have spoken so far as if this hierarchy were a fixed order but actually it is not nearly as rigid as we may have implied. It is true that most of the people with whom we have worked have seemed to have these basic needs in about the order that has been indicated. However, there have been a number of exceptions:

1. There are some people in whom, for instance, self-esteem seems to be more important than love. This most common reversal in the hierarchy is usually due to the development of the notion that the person who is most likely to be loved is a strong or powerful person, one who inspires respect or fear, and who is self-confident or aggressive. Therefore such people who lack love and seek it, may try hard to put on a front of aggressive, confident behavior. But essentially they seek high self-esteem and its behavior expressions more as a means-to-an-end than for its own sake; they seek self-assertion for the sake of love rather than for self-esteem itself.
2. There are other, apparently innately creative people in whom the drive to creativeness seems to be more important than any other counter-determinant. Their creativeness might appear not as self-actualization released by basic satisfaction, but in spite of lack of basic satisfaction.
3. In certain people the level of aspiration may be permanently deadened or lowered. That is to say, the less pre-potent goals may simply be lost, and may disappear forever, so that the person who has experienced life at a very low level, i.e., chronic unemployment, may continue to be satisfied for the rest of his life if only he can get enough food.
4. The so-called 'psychopathic personality' is another example of permanent loss of the love needs. These are people who, according to the best data available (Levy, 1937), have been starved for love in the earliest months of their lives and have simply lost forever the desire and the ability to give and to receive affection (as animals lose sucking or pecking reflexes that are not exercised soon enough after birth).
5. Another cause of reversal of the hierarchy is that when a need has been satisfied for a long time, this need may be under-evaluated. People who have never experienced chronic hunger are apt to underestimate its effects and to look upon food as a rather unimportant thing. If they are dominated by a higher need, this higher need will seem to be the most important of all. It then becomes possible, and indeed does actually happen, that they may, for the sake of this higher need, put themselves into the position of being deprived in a more basic need. We may expect that after a long-time deprivation of the more basic need there will be a tendency to reevaluate both needs so that the more pre-potent need will actually become consciously prepotent for the individual who may have given it up very lightly. Thus, a man who has given up his job rather than lose his self-respect, and who then starves for six months or so, may be willing to take his job back even at the price of losing his self-respect.
6. Another partial explanation of apparent reversals is seen in the fact that we have been talking about the hierarchy of prepotency in terms of consciously felt wants or desires rather than of behavior. Looking at behavior itself may give us the wrong impression. What we have claimed is that the person will want the more basic of two needs when deprived in both. There is no necessary implication here that he will act upon his desires. Let us say again that there are many determinants of behavior other than the needs and desires.
7. Perhaps more important than all these exceptions are the ones that involve ideals, high social standards, high values and the like. With such values people become martyrs; they give up everything for the sake of a particular ideal, or value. These people may be understood, at least in part, by reference to one basic concept (or hypothesis) which may be called 'increased frustration-tolerance through early gratification.' People who have been satisfied in their basic needs throughout their lives, particularly in their earlier years, seem to develop exceptional power to withstand present or future thwarting of these needs simply because they have strong, healthy character structure as a result of basic satisfaction. They are the 'strong' people who can easily weather disagreement or opposition, who can swim against the stream of public opinion and who can stand up for the truth at great personal cost. It is just the ones who have loved and been well loved, and who have had many deep friendships who can hold out against hatred, rejection or persecution.

I say all this in spite of the fact that there is a certain amount of sheer habituation which is also involved in any full discussion of frustration tolerance. For instance, it is likely that those persons who have been accustomed to relative starvation for a long time, are partially enabled thereby to withstand food deprivation. What sort of balance must be made between these two tendencies, of habituation on the one hand, and of past satisfaction breeding present frustration tolerance on the other hand, remains to be worked out by further research. Meanwhile we may assume that they are both operative, side by side, since they do not contradict each other. In respect to this phenomenon of increased frustration tolerance, it seems probable that the most important gratifications come in the first two years of life. That is to say, people who have been made secure and strong in the earliest years, tend to remain secure and strong thereafter in the face of whatever threatens.

Degree of relative satisfaction. So far, our theoretical discussion may have given the impression that these five sets of needs are somehow in a step-wise, all-or-none relationships to each other. We have spoken in such terms as the following: "If one need is satisfied, then another emerges." This statement might give the false impression that a need must be satisfied 100 per cent before the next need emerges. In actual fact, most members of our society who are normal, are partially satisfied in all their basic needs and partially unsatisfied in all their basic needs at the same time. A more realistic description of the hierarchy would be in terms of decreasing percentages of satisfaction as we go up the hierarchy of prepotency, For instance, if I may assign arbitrary figures for the sake of illustration, it is as if the average citizen is satisfied perhaps 85 per cent in his physiological needs, 70 per cent in his safety needs, 50 per cent in his love needs, 40 per cent in his self-esteem needs, and 10 per cent in his self-actualization needs.

As for the concept of emergence of a new need after satisfaction of the prepotent need, this emergence is not a sudden, saltatory phenomenon but rather a gradual emergence by slow degrees from nothingness. For instance, if prepotent need A is satisfied only 10 per cent: then need B may not be visible at all. However, as this need A becomes satisfied 25 per cent, need B may emerge 5 per cent, as need A becomes satisfied 75 per cent need B may emerge go per cent, and so on.

Unconscious character of needs. These needs are neither necessarily conscious nor unconscious. On the whole, however, in the average person, they are more often unconscious rather than conscious. It is not necessary at this point to overhaul the tremendous mass of evidence which indicates the crucial importance of unconscious motivation. It would by now be expected, on a priori grounds alone, that unconscious motivations would on the whole be rather more important than the conscious motivations. What we have called the basic needs are very often largely unconscious although they may, with suitable techniques, and with sophisticated people become conscious.

Cultural specificity and generality of needs. This classification of basic needs makes some attempt to take account of the relative unity behind the superficial differences in specific desires from one culture to another. Certainly, in any particular culture an individual's conscious motivational content will usually be extremely different from the conscious motivational content of an individual in another society. However, it is the common experience of anthropologists that people, even in different societies, are much more alike than we would think from our first contact with them, and that as we know them better we seem to find more and more of this commonness, we then recognize the most startling differences to be superficial rather than basic, e. g., differences in style of hair-dress, clothes, tastes in food, etc. Our classification of basic needs is in part an attempt to account for this unity behind the apparent diversity from culture to culture. No claim is made that it is ultimate or universal for all cultures. The claim is made only that it is relatively more ultimate, more universal, more basic, than the superficial conscious desires from culture to culture, and makes a somewhat closer approach to common-human characteristics, Basic needs are more common-human than superficial desires or behaviors.

Multiple motivations of behavior. These needs must be understood not to be exclusive or single determiners of certain kinds of behavior. An example may be found in any behavior that seems to be physiologically motivated, such as eating, or sexual play or the like. The clinical psychologists have long since found that any behavior may be a channel through which flow various determinants. Or to say it in another way, most behavior is multi-motivated. Within the sphere of motivational determinants any behavior tends to be determined by several or all of the basic needs simultaneously rather than by only one of them. The latter would be more an exception than the former. Eating may be partially for the sake of filling the stomach, and partially for the sake of comfort and amelioration of other needs. One may make love not only for pure sexual release, but also to convince one's self of one's masculinity, or to make a conquest, to feel powerful, or to win more basic affection. As an illustration, I may point out that it would be possible (theoretically if not practically) to analyze a single act of an individual and see in it the expression of his physiological needs, his safety needs, his love needs, his esteem needs and self-actualization. This contrasts sharply with the more naive brand of trait psychology in which one trait or one motive accounts for a certain kind of act, i.e., an aggressive act is traced solely to a trait of aggressiveness.

Multiple determinants of behavior. Not all behavior is determined by the basic needs. We might even say that not all behavior is motivated. There are many determinants of behavior other than motives. For instance, one other important class of determinants is the so-called 'field' determinants. Theoretically, at least, behavior may be determined completely by the field, or even by specific isolated external stimuli, as in association of ideas, or certain conditioned reflexes. If in response to the stimulus word 'table' I immediately perceive a memory image of a table, this response certainly has nothing to do with my basic needs.

Secondly, we may call attention again to the concept of 'degree of closeness to the basic needs' or 'degree of motivation.' Some behavior is highly motivated, other behavior is only weakly motivated. Some is not motivated at all (but all behavior is determined).

Another important point is that there is a basic difference between expressive behavior and coping behavior (functional striving, purposive goal seeking). An expressive behavior does not try to do anything; it is simply a reflection of the personality. A stupid man behaves stupidly, not because he wants to, or tries to, or is motivated to, but simply because he is what he is. The same is true when I speak in a bass voice rather than tenor or soprano. The random movements of a healthy child, the smile on the face of a happy man even when he is alone, the springiness of the healthy man's walk, and the erectness of his carriage are other examples of expressive, non-functional behavior. Also the style in which a man carries out almost all his behavior, motivated as well as unmotivated, is often expressive.

We may then ask, is all behavior expressive or reflective of the character structure? The answer is 'No.' Rote, habitual, automatized, or conventional behavior may or may not be expressive. The same is true for most 'stimulus-bound' behaviors. It is finally necessary to stress that expressiveness of behavior, and goal-directedness of behavior are not mutually exclusive categories. Average behavior is usually both.

Goals as centering principle in motivation theory. It will be observed that the basic principle in our classification has been neither the instigation nor the motivated behavior but rather the functions, effects, purposes, or goals of the behavior. It has been proven sufficiently by various people that this is the most suitable point for centering in any motivation theory (Murray, 1938).

Animal- and human-centering. This theory starts with the human being rather than any lower and presumably 'simpler' animal. Too many of the findings that have been made in animals have been proven to be true for animals but not for the human being. There is no reason whatsoever why we should start with animals in order to study human motivation. The logic or rather illogic behind this general fallacy of 'pseudo-simplicity' has been exposed often enough by philosophers and logicians as well as by scientists in each of the various fields. It is no more necessary to study animals before one can study man than it is to study mathematics before one can study geology or psychology or biology.

We may also reject the old, naive, behaviorism which assumed that it was somehow necessary, or at least more 'scientific' to judge human beings by animal standards. One consequence of this belief was that the whole notion of purpose and goal was excluded from motivational psychology simply because one could not ask a white rat about his purposes. Tolman (1932) has long since proven in animal studies themselves that this exclusion was not necessary.

Motivation and the theory of psychopathogenesis. The conscious motivational content of everyday life has, according to the foregoing, been conceived to be relatively important or unimportant accordingly as it is more or less closely related to the basic goals. A desire for an ice cream cone might actually be an indirect expression of a desire for love. If it is, then this desire for the ice cream cone becomes extremely important motivation. If however the ice cream is simply something to cool the mouth with, or a casual appetitive reaction, then the desire is relatively unimportant. Everyday conscious desires are to be regarded as symptoms, as surface indicators of more basic needs. If we were to take these superficial desires at their face value we would find ourselves in a state of complete confusion which could never be resolved, since we would be dealing seriously with symptoms rather than with what lay behind the symptoms.

Thwarting of unimportant desires produces no psychopathological results; thwarting of a basically important need does produce such results. Any theory of psychopathogenesis must then be based on a sound theory of motivation. A conflict or a frustration is not necessarily pathogenic. It becomes so only when it threatens or thwarts the basic needs, or partial needs that are closely related to the basic needs (Maslow, 1943b).

The role of gratified needs. It has been pointed out above several times that our needs usually emerge only when more prepotent needs have been gratified. Thus gratification has an important role in motivation theory. Apart from this, however, needs cease to play an active determining or organizing role as soon as they are gratified.

What this means is that, e.g., a basically satisfied person no longer has the needs for esteem, love, safety, etc. The only sense in which he might be said to have them is in the almost metaphysical sense that a sated man has hunger, or a filled bottle has emptiness. If we are interested in what actually motivates us, and not in what has, will, or might motivate us, then a satisfied need is not a motivator. It must be considered for all practical purposes simply not to exist, to have disappeared. This point should be emphasized because it has been either overlooked or contradicted in every theory of motivation I know (Maslow, 1942) the perfectly healthy, normal, fortunate man has no sex needs or hunger needs, or needs for safety, or for love, or for prestige, or self-esteem, except in stray moments of quickly passing threat. If we were to say otherwise, we should also have to aver that every man had all the pathological reflexes, e.g., Babinski, etc., because if his nervous system were damaged, these would appear.

It is such considerations as these that suggest the bold postulation that a man who is thwarted in any of his basic needs may fairly be envisaged simply as a sick man. This is a fair parallel to our designation as 'sick' of the man who lacks vitamins or minerals. Who is to say that a lack of love is less important than a lack of vitamins? Since we know the pathogenic effects of love starvation, who is to say that we are invoking value-questions in an unscientific or illegitimate way, any more than the physician does who diagnoses and treats pellagra or scurvy? If I were permitted this usage, I should then say simply that a healthy man is primarily motivated by his needs to develop and actualize his fullest potentialities and capacities. If a man has any other basic needs in any active, chronic sense, then he is simply an unhealthy man. He is as surely sick as if he had suddenly developed a strong salt-hunger or calcium hunger.

If this statement seems unusual or paradoxical the reader may be assured that this is only one among many such paradoxes that will appear as we revise our ways of looking at man's deeper motivations. When we ask what man wants of life, we deal with his very essence.

Summary

There are at least five sets of goals, which we may call basic needs. These are briefly physiological, safety, love, esteem, and self-actualization. In addition, we are motivated by the desire to achieve or maintain the various conditions upon which these basic satisfactions rest and by certain more intellectual desires.

These basic goals are related to each other, being arranged in a hierarchy of prepotency. This means that the most prepotent goal will monopolize consciousness and will tend of itself to organize the recruitment of the various capacities of the organism. The less prepotent needs are minimized, even forgotten or denied. But when a need is fairly well satisfied, the next prepotent ('higher') need emerges, in turn to dominate the conscious life and to serve as the center of organization of behavior, since gratified needs are not active motivators.

Thus man is a perpetually wanting animal. Ordinarily the satisfaction of these wants is not altogether mutually exclusive, but only tends to be. The average member of our society is most often partially satisfied and partially unsatisfied in all of his wants. The hierarchy principle is usually empirically observed in terms of increasing percentages of non-satisfaction as we go up the hierarchy. Reversals of the average order of the hierarchy are sometimes observed. Also it has been observed that an individual may permanently lose the higher wants in the hierarchy under special conditions. There are not only ordinarily multiple motivations for usual behavior, but in addition many determinants other than motives.

Any thwarting or possibility of thwarting of these basic human goals, or danger to the defenses which protect them, or to the conditions upon which they rest, is considered to be a psychological threat. With a few exceptions, all psychopathology may be partially traced to such threats. A basically thwarted man may actually be defined as a 'sick' man, if we wish. It is such basic threats which bring about the general emergency reactions.

Certain other basic problems have not been dealt with because of limitations of space. Among these are (a) the problem of values in any definitive motivation theory, (b) the relation between appetites, desires, needs and what is 'good' for the organism, (c) the etiology of the basic needs and their possible derivation in early childhood, (d) redefinition of motivational concepts, i.e., drive, desire, wish, need, goal, (e) implication of our theory for hedonistic theory, (f) the nature of the uncompleted act, of success and failure, and of aspiration-level, (g) the role of association, habit and conditioning, (h) relation to the theory of inter-personal relations, (i) implications for psychotherapy, (j) implication for theory of society, (k) the theory of selfishness, (l) the relation between needs and cultural patterns, (m) the relation between this theory and Alport's theory of functional autonomy. These as well as certain other less important questions must be considered as motivation theory attempts to become definitive.

Criticisms of Maslow’s Theory of Motivation (McLeod, 2017)

The most significant limitation of Maslow's theory concerns his methodology. Maslow formulated the characteristics of self-actualized individuals from undertaking a qualitative method called biographical analysis. He looked at the biographies and writings of 18 people he identified as being self-actualized. From these sources he developed a list of qualities that seemed characteristic of this specific group of people, as opposed to humanity in general. It is extremely difficult to empirically test Maslow's concept of self-actualization in a way that causal relationships can be established.

From a scientific perspective there are numerous problems with this particular approach. First, it could be argued that biographical analysis as a method is extremely subjective as it is based entirely on the opinion of the researcher. Personal opinion is always prone to bias, which reduces the validity of any data obtained. Therefore, Maslow's operational definition of self-actualization must not be blindly accepted as scientific fact.

Furthermore, Maslow's biographical analysis focused on a biased sample of self-actualized individuals, prominently limited to highly educated white males (such as Thomas Jefferson, Abraham Lincoln, Albert Einstein, William James, Aldous Huxley, Gandhi, and Beethoven). Although Maslow (1970) did study self-actualized females, such as Eleanor Roosevelt and Mother Teresa. They comprised a small proportion of his sample. This makes it difficult to generalize his theory to females and individuals from lower social classes or different ethnicity, which leads to questions on population validity of Maslow's findings.

Another criticism concerns Maslow's assumption that the lower needs must be satisfied before a person can achieve their potential and self-actualize. This is not always the case, and therefore Maslow's hierarchy of needs in some aspect has been falsified. Through examining cultures in which large numbers of people live in poverty (such as India), it is clear that people are still capable of higher order needs such as love and belongingness. However, this should not occur, as according to Maslow, people who have difficulty achieving very basic physiological needs (such as food, shelter etc.) are not capable of meeting higher growth needs. Also, many creative people, such as authors and artists (e.g. Rembrandt and Van Gogh) lived in poverty throughout their lifetime, yet it could be argued that they achieved self-actualization.

Psychologists now conceptualize motivation as a pluralistic behavior, whereby needs can operate on many levels simultaneously. A person may be motivated by higher growth needs at the same time as lower level deficiency needs. Contemporary research by Tay & Diener (2011) has tested Maslow’s theory by analyzing the data of 60,865 participants from 123 countries, representing every major region of the world. The survey was conducted 2005-2010. Respondents answered questions about six needs that closely resemble those in Maslow's model: basic needs (food, shelter); safety; social needs (love, support); respect; mastery; and autonomy. They also rated their well-being across three discrete measures: life evaluation (a person's view of his or her life as a whole), positive feelings (day-to-day instances of joy or pleasure), and negative feelings (everyday experiences of sorrow, anger, or stress). The results of the study support the view that universal human needs appear to exist regardless of cultural differences. However, the ordering of the needs within the hierarchy was not correct. According to Diener, “Although the most basic needs might get the most attention when you don't have them, you don't need to fulfill them in order to get benefits from other loftier needs. Even when we are hungry, for instance, we can be happy with our friends” (as cited in Bauman, 2017, p. 41).

Educational Implications (McLeod, 2017)

Maslow’s theory of motivation is also called the theory of hierarchical needs. Maslow's (1968) has made a major contribution to teaching and classroom management in schools. Rather than reducing behavior to a response in the environment, Maslow (1970) adopts a holistic approach to education and learning. Maslow looks at the complete physical, emotional, social, and intellectual qualities of an individual and how they impact on learning.

Applications of Maslow's hierarchical needs theory to the work of the classroom teacher are obvious. Before a student's cognitive needs can be met they must first fulfil their basic physiological needs. For example, a tired and hungry student will find it difficult to focus on learning. Students need to feel emotionally and physically safe and accepted within the classroom to progress and reach their full potential.

Maslow suggests students must be shown that they are valued and respected in the classroom and the teacher should create a supportive environment. Students with a low self-esteem will not progress academically at an optimum rate until their self-esteem is strengthened.

Maslow (1971) argued that a humanistic educational approach would develop people who are "stronger, healthier, and would take their own lives into their hands to a greater extent. With increased personal responsibility for one's personal life, and with a rational set of values to guide one's choosing, people would begin to actively change the society in which they lived" (p. 195).

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CHAPTER 12

Information Processing Theory

INTRODUCTION

Information Processing Theory is concerned with how people view their environment, how they put that information into memory, and how they retrieve that information later on. The Information Processing Theory approach is based on the idea that humans process information they receive instead of simply responding to external stimuli. According to the Information Processing Theory model, the mind is often compared to a computer. The computer, like mind, analyzes information and determines how the information will be stored. There are three components of the Information Processing Theory: sensory memory, short-term memory, and long-term memory. Sensory memory is all of the things that you experience through your five senses-hearing, vision, taste, smell, and touch. The capacity of sensory memory is about four items and the duration is limited to .5 to 3 seconds. Short-term memory, also called working memory, is the temporary storage, lasts about 15-30 seconds, holds about 7 items of information, and includes the thinking part of applying what come out of the sensory memory. Long-term memory is memory that can be accessed at a later time, is long lasting, and can hold infinite information. The Information Processing Theory addresses how people respond to the information they receive through their senses and how they further process those information with steps of attention, forgetting, and retention. Unlike other cognitive developmental theories, the information processing theory includes a continuous pattern of development instead of development in stages.

REQUIRED READING

The information processing (IP) theory is a cognitive approach to understanding how the human mind transforms sensory information. The model (Figure 12.1) assumes that information that comes from the environment is subject to mental processes beyond a simple stimulus-response pattern. "Input" from the environment goes through the cognitive systems which is then measured by the "output." Information that is received can take several paths depending on attention, encoding, recognition, and storage. The central executive feature controls how much information is being processed, though more primitive sensory areas of the brain first accept environmental input. The theory looks at real time responses to presented stimuli and how the mind transforms that information.

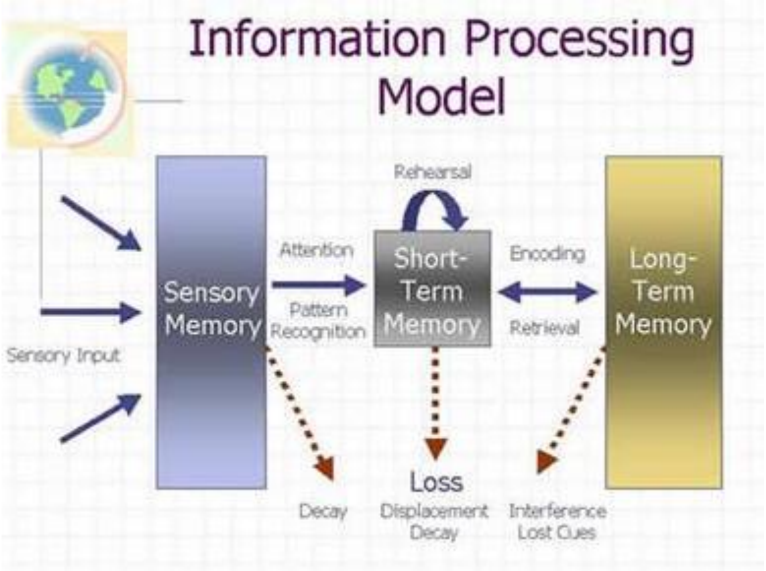


Figure 12.1 Information Processing Model. The model is constructed to represent mental processes much like that of a computer. No one theorist claims to have invented the model. The model creates a basic structure for experimental research of these internal cognitive processes.

The model assumes that through the process of maturation, one develops greater abilities to attend to stimulus, recognize patterns, encode, and retrieve information. Over long spans of time, individuals process information with greater efficiency.

Over the life span, individuals experience more information, associations, and ways to categorize the input. The process may seem passive, but the model assumes that input from the environment is actively transformed and rehearsed to become a part of long-term memory. For environmental information to become a part of long-term memory, one must attend to, rehearse, and make sense of the stimuli. The interaction between nature and nurture coincide for changes in development. The model does not attempt nor can it distinguish between the two.

How Does the Information Processing Model Work?

Sensory Memory (Figure 12.5)

Sensory memory is where information gathered from the environment is stored. Sensory memory is very limited, passive, and lasts about .5-3 seconds. It has the capacity of holding 4 items. It is affected by attention. Information is gathered from the environment through the sensory register (sensory motor). In order for information to enter the short-term memory from the sensory register, it must be attended to by the senses. Information that is not attended to is lost from the sensory memory and never enters the short-term memory. The best understood sensory registers (SRs) are for seeing (iconic) and hearing (echoic). Very little is known about tactile (touch), olfactory (smell), and gustatory (taste) SRs. For example, light reflecting off the cup hits my eye; the image is transferred through my optic nerve to the sensory register. If I do not attend to it, it fades from this memory store and is lost. In fact, my cup is on my desk most of the day, and I see it without really "seeing" it many times during the day. Each memory stage has four attributes: 1. Representation; 2. Capacity; 3. Duration; and 4. Cause of forgetting. For the visual sensory register, for example, representation is iconic-limited to the field of vision, and lasts for about 250 milliseconds. The main cause of forgetting is decay. Representation in the auditory register is echoic (based on sound); its duration is 2-3 seconds; it is only limited to the sounds we can actually hear and decay is the primary cause for forgetting. Much less is known about the other three register types.

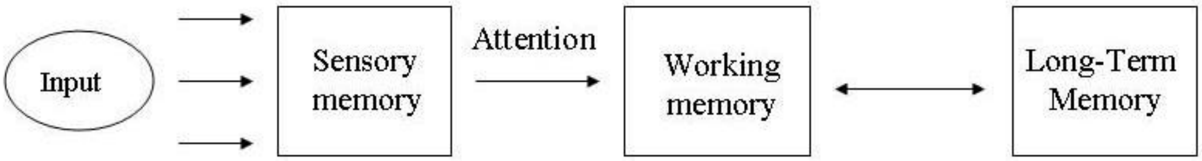
Short-Term Memory (Working Memory) (Figure 12.5)

Short-Term Memory (STM) is also known as working memory. It is where consciousness exists. In the cup example, if I attend to the cup, it will be moved into STM. At this point, it is difficult to talk about the cup in STM memory without referring to long-term memory (LTM). For example, I might attend to the cup and think, "That's my cup. It has coffee in it. I poured that coffee 3 hours ago." Each of those statements draws on LTM. I know it is my cup because it is the one that a potter friend of mine made for me. I know it has coffee in it, because I remember getting it this morning. I know that I poured that cup at 9:00 am. The statement that the coffee is 3 hours old required me to look at the current time, and retrieve from LTM that subtracting the current time from pouring time tells me how old the coffee is. Performing the subtraction used no STM processing space, because experience in doing arithmetic allows me to do this automatically.

STM is where the world meets what is already known, and where thinking is done. You perceive and attend to stimuli; that information is then actively processed based on information stored in LTM. The use strategies such as rehearsal (repeating information verbally (acoustic encoding) and chunking (categorizing information together in one memory slot) can expand the capacity of short-term memory (McLeod, 2009). In terms of the characteristics of this memory stage, the representation is echoic. It is limited to 5-9 items, and it lasts between 15-30 seconds (Atkinson & Shiffrin, 1971). At the STM stage, interference is the principal cause of forgetting. STM can hold about 7 (the magic number) items (Miller, 1956). A common example of this is calling information for a phone number. After the operator gives you the number, you begin repeating it to keep it in STM. This repetition is termed rehearsal. Rehearsal can also be used to get information into LTM, but it is very inefficient. Rehearsal primarily serves a maintenance function; it can be used to keep information in STM. In the phone number example, if someone interrupts you to ask you a question while you are rehearsing the number, responding interferes with rehearsal, and the phone number is lost. You must call the information again.

Baddeley and Hitch (1974) further researched short-term memory and developed an alternative model as working memory model (Figure 12.2; Figure 12.3).

Figure 12.2 Working Memory


Input
Sensory memory
Attention
Working memory
Long-Term Memory

In the working memory model (Figure 12.3), Central Executive is the part of working memory where information is controlled. Visuospatial Sketchpad stores and processes visual and spatial information. Phonological Loop stores and processes speech-form based sound information. Episodic Buffer is where information is brought to the forefront, used, constructed from and to the Long-Term Memory, where information is retained indefinitely.

Figure 12.3 Working Memory Model Components

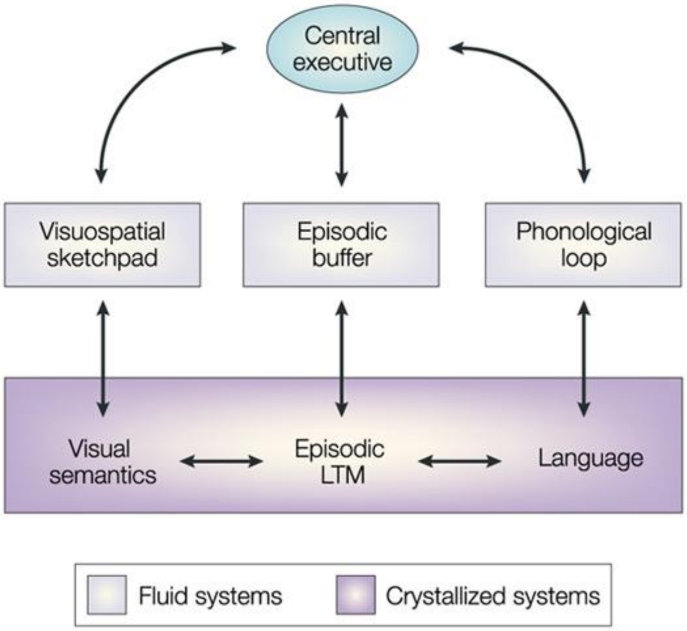

Central executive
Visuospatial sketchpad
Episodic buffer
Phonological loop
Visual semantics
Episodic LTM
Language
Fluid systems
Crystallized systems

Figure 12.3 The above diagram shows the components of working memory, which is an alternative model for short term memory, developed by Baddeley and Hitch (1974). It can also be found in Miller (2011, pp. 272-272).

Long-Term Memory (Figure 12.5)

The final stage in the IP model is long-term memory (LTM), which involves the storage and recall of information over extended periods of time, such as hours, days, weeks, or years (Merriam-Webster, 2017). LTM is everything we know and know how to do. For most cognitive psychologists, the world of LTM can be categorized as one of three types of memory (Figure 12.4): declarative, procedural or episodic. Declarative knowledge can be defined as knowledge needed to complete this sentence "Knowing that…" By contrast, procedural knowledge is "Knowing how…" These two types of knowledge account for most of what is learned in school and at work. The remaining type of knowledge is episodic which might also be called anecdotal. This is memory for specific events in one's life: a memory of your first kiss or of your graduation. The personal stories in our lives comprise episodic memory. While this makes for a neat tautology, some have suggested that it is incomplete.

Figure 12.4 Declarative Knowledge, Procedural Knowledge, and Episodic Knowledge in Long-Term Memory

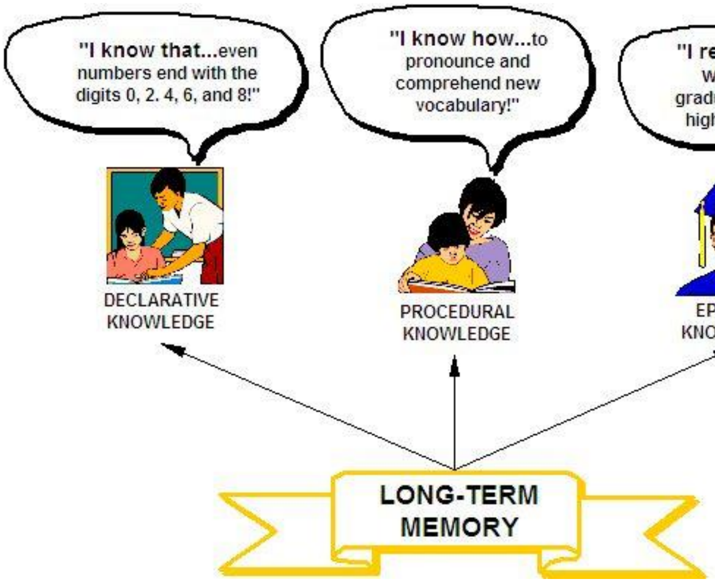

"I know that...even numbers end with the digits 0, 2. 4, 6, and 8!"
"I know how...to pronounce and comprehend new vocabulary!"
"I remember when...I graduated from high school!"
DECLARATIVE KNOWLEDGE
PROCEDURAL KNOWLEDGE
EPISODIC KNOWLEDGE
LONG-TERM MEMORY

Figure 12.4. The Inspiration web illustrates that most cognitive psychologists categorized that Long-Term Memory consists of declarative knowledge ("I know that… even numbers end with the digits 0, 2, 4, 6, and 8!"), procedural knowledge ("I know how… to pronounce and comprehend new vocabulary!"), and episodic knowledge ("I remember when… I graduated from high school!"). By Tiffany Davis, Meghann Hummel, and Kay Sauers (2006).

Pavio (1986) has asserted that memory for images differs from memory for words. He offers a dual coding hypothesis asserting that when we see an image, both the image and a label for that image are stored in memory. He has extended the hypothesis, suggesting that dual codes may exist for the other senses as well. For example, the smell of an orange is stored along with its label "orange." Others have suggested that there are mechanisms that control thinking and learning. These control processes are called metacognition. Metacognition often takes the form of strategies. For example, learners attempting to master a complex topic might choose to use a strategy such as drawing pictures to help them understand the complex inter-relationships of the various components of the topic. Strategic readers might stop and mentally summarize what they have just read in order to ensure comprehension.

The 1970s saw great expansion of understanding of human learning. It became clear that there was no one method of teaching that ensured successful learning. Many researchers, especially in the field of second language (L2) acquisition, recognizing this fact, turned their attention to learners, attempting to answer the question "Why is it that some learners succeed in learning regardless of the methods used to teach them?" Rubin (1975) and Stern (1975) formulated lists of the characteristics and strategies that "good" language learners use in their study. Rubin and Thompson (1982) offered guidance to foreign language students on how to make themselves better learners. Extensive study of this notion of learning strategies in the 1980s led O'Malley et al. (1985) to formulate a list of 24 strategies used by English as a Second Language (ESL) students in their study. Most importantly, the strategies were classified into three categories: Metacognitive Strategies**:** is a term borrowed from IP theory. These strategies, according to O'Malley et al. (cited in Brown,1987), "indicate an 'executive ' function…that involve planning for learning, thinking about the learning process as it is taking place, monitoring…and evaluating learning…" (Brown, 1987, p. 94). Metacognitive strategies might include using advance organizers, self-planning, self-monitoring, and self-evaluation; Cognitive Strategies: are more task-specific, and often refer to "direct manipulation of the learning material itself" (Brown, 2000, p. 124). Examples of cognitive strategies are note-taking, repetition, guessing meaning from context, or using mnemonic devices; Socio-affective Strategies: refer to strategies that use association with or input from teachers or peers. O'Malley, Chamot, Stewer-Manzanares, Russo, and Kupper (1985) have gone on to suggest that these strategies can be overtly taught to learners, facilitating one of the most important goals of learning, learner autonomy.

Finally, there is another viewpoint that offers the notion of concepts. For example, there exists a concept called "bird," which can be reduced to declarative statements such as: "It has feathers," "It has wings and flies," "It lays eggs," and the like. The concept of "bird" can also include our episodic experiences with birds-the parakeet I had when I was a child, the sparrow I found dead by the fence one morning, etc. It can also include the hundreds of images that we have seen of birds, as well as all instances of real birds we have seen. All of this collectively is what we know of as "bird." It is the concept of bird, the tightly woven collection of knowledge that we have for birds.

In the end, there are five types of knowledge in LTM-declarative, procedural, episodic, imagery, and strategic knowledge; there also exists one collective type called conceptual knowledge. For the LTM stage, the representation is semantic (based on meaning). Capacity and duration are considered unlimited in LTM, and the cause of forgetting is failure to retrieve.

How information gets into the LTM? In order to keep information in the working, it needs to be rehearsed (rote memorization). Rote memorization is not an effective way to move information to the long-term memory. However, by using the correct methods, information can be moved from the short-term memory into the long-term memory where it can be kept for long periods of time. Information that is stored in the long-term memory does not need to be rehearsed. To retrieve information from the long-term memory, short-term memory must be used. Usually if someone "forgets" something that is stored in the long-term memory, they have simply forgotten how to retrieve it or where it is stored.

In order for information to move from short-term (working) memory to long term memory, it must be attended within 5 to 20 seconds of entering. Information must be linked to prior knowledge and encoded in order to be permanently stored in long term memory. It is generally believed that encoding for short-term memory storage in the brain relies primarily on acoustic encoding, while encoding for long-term storage is more reliant on semantic encoding (The Human Memory, n.d). Some encoding methods include chunking, imagery, and elaboration. For examples, when I think about teaching learners, I need to know what they already know so that they can relate the new information to their existing knowledge. This is elaboration. While teachers can do some of that for learners, elaboration is an active process. The learner must be actively engaged with the material that is to be learned. This does not necessarily mean that the learner must be physically active; rather, it implies that they should be actively relating this new piece of information to other ideas that they already know. LTM is often regarded as a network of ideas. In order to remember something, ideas are linked, one to another until the sought-after information is found. Failure to remember information does not mean that it has been forgotten; it is merely the procedure for retrieval has been forgotten. With more elaboration, more pathways to that piece of information are created. More pathways make retrieval of the information more likely. If it is found, it is not forgotten.

Figure 12.5 Sensory, Short-Term (Working), and Long-Term Memory

Type	Characteristics	Representation	Capacity	Duration	Cause of Forgetting
Sensory Memory	limited and passive; store information gathered from the external environment	senses (seeing, hearing, taste, feel, touch)	4 items	.5-3 seconds	decay
Short-Term Memory	active information processing: rehearsing and chunking	visual imaging and acoustic (sound) encoding	5-9 items	16-30 seconds (5-15 seconds without rehearsal)	interference
Long-Term Memory	unlimited; store information over extended periods of time (hours, days, weeks, months, years, etc.)	semantic encoding: chunking, imagery, and elaboration (knowledge: declarative, procedural, episodic, imagery, strategic, collective/ conceptual)	infinite	permanent	forgetting the retrieval pathway

Human as Computer

Within the IP model, humans are routinely compared to computers (Figure 12.6). This comparison is used as a means of better understanding the way information is processed and stored in the human mind. Therefore, when analyzing what actually develops within this model, the more specific comparison is between the human brain and computers. Computers were introduced to the study of development and provided a new way of studying intelligence (Lachman & Lachman, 1979) and “added further legitimacy to the scientific study of the mind” (Goodwin, 2005, p. 411). In the model below, you can see the direct comparison between human processing and computer processing. Within this model, information is taken in (or input). Information is encoded to give meaning and compared with stored information. If a person is working on a task, this is where the short-term memory (working) memory is enacted. An example of that for a computer is the Central Processing Unit (CPU). In both cases, information is encoded, given meaning, and combined with previously stored information to enact the task. The latter step is where the information is stored where it can later be retrieved when needed. For computers, this would be akin to saving information on a hard drive, where you would then upload the saved data when working on a future task (using the short-term (working) memory).

Figure 12.6 Human Memory and Computer Comparison

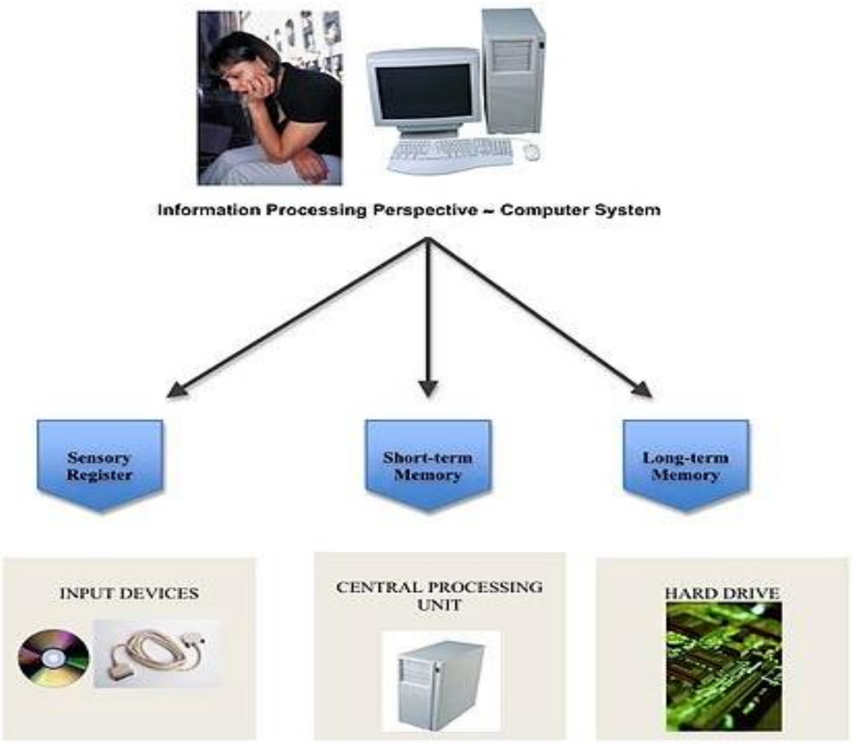


Figure 12.6. The Inspiration web above shows how Information Processing can be likened to the model of a computer. The Sensory Register would include input devices like CDs. Short-Term Memory includes the Central Processing Unit. Long-Term Memory would be viewed as the hard drive or storage. By Tiffany Davis, Meghann Hummel, and Kay Sauers (2006).

Information Processing Theory views humans as information processing systems with memory systems sometimes referred to as cognitive architecture (Miller, 2011). A computer metaphor is often applied to human cognitive systems, wherein information (a stimulus) is inputted (sensed) and the brain then performs processes such as comparing the information to previously stored information (schemas), transforming information (encoding), or storing information in long-term memory.

This theory views humans as machines, actively inputting, retrieving, processing and storing information. Context, social content, and social influences on processing are generally ignored in favor of a focus on internal systemic processes (Miller 2011). Nature provides the hardware, or the neurological processing system likely predisposed to economical and efficient processing, as well as being pre-tuned to attend to specific stimuli. The “Nurture” component presents as the environment which provides the stimuli to be inputted and processed by the system.

Current Areas of Research

Information Processing Theory is currently being utilized in the study of computer or artificial intelligence. This theory has also been applied to systems beyond the individual, including families and business organizations. For example, Ariel (1987) applied Information Processing Theory to family systems, with sensing, attending, and encoding stimuli occurring either within individuals within the system or as the family system itself. Unlike traditional systems theory, where the family system tends to maintain stasis and resists incoming stimuli which would violate the system's rules, the Information Processing family develops individual and mutual schemas which influence what and how information is attended to and processed. Dysfunctions can occur both on the individual level as well as within the family system itself, creating more targets for therapeutic change. Rogers, Miller, and Judge (1999) utilized Information Processing Theory to describe business organizational behavior, as well as to present a model describing how effective and ineffective business strategies are developed. In their study, components of organizations that "sense" market information are identified as well as how organizations attend to this information, which gatekeepers determine what information is relevant/important for the organization, how this is organized into the existing culture (organizational schemas), and whether or not the organization has effective or ineffective processes for their long-term strategy.

Memory, Human Development, Social Influences, and Learning

When children are faced with information that is unfamiliar to them, they are left with the task of developing strategies to encode the information so as to store it and accurately and easily access it at a later time (Miller, 2011). Depending on the age of the child, the method of storing information into memory differs. As children develop, increased cognitive abilities, increased memory capacity, and other social/cultural factors serve as major contributors to their development. Older children are more likely to develop memory strategies on their own, are better at discerning what memory strategies are appropriate for particular situations and tasks, and are better able to selectively attend to important information and filter out extraneous information.

Memory and Strategies

The strategies children use to encode and remember information are of interest to Information Processing researchers (e.g., task analysis research). For example, “young children are capable of using rehearsal to aid memory if they are told to rehearse, but they are deficient at spontaneously producing a strategy” (production deficiency) (Miller, 2011, p. 283). Therefore, young children are unable to ascertain the appropriate time to use particular strategies. On children’s encoding strategy development characteristics, Miller (2011) pointed out the following:

- As children develop they become more capable of developing appropriate strategies to acquire and remember units of knowledge when necessary;
- A child’s ability to selectively choose which information they attend to is another developmental milestone;
    - A child may choose a strategy that does not produce a desired outcome (utilization deficiency);
    - Children may use several strategies on the same task;
    - They may frequently change their strategies used or strategies develop as a result of increased knowledge, development, etc.;
- Children develop strategies over the course of their development;
- Children may employ strategies at an early age that prove ineffective later in development; and
- Children may develop new strategies that they find effective and useful later in life.

Information processing theory combines elements of both quantitative and qualitative development. Qualitative development occurs through the emergence of new strategies for information storage and retrieval, developing representational abilities (such as the utilization of language to represent concepts), or obtaining problem-solving rules (Miller, 2011). Increases in the knowledge base or the ability to remember more items in short-term (working) memory are examples of quantitative changes, as well as increases in the strength of connected cognitive associations (Miller, 2011). The qualitative and quantitative components often interact together to develop new and more efficient strategies within the processing system.

Memory and Knowledge

Information Processing Theory views memory and knowledge formation as working together, and not as separate and mutually exclusive concepts. Humans are better able to remember things they have knowledge of, which increases the recall of stored information. Increased knowledge allows the person to more readily access information because it has been categorized and the bits of information relate to one another.

As children develop, they also gain an understanding of their own memory and how it works, which is called metamemory. Also, children also gain information about how human cognitive functioning, which is called metacognition. These are other important developmental milestones, which indicate the child is able to process much more complex and less concrete information. This is important in our overall functioning, because it shows an understanding of our own functioning related to specific tasks and how to best adapt our learning and memory strategies.

Younger children have less memory capacity. A child's level of comprehension is integrally connected with their memory (Miller, 2011). As the child develops, they are able to process information at a faster speed, and they have an increased capacity of how much information they can take in at a time. Increased memory capacity allows the child to process and store more bits of information (Miller, 2011). Thus, older children are able to take in more information at a faster rate, therefore allowing better efficiency of information processing.

Increased knowledge enables the child to more readily access information from their long-term storage and utilize it in appropriate situations (Miller, 2011). The more associations one is able to make and the more complex their network of associations, the better their information recall. A developmental milestone examined in children is their ability to take information and expound upon it. Younger children are more likely to purely recall the information they process. However, as children develop and gain knowledge, they are better able to gather information, make inferences, judgments, and go beyond pure recall (Miller, 2011).

Memory and Social Influences

One's culture greatly influences how one remembers bits of information by how the culture emphasizes various elements, emotions, or even events (Shaki & Gravers, 2011). As the text discusses, children can manage and handle more information at once due to increased capacity, and "because new information can be packaged into preexisting categories and structures" (Miller, 2011, p. 290). The knowledge gained, however, is not obtained without interaction with the child's external environment. Attitudes and beliefs about gender, race, sex roles, etc. greatly influence how a child processes and recalls information (Miller, 2011). Beck (1975) suggests that as we develop we learn how to process external stimuli, and these messages are processed, interpreted and incorporated into one's internal schemas. For example, children in a school setting who are taught that men and women occupy certain gender-stereotypic jobs are thus more likely to process information through such a "filter" (Best, 1983). The text points out that children may even reconstruct images later to fit with their schema of a particular occupation (Miller, 2011). This relates to the construction of scripts, which are assumptions or expectations about what is supposed to happen in a particular situation. They can greatly influence how a child remembers events and may potentially lead to assumptions about people, events, etc. (Miller, 2011). While scripts are helpful in making the information processing system more efficient, they can hinder the recall of specific information and enhance the generalizations made about people, events, etc. Language is an integral part of one's culture that can greatly influence the information processing system. Language, the nature of a task's instruction, and the type of task can all greatly impact the processing of information (Shaki & Gravers, 2011). Furthermore, individualistic versus collectivistic cultures can have different outlooks on human development as well as the proper formation and development of an individual, which therefore influences motivations and actions toward goals (Hamamura, Meijer, Heine, Kamaya, & Hori, 2009).

Criticisms of Information Processing Theory

Models based upon Information Processing Theory take a somewhat simplistic view of cognitive processing, with information processing being viewed largely as a linear process. This IP model does not take into account simultaneous or parallel processing. For example, with the linear model, which suggests rehearsal is required to encode information in long-term memory, is likely faulty in cases of trauma, where information can be encoded automatically and without rehearsal due to a single exposure to traumatic stimuli. The metaphor of the computer is off-putting to many, who dislike comparing human beings to machines. Moreover, no current computer program can truly simulate the full range of human cognition. Computer constructed models that are based upon this theory are highly complex and again cannot take into account all the nuances of human thought despite their complexity. Information Processing Theory does not account for fundamental developmental changes, or changes to the "hardware" of the brain. For example, how do humans gain the ability to utilize representational thought utilizing language? How do people develop "formal operations" thinking, such as abstract logical or social thinking when previously their thoughts were in "concrete" terms? There is an excessive focus on internal cognitive processes, with little attention being paid to environmental influences or the nature of the external stimuli the individual is exposed to. Lastly, the impact of emotions or behaviors on cognitive processing or interpretation is not sufficiently included in this model. For example, the Information Processing model does not consider how an individual can process a stimulus differently if they are angry versus if they are in a calm state. The Information Processing model is described as being universal, with little attention being paid to individual differences or cultural differences.

Educational Implications

In K-12 classrooms, most teachers hand out worksheets to help students practice (or rehearse) their new information. To improve students' encoding, teachers should look for ways to incorporate more senses. For example, when learning new vocabulary (such as in a foreign language) teachers could have the students act out the words. In higher education classrooms, the more modes of information an instructor can provide to students the better. If the classroom or course doesn't condone itself to a lab-like lesson or environment to allow students to actually experience the concept on their own, instructors could point the students in the direction of a good video tutorial on that day's lesson. The instructor could even make their own videos.

Making learning multi-modal. The more modes the teacher or the instructor have working at one time, the more likely learners are going to remember (e.g. the more senses used, the better). Humans, like computers, need to do something with new information so to store it in our brains so that we can recall it again later when needed. We need to create a similar pathway so we make sure our brain knows not to discard the newly learned information. This process is called encoding. A good example of encoding we are all familiar with is ROY G BIV. This acronym was created as a way to remember the colors on the color spectrum: Red, Orange, Yellow, Green, Blue, Indigo, and Violet. Additionally, the more times we practice pulling the information out, the easier and easier it becomes when needed. During encoding, a learner may watch, listen, repeat, recall, etc., it is very important to keep cognitive load in mind when trying to learn, recall, and remember new information. Cognitive load is a term concerning the manner in which cognitive resources are focused and used during learning and problem solving (Chandler & Sweller, 1991; Sweller, 1988, 1989). It is argued that cognitive load can be reduced for learners via instructional design. When designing and presenting information, teachers and the instructors are encouraged to consider learner activities that optimize intellectual performance. Overloading a learner with information and stimuli can have negative effects on task completion and comprehension. To help students effectively process information, the teacher or the instructor could use the following guidelines:

- Gain students' attention. Example: Gain attention before providing information, move around the room, voice fluctuations, etc.
- Ask students to recall prior relevant learning. Example: review of previous day's material.
- Point out important information. Example: information on the board, handouts, study guides, etc.
- Organizing information. Example: present information starting at simple and moving to more complex.
- Categorize related information. Example: Present information in a logical sequence and teach students to look for similarities and differences.
- Have students relate new information. Example: Connect new information with something that is already known.
- Teaching encoding for memorizing lists. Example: mnemonics and imagery.
- Repetition of learning. Example: Present information in many different ways and provide many ways for students to manipulate information.
- Overlearning. Example: Daily practice drills.
- Pay attention not to create cognitive overloading activities.

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