STUDENTS AS LEARNERS

I. Student Development and the Learning Process

A. Theoretical Foundations of how learning occurs: how students construct knowledge acquires skills and develop habits of mind.

B. Important theorists to know:
   • Albert Bandura
   • Jerome Bruner
   • John Dewey
   • Jean Piaget
   • Lev Vygotsky
   • Howard Gardner
   • Abraham Maslow
   • Erik Erikson
   • Lawrence Kohlberg
   • Carol Gilligan
   • B.F. Skinner

C. Important terms that relate to learning theory:

Constructivism - A major theme in the theoretical framework of Bruner is that learning is an active process in which learners construct new ideas or concepts based upon their current/past knowledge. The learner selects and transforms information, constructs hypotheses, and makes decisions, relying on a cognitive structure to do so. Cognitive structure (i.e., schema, mental models) provides meaning and organization to experiences and allows the individual to "go beyond the information given".

As far as instruction is concerned, the instructor should try and encourage students to discover principles by themselves. The instructor and student should engage in an active dialog (i.e., socratic learning). The task of the instructor is to translate information to be learned into a format appropriate to the learner's current state of understanding. Curriculum should be organized in a spiral manner so that the student continually builds upon what they have already learned.

Bruner (1966) states that a theory of instruction should address four major aspects:

1. Predisposition towards learning,
2. The ways in which a body of knowledge can be structured so that it can be most readily grasped by the learner,
3. The most effective sequences in which to present material, and
4. The nature and pacing of rewards and punishments. Good methods for structuring knowledge should result in simplifying, generating new propositions, and increasing the manipulation of information.
In his more recent work, Bruner (1986, 1990) has expanded his theoretical framework to encompass the social and cultural aspects of learning.

**Example:**
This example is taken from Bruner (1973):

"The concept of prime numbers appears to be more readily grasped when the child, through construction, discovers that certain handfuls of beans cannot be laid out in completed rows and columns. Such quantities have either to be laid out in a single file or in an incomplete row-column design in which there is always one extra or one too few to fill the pattern. These patterns, the child learns, happen to be called prime. It is easy for the child to go from this step to the recognition that a multiple table, so called, is a record sheet of quantities in completed multiple rows and columns. Here is factoring, multiplication and primes in a construction that can be visualized."

**Principles:**

1. Instruction must be concerned with the experiences and contexts that make the student willing and able to learn (readiness).
2. Instruction must be structured so that it can be easily grasped by the student (spiral organization).
3. Instruction should be designed to facilitate extrapolation and or fill in the gaps (going beyond the information given).

http://www.lifecircles-inc.com/Learningtheories/constructivism/constructivism.html

**Metacognition** - Metacognition is thinking about thinking, knowing "what we know" and "what we don't know." Just as an executive's job is management of an organization, a thinker's job is management of thinking. The basic metacognitive strategies are:

1. Connecting new information to former knowledge.
2. Selecting thinking strategies deliberately.
3. Planning, monitoring, and evaluating thinking processes. (Dirkes, 1985)

**Readiness** -

**Schemata** -- Schemata are schemes, which allow us to integrate knowledge in ways by linking traits and facts together so that the 'lumpiness' of reality is accurately represented in our minds. Remember, if it quacks like a duck, swims like a duck, and has feathers like a duck, it is probably a duck.
Scaffolding -- One way in which these thinking and communications skills can be nurtured is through scaffolding. Scaffolding means doing some of the work for the student who isn't quite ready to accomplish a task independently. Like the supports that construction workers use on buildings, scaffolding is intended to be temporary. It is there to aid the completion of a task and it is eventually removed.
http://edweb.sdsu.edu/people/bdodge/scaffolding.html

Blooms Taxonomy -- SEE KEY QUESTION SECTION FOR FULL DESCRIPTION (pg.14)

Zone of Proximal Development -- The zone of proximal development is the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers (Vygotsky, 1978:86). What children can do with the assistance of others is even more indicative of their mental development than what they can do alone (Vygotsky, 1978:85).

The zone of proximal development embodies a concept of readiness to learn that emphasizes upper levels of competence. These upper boundaries are not immutable, however, but constantly changing with the learner's increasing independent competence. What a child can perform today with assistance she will be able to perform tomorrow independently, thus preparing her for entry into a new and more demanding collaboration. These functions could be called the "buds," rather than the fruits of development. The actual developmental level characterizes mental development retrospectively, while the zone of proximal development characterizes mental development prospectively (Vygotsky, 1978:86-87).
http://www.nap.edu/html/howpeople1/ch4_b1.html

Intrinsic and Extrinsic Motivation -- (in the educational setting)
http://www.sfwbc.edu/EdTalk/motivations.htm

Intrinsic - Motivations in learning affect the pupil, and every pupil immediately brings some level of personal motivations into the class setting. These are intrinsic motivations to participate and to learn, and these motivations refer to the innate motives of a person to engage in an endeavor or learning experience. An activity is intrinsically motivating when no benefit or advantage is realized except for the interest that the activity alone brings to the person. An intrinsic learning motivation, therefore, encourages an inherent educational response in the pupil. A few examples of intrinsic motivations for education are a pupil's personal interest, ambition, freedom of choice, and desire to learn.

Extrinsic - Extrinsic motivation refers to motives forced on a person from without. An external motivation aids a pupil's desire to perform in the learning process, but this
desire is not related to the inherent needs or interests of the student. Neither is the desire related to the importance of the educational fact. Some examples of extrinsic motivations are rote memorization, testing, or grading. To some degree, both intrinsic and extrinsic learning motivations are necessary to the learning process; however, the conditions surrounding and timing of their use will be crucial to the success of effecting continual learning and life change in the pupil.

D. Human Development in the physical, social, emotional, moral, and cognitive domains.

• Know the theoretical contributions of important theorists such as:

1. **Erik Erikson** - Austrian psychoanalyst evolved his eight stages of development, which he described as: (1) infancy: trust versus mistrust; (2) early childhood: autonomy versus shame and doubt; (3) preschool: initiative versus guilt; (4) school age: industry versus inferiority; (5) puberty: identity versus identity confusion; (6) young adulthood: intimacy versus isolation; (7) middle adulthood: generativity versus stagnation; and (8) late adulthood: integrity versus despair.

2. **Lawrence Kohlberg** - hypothesized that people's development of moral standards passes through stages that can be grouped into three moral levels. At the early level, that of preconventional moral reasoning, the child uses external and physical events (such as pleasure or pain) as the source for decisions about moral rightness or wrongness; his standards are based strictly on what will avoid punishment or bring pleasure. At the intermediate level, that of conventional moral reasoning, the child or adolescent views moral standards as a way of maintaining the approval of authority figures, chiefly his parents, and acts in accordance with their precepts. Moral standards at this level are held to rest on a positive evaluation of authority, rather than on a simple fear of punishment. At the third level, that of postconventional moral reasoning, the adult bases his moral standards on principles that he himself has evaluated and that he accepts as inherently valid, regardless of society's opinion. He is aware of the arbitrary, subjective nature of social standards and rules, which he regards as relative rather than absolute in authority.

3. **Carol Gilligan** - Gilligan began teaching at Harvard in 1967 with renowned psychologist Erik Erikson. In 1970 she became a research assistant for Lawrence Kohlberg. Kohlberg is known for his research on moral development and his stage theory of moral development, justice and rights. Gilligan's primary focus came to be moral development in girls. Her interest in these dilemmas grew as she interviewed young men thinking about enlisting for the Vietnam War and women who were contemplating abortions.

Gilligan would go on to criticize Kohlberg's work. This was based on two things. First, he only studied privileged, white men and boys. She felt that this caused a biased opinion against women. Secondly, in his stage theory of moral development, the male view of individual rights and rules was considered a higher stage than women's point of view of development in terms of its caring effect on human relationships.
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Women were taught to care for other people and expect others to care for them. She helped to form a new psychology for women by listening to them and rethinking the meaning of self and selfishness. She asked four questions about women's voices: who is speaking, in what body, telling what story, and in what cultural framework is the story presented?

Her criticisms were published in 1982 in her most famous book titled, In a Different Voice: Psychological Theory and Women's Development. She came to be known as the founder of "difference feminism". Many feminists insisted that there are no differences between males and females. Gilligan asserted that women have differing moral and psychological tendencies than men. According to Gilligan, men think in terms of rules and justice and women are more inclined to think in terms of caring and relationships. She asks that Western society begin to value both equally.

She outlines three stages of moral development progressing from selfish, to social or conventional morality, and finally to post conventional or principled morality. Women must learn to tend to their own interests and to the interests of others. She thinks that women hesitate to judge because they see the complexities of relationships.

4. Jean Piaget - Divides childhood development into four stages. The first stage being a sensorimotor stage, chiefly concerned with mastering his own innate physical reflexes and extending them into pleasurable or interesting actions. During the same period, the child first becomes aware of himself as a separate physical entity and then realizes that the objects around him also have a separate and permanent existence. In the second, or preoperational, stage, roughly from age two to age six or seven, the child learns to manipulate his environment symbolically through inner representations, or thoughts, about the external world. During this stage, he learns to represent objects by words and to manipulate the words mentally, just as he earlier manipulated the physical objects themselves. In the third, or concrete operational, stage, from age 7 to age 11 or 12, occurs the beginning of logic in the child's thought processes and the beginning of the classification of objects by their similarities and differences. During this period, the child also begins to grasp concepts of time and number. The fourth stage, the period of formal operations, begins at age 12 and extends into adulthood. It is characterized by an orderliness of thinking and a mastery of logical thought, allowing a more flexible kind of mental experimentation. The child learns in this final stage to manipulate abstract ideas, make hypotheses, and see the implications of his own thinking and that of others.

5. Abraham Maslow - argued that each person has a hierarchy of needs that must be satisfied, ranging from basic physiological requirements to love, esteem, and, finally, self-actualization. As each need is satisfied, the next higher level in the emotional hierarchy dominates conscious functioning; thus, people who lack food or shelter or who cannot feel themselves to be in a safe environment are unable to express higher needs. Maslow believed that truly healthy people satisfied even the highest psychological needs and were self-actualizers, fully integrating the components of their personality, or self.
6. **Albert Bandura** - An advocate of social learning theory who argues that children by observing others. For example, children who saw a model punished for aggressive behavior tended to exhibit fewer aggressive responses than children who saw the model rewarded for such behavior, or than those who saw the model neither rewarded nor punished. Bandura's research has led some psychologists to question the potential "learning experiences" offered children by popular television shows and motion pictures, particularly those shows in which antisocial or violent behavior is presented.

7. **Lev Vygotsky** - Russian psychologist who developed genetic approach to the development of concepts in early childhood and youth, tracing the transition through a series of stages of human development, based on the development of the child's social practice. His works were published after his death in 1934 and suppressed in 1936 and were not known in the West until 1958.

8. **Jerome Bruner** - American psychologist and educator whose work on perception, learning, memory, and other aspects of cognition in young children has, along with the related work of Jean Piaget, influenced the American educational system.

Bruner's studies helped to introduce Piaget's concept of developmental stages of cognition into the classroom. His much-translated book *The Process of Education* (1960) was an influential study of curriculum reform. In it he argued that any subject could be taught to any child at any stage of development, if it is presented in the proper manner. According to Bruner, all children have natural curiosity and a desire to become competent at various learning tasks; when a task as presented to them is too difficult, however, they become bored. A teacher must, therefore, present schoolwork at a level so as to challenge the child's current developmental stage. Bruner also studied perception in children, concluding that children's individual values significantly affect their perceptions.

9. **John Dewey** - American philosopher and educator who was one of the founders of the philosophical school of pragmatism, a pioneer in functional psychology, and a leader of the progressive movement in education in the United States.

Dewey left Michigan in 1894 to become professor of philosophy and chairman of the department of philosophy, psychology, and pedagogy at the University of Chicago. Dewey's achievements there brought him national fame. The increasing dominance of evolutionary biology and psychology in his thinking led him to abandon the Hegelian theory of ideas, which views them as somehow mirroring the rational order of the universe, and to accept instead an instrumentalist theory of knowledge, which conceives of ideas as tools or instruments in the solution of problems encountered in the environment. These same disciplines contributed somewhat later to his rejection of the Hegelian notion of an Absolute Mind manifesting itself as a rationally structured, material universe and as realizing its goals through a dialectic of ideas. Dewey found more acceptable a theory of reality holding that nature, as encountered in scientific and ordinary experience, is the ultimate reality and that man is a product of nature who finds his meaning and goals in life here and now.
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Since these doctrines, which were to remain at the centre of all of Dewey's future philosophizing, also furnished the framework in which Dewey's colleagues in the department carried on their research, a distinct school of philosophy was in operation. This was recognized by William James in 1903, when a collection of essays written by Dewey and seven of his associates in the department, *Studies in Logical Theory*, appeared. James hailed the book enthusiastically and declared that with its publication a new school of philosophy, the Chicago school, had made its appearance.

Dewey's philosophical orientation has been labeled a form of pragmatism, though Dewey himself seemed to favor the term "instrumentalism," or "experimentalism." William James's *The Principles of Psychology* early stimulated Dewey's rethinking of logic and ethics by directing his attention to the practical function of ideas and concepts, but Dewey and the Chicago school of pragmatists went farther than James had gone in that they conceived of ideas as instruments for transforming the uneasiness connected with the experience of having a problem into the satisfaction of some resolution or clarification of it.

Dewey's preferred mode of inquiry was scientific investigation; he thought the experimental methods of modern science provided the most promising approach to social and ethical as well as scientific problems. He rejected the idea of a fixed and immutable moral law derivable from consideration of the essential nature of man, since such a traditional philosophical method denied the potential application and promise of newer empirical and scientific methods.

Dewey developed from these views a philosophical ground for democracy and liberalism. He conceived of democracy not as a mere form of government, but rather as a mode of association that provides the members of a society with the opportunity for maximum experimentation and personal growth. The ideal society, for Dewey, was one that provided the conditions forever enlarging the experience of all its members.

Dewey's contributions to psychology were also noteworthy. Many of the articles he wrote at that time are now accepted as classics in psychological literature and assure him a secure place in the history of psychology. Most significant is the essay "The Reflex Arc Concept in Psychology," which is generally taken to mark the beginnings of functional psychology — i.e., one that focuses on the total organism in its endeavors to adjust to the environment.

*Educational theory and practice.* Dewey's work in philosophy and psychology was largely centered in his major interest, educational reform. In formulating educational criteria and aims, he drew heavily on the insights into learning offered by contemporary psychology as applied to children. He viewed thought and learning as a process of inquiry starting from doubt or uncertainty and spurred by the desire to resolve practical frictions or relieve strain and tension. Education must therefore begin with experience, which has as its aim growth and the achievement of maturity.
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Dewey's writings on education, notably his *The School and Society* (1899) and *The Child and the Curriculum* (1902), presented and defended what were to remain the chief underlying tenets of the philosophy of education he originated. These tenets were that the educational process must begin with and build upon the interests of the child; that it must provide opportunity for the interplay of thinking and doing in the child's classroom experience; that the teacher should be a guide and coworker with the pupils, rather than a taskmaster assigning a fixed set of lessons and recitations; and that the school's goal is the growth of the child in all aspects of its being.

Among the results of Dewey's administrative efforts were the establishment of an independent department of pedagogy and of the University of Chicago's Laboratory Schools, in which the educational theories and practices suggested by psychology and philosophy could be tested. The Laboratory Schools, which began operation in 1896, attracted wide attention and enhanced the reputation of the University of Chicago as a foremost centre of progressive educational thought. Dewey headed the Laboratory Schools until 1904.

Dewey's ideas and proposals strongly affected educational theory and practice in the United States. Aspects of his views were seized upon by the "progressive movement" in education, which stressed the student-centered rather than the subject-centered school, education through activity rather than through formal learning, and laboratory, workshop, or occupational education rather than the mastery of traditional subjects. But though Dewey's own faith in progressive education never wavered, he came to realize that the zeal of his followers introduced a number of excesses and defects into progressive education. Indeed, in *Experience and Education* (1938) he sharply criticized educators who sought merely to interest or amuse students, disregarded organized subject matter in favor of mere activity on the part of students, and was content with mere vocational training.

During the last two decades of Dewey's life, his philosophy of education was the target of numerous and widespread attacks. Progressive educational practices were blamed for the failure of some American school systems to train pupils adequately in the liberal arts and for their neglect of such basic subjects as mathematics and science. Furthermore, critics blamed Dewey and his progressive ideas for what the former viewed as an insufficient emphasis on discipline in the schools.

His most famous work is *Thought and Language*, published shortly after his death, developed for the first time a theory of language development which both anticipated Piaget's genetic psychology - describing the development of language and logical thinking in young children in the course of their interactions with adults and the world around them, internalizing the practical activity expressed in sensori-motor activity, via vocalisations, inner-speech and finally thought - and the development of theoretical, or conceptual knowledge in school-age children as their intuitive knowledge, acquired in their immediate life experiences, comes into active contact with socially transmitted knowledge of the teacher.
Equally renowned is The Crisis in Psychology, in which Vygotsky makes a systematic critique of all the currents and trends in European psychology of the day, including the dominant so-called Marxist psychology. In the Soviet Union of his times, Stalin fostered pseudo-scientific trends, such as Lysenko's theory of Inheritance of Acquired Characteristics, which used quotations from Marx and Engels or Lenin to support theoretical lines in science as if these were party-political questions which can resolved by reference to political doctrine.

Vygotsky was strongly influenced by Pavlov, the discoverer of the conditional reflex and leaned towards behaviourism, emphasising the requirement for science to adopt objective methods of investigation, in opposition to the introspective methods of Husserl, for example. Vygotsky did not live long enough to resolve the contradictions into which behaviourism is lead in coming to grips with the manifest reality of subjective consciousness.

His works were published after his death in 1934 and suppressed in 1936 and were not known in the West until 1958. More recently, linguists and educationalists influenced by Piaget's Genetic Psychology have been drawn towards Vygotsky's work, seeing in it a superior understanding of the relationship between the educator and the educated, in which the educator must "negotiate" with the child or student who is credited with an active role in the learning process. Especially in the United States, Vygotsky has found a following among Community Development workers who value his concept of a "Zone of Proximal Development", in which leadership is able to facilitate intellectual and social development in struggles by communities to change their circumstances, leading to a subsequent benefit in an all-round development of conceptual ability.

10. B.F. Skinner - Burrhus Frederic Skinner American psychologist and an influential exponent of behaviorism, which views human behavior in terms of physiological responses to the environment and favors the controlled, scientific study of response as the most direct means of elucidating man's nature.

Skinner was attracted to psychology through the work of the Russian physiologist Ivan Pavlov on conditioned reflexes, articles on behaviorism by Bertrand Russell, and the ideas of John B. Watson, the founder of behaviorism. After receiving his Ph.D. from Harvard University (1931), he remained there as a researcher until 1936, when he joined the faculty of the University of Minnesota, Minneapolis, where he wrote The Behavior of Organisms (1938).

As professor of psychology at Indiana University, Bloomington (1945–48), Skinner gained some measure of public attention through his invention of the Air-Crib, a large, soundproof, germ-free, air-conditioned box designed to serve as a mechanical baby tender, supposed to provide an optimal environment for child growth during the first two years of life. In 1948 he published one of his most controversial works, Walden Two, a novel on life in a utopian community modeled on his own principles of social engineering.
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As a professor of psychology at Harvard University from 1948 (emeritus 1974), Skinner came to influence a generation of psychologists. Using various kinds of experimental equipment that he devised, he trained laboratory animals to perform complex and sometimes quite exceptional actions. A striking example was his pigeons that learned to play table tennis. One of his best-known inventions, the Skinner box, has been adopted in pharmaceutical research for observing how drugs may modify animal behavior.

His experiences in the step-by-step training of research animals led Skinner to formulate the principles of programmed learning, which he envisioned to be accomplished through the use of so-called teaching machines. Central to his approach is the concept of reinforcement, or reward. The student, learning by use of the machine at his own pace, is rewarded for responding correctly to questions about the material he is trying to master. Learning is thereby presumably reinforced.

In addition to his widely read Science and Human Behavior (1953), Skinner wrote a number of other books, including Verbal Behavior (1957), The Analysis of Behavior (with J.G. Holland, 1961), and Technology of Teaching (1968). Another work that generated considerable controversy, Beyond Freedom and Dignity (1971), argued that concepts of freedom and dignity may lead to self-destruction and advanced the cause of a technology of behavior comparable to that of the physical and biological sciences. Skinner published an autobiography in three parts: Particulars of My Life (1976), The Shaping of a Behaviorist (1979), and A Matter of Consequences (1983). The year before his death, Recent Issues in the Analysis of Behavior (1989) was published.

11. Howard Gardner – Howard Gardner proposes that there is not a single Intelligence," but rather that there are seven: "Multiple Intelligence Theory" (7 aspects)
http://www.pz.harvard.edu/Pls/HG.htm
http://www.infed.org/thinkers/gardner.htm

- Visual / Spatial Intelligence - These children think in images and pictures. They may be fascinated with mazes or jigsaw puzzles, or spend free time drawing, building with Legos or daydreaming.
- Musical Intelligence - Musical children are always singing or drumming to themselves. They are usually quite aware of sounds others may miss. These kids are often discriminating listeners.
- Verbal Intelligence - Children with this kind of intelligence enjoy writing, reading, telling stories or doing crossword puzzles.
- Logical/Mathematical Intelligence - Children with lots of logical intelligence are interested in patterns, categories and relationships. They are drawn to arithmetic problems, strategy games and experiments.
- Interpersonal Intelligence - Children who are leaders among their peers, who are good at communicating and who seem to understand others' feelings and motives possess interpersonal intelligence.
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- **Intrapersonal Intelligence** - These children may be shy. They are very aware of their own feelings and are self-motivated
- **Bodily / Kinesthetic Intelligence** - These kids process knowledge through bodily sensations. They are often athletic, dancers or good at crafts such as sewing or woodworking.

E. The major progressions in each developmental domain and the ranges of individual variation within each domain.

1. **Infancy** - period between birth and the acquisition of language one to two years later. Inherited reflexes that help them obtain nourishment and react to danger, newborns are equipped with a predilection for certain visual patterns, including that of the human face, and for certain sounds, including that of the human voice. Within a few months, they are able to identify their mother by sight, and they show a striking sensitivity to the tones, rhythmic flow, and individual sounds that make up human speech. Rapid advances in both recognition and recall memory, and this in turn increases their ability to understand and anticipate events in their environment. A fundamental advance at this time is the recognition of object permanence—i.e., the awareness that external objects exist independently of the infant's perception of them. Infant's physical interactions with his environment progress from simple uncoordinated reflex movements to more coordinated actions that are intentionally repeated because they are interesting or because they can be used to obtain an external goal.

2. **Childhood** - The second major phase in human development. Extends from one or two years of age until the onset of adolescence at age twelve or thirteen. The early years of childhood are marked by enormous strides in the understanding and use of language. Children begin to comprehend words some months before they themselves actually speak. The average infant speaks his first words by 12-14 months, and by the 18th month he has a speaking vocabulary of about 50 words. The child begins to use two- and then three-word combinations and progresses from simple noun-verb combinations to more grammatically complex sequences, using conjunctions, prepositions, articles, and tenses with growing fluency and accuracy. By the fourth year most children can speak in adult like sentences and have begun to master the more complex rules of grammar and meaning. Between the ages of 7 and 12, the beginnings of logic appear in the form of classifications of ideas, an understanding of time and number, of other hierarchical relationships.

3. **Adolescence** - Transitional phase of growth and development between childhood and adulthood. "Adolescence" is a convenient label for the period in the life span between ages 12 and 20 and is roughly equivalent to the term "teens."

In many societies adolescence is narrowly equated with puberty (q.v.) and the cycle of physical changes culminating in reproductive maturity. Western societies understand adolescence in terms of a broader sense of development—that is, it encompasses...
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psychological, social, and moral terrain as well as the strictly physical aspects of maturation.

Adolescence is the period during which the individual experiences an upsurge of sexual feelings following the latency period of childhood. During this time the individual learns to control and direct his sex urges. Another issue that usually arises in adolescence is that of emotional (if not physical) separation from parents as a necessary step in the establishment of personal values. This new responsibility for self-determination and self-sufficiency forces an array of adjustments upon many adolescents. Furthermore, teenagers often have no defined role of their own in society but are caught in the ambiguous overlap between the reasonably clearly defined roles of childhood and adulthood. In a sense these issues define adolescence in Western cultures, and the response to them partly determines the nature of an individual's adult years.

Some specialists consider adolescence to be an intense and often stressful period of development that is characterized by a variety of special types of behavior. Others find that the difficulties of adolescence have been exaggerated and that for many adolescents the process of maturation is usually peaceful and untroubled.

4. **Young Adulthood** - In sheer number of years, the periods labeled adulthood and aging constitute the major portion of the human life span. Historically, however, these periods were seen as less significant and interesting developmentally than infancy, childhood, and adolescence. Adulthood was viewed as a time of continuity; a period when what had been developed earlier was utilized. Aging was viewed as a time of decline; a period when what had been developed earlier was lost. Contemporary opinion is that adulthood and aging are just as significant and interesting as the earlier periods of the life cycle. Adulthood and aging are characterized by both growth and decline.

**Central nervous system processing**

There is relatively clear evidence that, with advancing age, individuals show a tendency toward decreasing speed of response. This is a gradual change occurring across the entire life span that shows up in a variety of so-called speeded tasks (those in which errors would be unlikely if the individual had an unlimited amount of time to complete the tasks). For example, reaction time tests (which measure the time elapsing between the appearance of a signal and the beginning of a responding movement) are usually viewed as a measure of central nervous system processing. Mean speed of response on such tasks increases with age until the late teens, remains constant until the mid-20s, and then declines steadily throughout the remainder of the age range.

Much evidence has been accumulated to link changes in brain electrical activity to the slowing of behavior. The electroencephalogram (EEG) provides a record of the brain's electrical activity. The normal human EEG displays continuous rhythmic activity in the form of wavelike patterns varying in frequency and amplitude. The dominant rhythm is
the alpha wave, which reaches its maximum frequency in adolescence and begins to slow gradually after young adulthood. This slowing may be related to disease processes (particularly vascular disease) and to basic aging processes. The older adult's central nervous system appears to be in a state of under arousal in comparison to that of the younger adult.

Each candidate must understand the impact of student's physical, social, emotional, moral, and cognitive development on their learning and how to address these factors when making instructional decisions.

**Key Questions:**

Go beyond memorization of definitions; try to apply the terms to the theories behind them and think of application in the classroom.

What are some specific classroom based examples of extrinsic and intrinsic motivators for students?

Make sure you can recognize the differences between lower order and higher order thinking in classroom activities, using Bloom's taxonomy as a guide.

**Bloom's Taxonomy (6 Levels)**

1. **Knowledge** – ability to remember something previously learned.
   - Trigger Words – tell, recite, list, memorize, remember, define
   - Products – Workbook pages, quiz, vocabulary, test, skill work

2. **Comprehension** – demonstrate basic understanding of concepts and curriculum. Translate into other words.
   - Trigger Words – summarize, explain, translate, give examples, edit
   - Products – drawing, diagram, revision, translation

3. **Application** – transfer knowledge learned in one situation to another.
   - Trigger Words – demonstrate, build, cook, use maps, charts, etc,
   - Products – recipe, model, artwork, craft, demonstration

4. **Analysis** – understand how parts relate to the whole. Understand structure and motive. Note fallacies.
   - Trigger Words – investigate, classify, categorize, compare, contrast
   - Products – survey, plan, report, questionnaire, prospectus

   - Trigger Words – judge, evaluate, give opinion, recommend, critique
   - Products – decision, editorial, debate, rating/grades, defense

6. **Synthesis** – re-form individual parts to make a new whole.
   - Trigger Words – compose, design, invent, create, construct
   - Products – lesson plan, song, poem, story, advertisement

What is an example of a schema and what good is it?

What is scaffolding and why is it important for both teachers and students?
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When responding to case studies, you will be asked to perform the following kinds of tasks relative to human development and the learning process:
  Identifying and describing strengths and weakness.
  Appropriateness of instruction for grade and age level.
Propose a strategy for:
  Instruction that would be appropriate for students at the age described in the case

Knowing the theorist’s major ideas and being able to compare and contrast one theorist with another. In addition knowing how these ideas can be applied to teaching practice is important.

What are the major differences between Jerome Bruner’s and Jean Piaget’s theories of cognitive development?

How might a teacher apply some of Lev Vygotskys ideas about scaffolding and direct instruction in the classroom? What does Gardner’s work on multiple intelligences suggest about planning instruction?

What does Abraham Maslows hierarchy of needs suggest about motivation for learning in the classroom?
II. Students as Diverse Learners

A. Differences in the way students learn and perform.

- **Learning Styles** -
  - **Multiple Intelligences** (additional information listed above under Howard Gardner)
    - **Linguistic intelligence** ("word smart")
    - **Logical-mathematical intelligence** ("number/reasoning smart")
    - **Spatial intelligence** ("picture smart")
    - **Bodily-Kinesthetic intelligence** ("body smart")
    - **Musical intelligence** ("music smart")
    - **Interpersonal intelligence** ("people smart")
    - **Intrapersonal intelligence** ("self smart")
    - **Naturalist intelligence** ("nature smart")

- **Performance Modes** -
  - Concrete operational thinkers
  - Visual and aural learners

- **Gender Differences** -

- **Cultural Expectations and Styles** -

D. Areas of exceptionality in students learning


- **Visual and Perceptual Difficulties / Learning Disabilities**
  - **Dysgraphia – Developmental Writing Disorder**
    - [www.ldonline.org](http://www.ldonline.org)
    - [www.ncld.org](http://www.ncld.org)
  - **Dyslexia – Developmental Reading Disorder**
    - [www.ldonline.org](http://www.ldonline.org)
    - [www.ncld.org](http://www.ncld.org)
  - **Dyscalculia – Developmental Arithmetic Disorder**
    - [www.ldonline.com](http://www.ldonline.com)
    - [www.ncld.org](http://www.ncld.org)
  - **Dyspraxia – Learning Disability in motor skills**
    - [www.ldonline.com](http://www.ldonline.com)
    - [www.ncld.org](http://www.ncld.org)
  - **Autism - Autism is a complex developmental disability that**
    - **typically appears during the first three years of life. The result of a neurological disorder that affects the functioning of the brain, autism and its associated behaviors have been estimated to occur in as many as 2 to 6 in 1,000 individuals (Centers for Disease Control and Prevention 2001).**

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is four times more prevalent in boys than girls and knows no racial, ethnic, or social boundaries. Family income, lifestyle, and educational levels do not affect the chance of autism's occurrence.

- http://www.autism-society.org/site/PageServer
- www.ncld.org

○ ADD/ADHD - Attention Deficit Disorder (ADD)-Attention Deficit Hyperactive Disorder.
  * Behavioral syndrome characterized by inattention and distractibility, restlessness, inability to sit still, and difficulty concentrating on one thing for any period of time.

ADHD most commonly occurs in children, though an increasing number of adults are being diagnosed with the disorder. ADHD is three times more common in males than in females and occurs in approximately 3 to 6 percent of all children. Although behaviors characteristic of the syndrome are evident in all cultures, they have garnered the most attention in the United States, where ADHD is the most commonly diagnosed childhood psychiatric disorder.

* Symptoms - ADHD does not have easily recognizable symptoms or definitive diagnostic tests. Children and adults are diagnosed with ADHD if they persistently show a combination of traits including, among others, forgetfulness, distractibility, fidgeting, restlessness, impatience, difficulty sustaining attention in work, play, or conversation, or difficulty following instructions and completing tasks. According to criteria issued by the APA, at least six of these traits must be present "to a degree that is maladaptive," and these behaviors must cause "impairment" in two or more settings—e.g., at school, work, or at home. Inattention predominates in some cases, hyperactivity in others, and in a combined type of ADHD the two are present together.

○ Medication - The most common medication used to treat ADHD is methylphenidate (Ritalin®), a mild form of amphetamine. Amphetamines increase the amount and activity of the neurotransmitter norepinephrine (noradrenaline) in the brain. Although such drugs act as a stimulant in most people, they have the paradoxical effect of calming, focusing, or "slowing down" people with ADHD.
  - www.ldonline.org
  - http://www.add.org/

- Functional mental retardation
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- Characteristics - A standardized intelligence test is a common method of identification, a tested intelligence quotient of 70 being the usual upper borderline for those needing special care and training. Retardation is classified according to severity. Categories of retardation take into account an individual's physical and social development, and correspond roughly to IQ scores. Those with scores in the upper range of retardation, roughly 53 to 70, comprise the majority of retarded persons; they are able to learn academic and prevocational skills with some special training. Those in the moderate range, roughly 36 to 52, are able to talk and care for their own basic needs, to learn functional academic skills, and to undertake semi-skilled work under sheltered conditions. Those in the severe range, about 21 to 35, show slow motor development, limited communication skills, possible physical handicaps, and the ability to talk and care for their basic needs, as well as to contribute to their own maintenance with supervision in work and living situations. Finally, those in the profound range, comprising the smallest number of the retarded, demonstrate minimal responsiveness, secondary physical handicaps, poor motor development and communication skills, and the ability to perform only highly structured work activities. Institutionalization in this case is almost inevitable. Educators have coordinated IQ scores with school capabilities: educable, 50–75; trainable, 25–50; and custodial, 0–25.

- Causes - Moderate to severe retardation can be caused by a number of mishaps that may occur before, during, or after birth, including: genetic disorders, such as Down's Syndrome (leading to cretinism or mongolism, for example); infectious diseases, such as meningitis; metabolic disorders; physical malformations; poisoning from radiation, lead, or other toxic agents; injuries to the head; and malnutrition. Milder cases of progressive retardation can be traced to economic and cultural deprivation early in childhood, mainly due to poverty.

C. Legislation and institutional responsibilities relating to exceptional students:

- **Americans with Disabilities Act (ADA) (1990)** - U.S. legislation that extends civil rights protection to citizens with physical or mental disabilities; protects people with disabilities from discrimination in employment and public accommodations; mandates that buildings, public transportation systems, telecommunications systems, and other public services be made accessible to individuals with
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disabilities; bill broadens the definition of disability to include persons with infectious and communicable diseases—specifically, AIDS patients and HIV-infected persons.
• **Individuals with Disabilities Education Act (IDEA)** -
  Is a reauthorization of the Public Law 94-142. Congress renamed the Education for All Handicapped Children and reaffirmed a national intention to support alternative education for student with special learning needs. The Education for All Handicapped Children Act, which is now known as the Individuals with Disabilities Education Act (IDEA), was first enacted in 1975. This landmark legislation was needed to assure that students with disabilities receive free appropriate public education (FAPE) and the related services and support they need to achieve. IDEA was created to help states and school districts meet their legal obligations to educate children with disabilities, and to pay part of the extra expenses of doing so.

  IDEA has several parts: Part B provides grants to states for services to preschool and school age children. Part C funds early intervention services for infants, toddlers, and their families, and Part D supports research and professional development programs. Currently, approximately 6 million children receive special education services.

  When children are identified as eligible for special education services, an individualized education program (IEP) is developed by a team, which includes the child's parents, teachers, and other school staff. The IEP outlines the specific services and supports the child needs, within the least-restrictive environment (LRE). While the law has been reauthorized and improved over the years, the IEP and LRE provisions have been protected as basic rights of children with disabilities. Parent involvement is also a fundamental principle of IDEA. Parents must be fully informed of their children's rights, and they can participate in all decisions affecting their child. IDEA also outlines due process provisions, which allow parents to challenge school district decisions.

  When IDEA was originally enacted, Congress recognized that school districts would incur higher costs in educating children with disabilities and promised to pay 40 percent of the average per-pupil expenditure to help cover the added expenses. Unfortunately, the funding has never come close
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to meeting the need, and in FY 2002, federal funds only contributed 18 percent of this cost.

In the past several years, a number of bills in Congress would have provided mandatory full funding for IDEA, to guarantee that the federal contribution would be fulfilled, but those efforts failed. Full funding supporters argue that increases in the federal contribution for IDEA free up money school districts have been paying that would otherwise be available for other purposes. The full funding proposals would allow districts to offset 55 percent of their IDEA increases (more if they are in full compliance with IDEA) and use it for other local purposes. Current law allows school districts to use 20 percent of their IDEA funding increases for other purposes now.

During the consideration of IDEA reauthorization, there are also attempts to amend the IDEA discipline provisions in current law, which require schools to provide alternative education services to children with disabilities if there is a need for suspension or expulsion from their regular education placement. Congress is in the process of reauthorizing IDEA, and the issues of mandatory full funding, use of funds, and discipline are among the issues debated.

http://www.ed.gov/offices/OSERS/IDEA/q_and_a.html

**Inclusion** - Inclusive education means that all students in a school, regardless of their strengths or weaknesses in any area, become part of the school community. They are included in the feeling of belonging among other students, teachers, and support staff. The federal Individuals with Disabilities Education Act (IDEA) and its 1997 amendments make it clear that schools have a duty to educate children with disabilities in general education classrooms.

**Mainstreaming** - Mainstreaming is an educational method that includes many different kinds of learners in the same classroom, instead of separating students according to their learning abilities. The term mainstreaming was first used in the 1970s and describes classrooms where students with disabilities and students who do not have disabilities are together. In a mainstreamed classroom, all kids, including gifted kids and children with disabilities, learn together in the same classroom. Mainstreaming is now more commonly known as inclusion, and many school systems today are using inclusion in their districts.

**Least Restrictive Environment** - The Least Restrictive Environment (LRE) is defined as the educational setting where a child with disabilities can receive a free appropriate public education (FAPE) designed to meet his or her education needs while being
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educated with peers without disabilities in the regular educational environment to the maximum extent appropriate. The definition of LRE in the Individuals with Disabilities Education Act (IDEA) is: "To the maximum extent appropriate, children with disabilities, including children in public or private institutions or other care facilities, are [1] educated with children who are not disabled, and [2] special classes, separate schooling, or other removal of children with disabilities from the regular educational environment occurs only when the nature or severity of the disability of a child is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily." It is important to remember that special education is not a "place," but rather a set of services. Similarly, the LRE provision of the IDEA emphasizes services rather than the placement. Learning in less restrictive environments benefits students with and without disabilities in so much as all children are more likely to improve their academic performance, and increase their communication and socialization skills.

IEP (individualized educational plan), including what, by law, must be included in each IEP. - The Individualized Educational Plan is a detailed plan to address the learning disabilities of a child. The meeting gives parents and the school a chance to work together to design an Individualized Education Program (IEP) for the child with learning disabilities who's eligible for special education. The goals and objectives or benchmarks are the core of the IEP.

What Are Goals? Goals represent what parents and the IEP team think the child will be able to accomplish in his area(s) of disability in a year's time. Since goals are long term, generally they're written in a broad, but measurable, way. Here are some samples:

- Sammy will improve in basic reading skills as measured by the district's reading assessment.
- Sammy will improve in math computation as measured by standardized testing.

What Are Objectives and Benchmarks?
Either objectives or benchmarks must be written for each goal. Objectives and benchmarks show what the child will be doing throughout the year to reach his/her goals.

Objectives represent the skills the child needs to develop to achieve the goal. Objectives for the goal dealing with math computation could look like this:

- By December, given 10 problems requiring two-digit plus two-digit addition without renaming (regrouping/carrying)(e.g., 14 + 11 = ), Sammy will write the sums with 80% accuracy.
- By February, given 10 problems requiring two-digit plus two-digit addition with renaming (e.g., 14 + 18 = ), Sammy will write the sums with 80% accuracy.
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**Benchmarks** show the mastery level the child is expected to have at various points in the year. For the math goal, they could look this way:

- By December, given 10 problems requiring two-digit plus two-digit addition with and without renaming, Sammy will write the sums with 70% accuracy.
- By February, given 10 problems requiring two-digit plus two-digit addition with and without renaming, Sammy will write the sums with 80% accuracy.

Objectives and benchmarks are written in precise, behavioral terms and usually include:

- **A behavior** — what the child will do (compute addition problems)
- **A criterion** — the level at which the child will perform the behavior (accuracy level - 70% or 80%)
- **An evaluation procedure** — the tool used to evaluate the child’s performance (10 problems)
- **An evaluation schedule** — the timeline for the child’s to reach the objective or benchmark (December or February)

Every school district writes goals and objectives or benchmarks differently, but each goal should have at least two objectives or benchmarks to evaluate progress regularly.

**How Are Goals Developed?**
The team develops goals and objectives or benchmarks based on how the child is performing in the curriculum. Reports from parents and the teachers, as well as assessments, provide the basis for deciding areas to focus on for your child. If you prepare some ideas before the meeting, you’ll feel more comfortable participating in the process.

Sometimes the team chooses to continue goals and objectives or benchmarks written in the last IEP; other times, they change them in some way. When new areas of need are identified, the team writes additional goals and objectives or benchmarks to address them.

**How Many Goals Are Enough?**
Often IEPs include too many goals and objectives or benchmarks. This can be confusing to parents and the teachers and put unrealistic expectations on the child. To keep the number manageable, consider one goal for each "big" area of concern, e.g., basic reading skills, reading comprehension, math calculation, study skills, etc.

**Who Carries Out the Goals?**
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The type of goals and objectives or benchmarks the team writes determines who will carry them out. The special education teacher, general education teacher, or support person (e.g., speech/language pathologist) may be responsible. Many times, a team works together, e.g., the special and general education teachers and the speech/language pathologist may work to help the child improve skills in reading comprehension.

The child needs to understand what his/her goals and objectives or benchmarks are. As he/she gets older, he/she should be involved in developing them, as well. The more he/she is aware of what he's working on, the better his/her buy-in, and the greater his/her chances of achieving the goals.

- **Public Law 94-142** specifies that all students with disabilities have the right to a free, appropriate public education and that schools must have an individualized educational plan for each student with a disability.
- **Section 504 of the Rehabilitation Services Act.** It is illegal to deny participation in activities or benefits of programs or to in any way discriminate against a person with a disability solely because of disability.

D. Approaches for accommodating various learning styles, intelligences, or exceptionalities including:

**Differentiated Instruction** - Differentiated instruction is an approach to planning so that one lesson is taught to the entire class while meeting the individual needs of each child. The teacher weaves the individual goals into the classroom content and instructional strategies. The content and the instructional strategies are the vehicles by which the teacher meets the needs of all the students.

**Alternative Assessment** - Alternative assessment is any type of assessment in which students create a response to a question or task. (In traditional assessments, students choose a response from a given list, such as multiple-choice, true/false, or matching.) Alternative assessments can include short-answer questions, essays, performance assessment, oral presentations, demonstrations, exhibitions, and portfolios.

**Testing Modifications** –
- Provide equitable opportunity to demonstrate knowledge and ability
- Provide equal opportunity to participate on testing situations.
- Minimize effects of the student's disability.
- Maintain integrity.
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- Provide an even playing field that is based on the student need.
- Include in IEP.
- Should not be excessive.
- Should be to the least extent possible.
- Are consistently implemented.
- Are not recommended based on classification or program/placement.

Types of Test Modifications –
- Flexible Schedule
  - Time extension – specify amount of time
  - Break during testing
- Flexible Setting
  - Individually in a separate location
  - Small group in a separate location
  - Special lighting
  - Adaptive or special equipment
  - Special acoustics
  - Minimal distractions
- Revised Test Format
  - Braille or large print
  - Increase spacing
  - Increase size, shape or location of space for answers
  - Reduce number of test items per page
  - Increase size of answer bubbles
  - Arrange items in vertical format with answer bubble next to choice
  - Omit items in unusual circumstances
- Revised Test Directions
  - Rewrite directions in simple language
  - Underlining key words in directions
  - Provide cues
  - Read test directions
  - Provide additional examples
- Use of Aids
  - Tape recorder
  - Typewriter/word processor
  - Calculator
  - Abacus
  - Visual magnification devices

E. Process of second language acquisitions and strategies to support the learning of students for whom English is not a first language.

F. Understanding the influence of individual experience talents, and prior learning, as well as language, culture, family, and community values.
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- Multicultural backgrounds
- Age appropriate knowledge and behavior
- The student culture at school.
- Family backgrounds
- Linguistic patterns and differences
- Cognitive patterns and differences
- Social and emotional issues.

Key Questions

Give a specific example from your own experience on the effects of differences in learning styles on how people understand and express what they know.

What is an example of the way cultural expectations from a particular geographical region or ethnic group might affect how students learn or express what they know?

What does the research reveal about gender differences and how they might affect learning?

Know the major types of challenges in each special education category (e.g. dyslexia under Learning Disabilities) know the major symptoms and range of severity and know the major classroom and instructional issues related to each identified need.

Know the basic rights or responsibilities of identified students that the legislation has established.

When responding, you will be asked to perform the following kinds of tasks related to the area of students as diverse learners.

Identify and describe a strength and/or weakness in:
- A lesson plan for meeting needs of individual students with identified special needs.
- The interaction between the teacher and students in terms of culturally responsive teaching.

Propose a strategy for:
- Helping students with attention deficit problems stay on task (i.e. listening lecture)
- Improving performance of students who do not perform well on homework, original compositions, or other assignments.
- Helping students for whom English is not the first language build literacy skills and or improve in academic areas.
- Meeting the needs of a wide range of students (especially students with learning difficulties and students who are accelerated).
- Building positive relationships with a student is very turned off to school.
- Adapting instruction and or assessment for an individual student with identified needs.
Helping students see issues from different points of view.
III. Student Motivation and the Learning Environment

A. Theoretical foundations of human motivation and behavior.
   - Abraham Maslow
   - Albert Bandura
   - B.F. Skinner

B. Important Terms that relate to motivation and behavior.
   **Hierarchy of needs** – http://web.utk.edu/~gwynne/maslow.HTM

**Physiological Needs** - These are biological needs. They consist of needs for oxygen, food, water, and a relatively constant body temperature. They are the strongest needs because if a person were deprived of all needs, the physiological ones would come first in the person's search for satisfaction.

**Safety Needs** - When all physiological needs are satisfied and are no longer controlling thoughts and behaviors, the needs for security can become active. Adults have little awareness of their security needs except in times of emergency or periods of disorganization in the social structure (such as widespread rioting). Children often display the signs of insecurity and the need to be safe.

**Needs of Love, Affection and Belongingness** - When the needs for safety and for physiological well-being are satisfied, the next class of needs for love, affection and belongingness can emerge. Maslow states that people seek to overcome feelings of loneliness and alienation. This involves both giving and receiving love, affection and the sense of belonging.

**Needs for Esteem** - When the first three classes of needs are satisfied, the needs for esteem can become dominant. These involve needs for both self-esteem and for the esteem a person gets from others. Humans have a need for a stable, firmly based, high level of self-respect, and respect from others. When these needs are satisfied, the person feels self-confident and valuable as a person in the world. When these needs are frustrated, the person feels inferior, weak, helpless and worthless.

**Needs for Self-Actualization** - When all of the foregoing needs are satisfied, then and only then are the needs for self-actualization activated. Maslow describes self-actualization as a person's need to be and do that which the person was "born to do." "A musician must make music, an artist must paint, and a poet must write." These needs make themselves felt in signs of restlessness. The person feels on edge, tense, lacking something, in short, restless. If a person is hungry, unsafe, not loved or accepted, or lacking self-esteem, it is very easy to know what the person is restless about. It is not always clear what a person wants when there is a need for self-actualization.

**Correlational and casual relationships** –

**Intrinsic motivation** – Motivations in learning affect the pupil, and every pupil immediately brings some level of personal motivations into the class setting. These are
Intrinsic motivations to participate and to learn, and these motivations refer to the innate motives of a person to engage in an endeavor or learning experience. An activity is intrinsically motivating when no benefit or advantage is realized except for the interest that the activity alone brings to the person. An intrinsic learning motivation, therefore, encourages an inherent educational response in the pupil. A few examples of intrinsic motivations for education are a pupil's personal interest, ambition, freedom of choice, and desire to learn.

**Extrinsic Motivation** – Extrinsic motivation refers to motives forced on a person from without. An external motivation aids a pupil's desire to perform in the learning process, but this desire is not related to the inherent needs or interests of the student. Neither is the desire related to the importance of the educational fact. Some examples of extrinsic motivations are rote memorization, testing, or grading. To some degree, both intrinsic and extrinsic learning motivations are necessary to the learning process; however, the conditions surrounding and timing of their use will be crucial to the success of effecting continual learning and life change in the pupil.

**Learned helplessness** - In the 1960’s, a group of researchers observed a phenomenon they called learned helplessness. In a controlled study, they used electric shocks when dogs tried to leave their cage. Later the dogs were provided a way out, but they made no effort to escape. Apparently, they had learned that they were helpless. The fact that learning disabled children may become learned helpless in academic settings has been supported by numerous studies. Continual exposure to academic failure has been shown to contribute to learned helplessness, withdrawal, unwillingness to approach new tasks, and a lack of persistence. Like the dogs in the study, they may apply this maladaptive behavior to new situations where they are capable of academic success, but think their efforts are useless.

Other factors have been shown to contribute to this learned academic helplessness. Grouping students with a variety of disabilities under the tutelage of one teacher with generic training, excessive use of external reinforcement, lack of early identification of learning disabilities, a belief in a fixed static intelligence and a lack of reward for individual effort versus achievement are all important issues to consider.

[www.ldonline.org](http://www.ldonline.org)

**Self-efficacy** – is the belief in one's capabilities to organize and execute the sources of action required to manage prospective situations. (Bandura)

[http://www.emory.edu/EDUCATION/mfp/effpage.html](http://www.emory.edu/EDUCATION/mfp/effpage.html)

**Operant Conditioning** - The theory of B.F. Skinner is based upon the idea that learning is a function of change in overt behavior. Changes in behavior are the result of an individual's response to events (stimuli) that occur in the environment. A response produces a consequence such as defining a word, hitting a ball, or solving a math problem. When a particular Stimulus-Response (S-R) pattern is reinforced (rewarded), the individual is conditioned to respond. The distinctive characteristic of operant conditioning relative to previous forms of behaviorism (e.g., Thorndike, Hull) is that the
organism can emit responses instead of only eliciting response due to an external stimulus.

Reinforcement is the key element in Skinner's S-R theory. A reinforcer is anything that strengthens the desired response. It could be verbal praise, a good grade or a feeling of increased accomplishment or satisfaction. The theory also covers negative reinforcers -- any stimulus that results in the increased frequency of a response when it is withdrawn (different from aversive stimuli -- punishment -- which result in reduced responses). A great deal of attention was given to schedules of reinforcement (e.g. interval versus ratio) and their effects on establishing and maintaining behavior.

One of the distinctive aspects of Skinner's theory is that it attempted to provide behavioral explanations for a broad range of cognitive phenomena. For example, Skinner explained drive (motivation) in terms of deprivation and reinforcement schedules. Skinner (1957) tried to account for verbal learning and language within the operant conditioning paradigm, although this effort was strongly rejected by linguists and psycholinguists. Skinner (1971) deals with the issue of free will and social control. http://tip.psychology.org/skinner.html

**Reinforcement** - The one theory of influence almost everyone knows about is this one. And if you know only one approach, this can be good candidate. It works in a variety of situations, it can be simply applied, and it has just a few basic ideas. In fact, reinforcement theory boils down to a Main Point: Consequences influence behavior.

Think about that for a moment. Consequences influence behavior. It means that people do things because they know other things will follow. Thus, depending upon the type of consequence that follows, people will produce some behaviors and avoid others. Pretty simple. Pretty realistic, too. Reinforcement theory (consequences influence behavior) makes sense.

http://www.as.wvu.edu/~sbb/comm221/chapters/rfc.htm

**Positive reinforcement** – The increase in the probability of a behavior being repeated following the administration of a pleasurable stimulus, referred to as a reward.

http://www.wwnorton.com/psychsci/ch6_overview.htm

**Negative reinforcement** – The increase in the probability of a behavior being repeated through the removal of an aversive stimulus.

http://www.wwnorton.com/psychsci/ch6_overview.htm

**Shaping successive approximation** – The practice of shaping (also known as "successive approximation") is not, in and of itself, a method for managing inappropriate behavior. Instead, it is a method that assists you in setting goals for the behavior of a certain student. Shaping will provide guidance and direction for your behavior change program, and will help you assess its effectiveness. It can assist you in changing an aberrant behavior or creating an appropriate behavior that is not yet in the student's repertoire.
Shaping is used when you want the student to engage in a certain desirable behavior that is, at present, infrequently or never displayed by him/her. If you were to wait for the student to show this behavior so that you could reward him/her, you might wait a very long time. Shaping allows you to build this desired behavior in steps and reward those behaviors that come progressively closer to the one you have selected as the final goal. As the student masters each sub step, you require that s/he move to the next increment in order to receive an award or reinforcement.
http://maxweber.hunter.cuny.edu/pub/eres/EDSPC715_MCI TYRE/Shaping.html

**Extinction** - A process in which the conditioned response is weakened when the conditioned stimulus is repeated without the unconditioned stimulus.
http://www.wwnorton.com/psychsci/ch6_overview.htm

**Punishment** - A stimulus that occurs following a response that decreases the likelihood that the response will be repeated.
http://www.wwnorton.com/psychsci/ch6_overview.htm

**Continuous Reinforcement** - A type of learning in which the desired behavior is reinforced each time it occurs.
http://www.wwnorton.com/psychsci/ch6_overview.htm

**Intermittent reinforcement** - A type of learning in which behavior is reinforced intermittently.
http://www.wwnorton.com/psychsci/ch6_overview.htm

C. How knowledge of human motivation and behavior should influence strategies for organizing and supporting individual and group work in the classroom.

D. Factors and situations that are likely to promote or diminish students motivation to learn; how to help students become self motivated.

E. Principles of effective classroom management and strategies to promote positive relationships, cooperation, and purposeful learning including:
- Establishing daily procedures and routines
- Establishing classroom rules, punishments, and rewards
- Giving timely feedback
- Maintaining accurate records
- Communicating with parents and caregivers
- Using objective behavior descriptions
- Responding to student misbehavior
- Arranging of classroom space
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- Pacing and structuring the lesson

Key Ideas and Questions

Go beyond memorization of definitions try to apply terms to the theories behind them and think of application in the teaching situation.

Why is each of the above a good practice for teachers to cultivate and maintain in terms of its effect on student learning? How can each help you to be more effective on student learning? What are the characteristics of effective implementation of each of these practices? How can you structure your instructional planning to include these?

What are the choices a teacher has in each of the last three bulleted items to the left? What are the most important considerations when making decisions about each one?

Pacing and structuring of a lesson is a particularly challenging aspect of instruction. What factors can change the pace and structure of a lesson as it unfolds? How can you prepare in advance for adjusting the pace and the structure of a lesson for each of these factors?

When responding to a case study, you will be asked to perform the following kinds of tasks related to the area of student motivation and the learning environment.

- **Propose a Strategy**
  - Revising a lesson that is described in the case for improving student engagement and motivation
  - Improving motivation through means other than negative strategies described in the case.
  - Addressing behavioral problems that are described in the case

Identify and describe a strength or weakness in a lesson plan or instructional strategy described in the case with the intention of building a positive classroom environment.
INSTRUCTION AND ASSESSMENT

I. Instructional Strategies

A. The Major Cognitive Processes associated with student learning, including:

- **Critical Thinking** - The disciplined ability and willingness to assess evidence and claims, to seek a breadth of contradicting as well as confirming information, to make objective judgments on the basis of well supported reasons as a guide to belief and action, and to monitor one’s thinking while doing so (metacognition). The thinking process that is appropriate for critical thinking depends on the knowledge domain (e.g.: scientific, mathematical, historical, anthropological, economic, philosophical, moral) but the universal criteria are: clarity, accuracy, precision, consistency, relevance, sound empirical evidence, good reasons, depth, breadth and fairness.

- **Creative Thinking** - Specific thought processes which improve the ability to be creative. Being in an optimal state of mind for generating new ideas. To think deliberately in ways that improve the likelihood of new thoughts occurring. To maximize the ability of the brain to think of new ideas. The ability to think of original, diverse and elaborate ideas. A series of mental actions which produce changes and developments of thought. The process of exploring multiple avenues of actions or thoughts. (Sometimes called divergent thinking because thought patterns and areas of belief are expanded.)

- **Higher Order Thinking** - Higher-order thinking essentially means thinking that takes place in the higher-levels of the hierarchy of cognitive processing. Bloom’s Taxonomy is the most widely accepted hierarchical arrangement of this sort in education and it can be viewed as a continuum of thinking skills starting with knowledge-level thinking and moving eventually to evaluation-level of thinking. A common example, used by Dr. Chuck Welderhold of the application of the major categories in Bloom’s Taxonomy, is show below, applying the taxonomy to the Pledge of Allegiance:

  Knowledge statements ask the student to recite the pledge. Example: “Say the pledge.”

  Comprehension statements ask the student to explain the meaning of words contained in the pledge. Example: “Explain what indivisible, liberty, and justice mean.”

  Application statements ask the student to apply understandings. Example: “Create your own pledge to something you believe in.”

  Analysis statements ask the student to interpret word meanings in relation to context. Example: “Discuss the meaning of ‘and to the Republic for which it stands’ in terms of its importance to the pledge.”

  Synthesis statements ask the student to apply concepts in a new setting. Example: “Write a contract between yourself and a friend that includes an allegiance to a symbol that stands for something you both believe in.”

  Evaluation statements ask the student to judge the relative merits of the content and concepts contained in the subject. Example: “Describe the
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purpose of the pledge and assess how well it achieves that purpose.
Suggest improvements."

When we promote higher-order thinking then, we are simply promoting thinking, along
with the teaching methodologies that promote such thinking, that takes place at the
higher levels of the hierarchy just provided, notably application, analysis, synthesis, and
evaluation.

Critical/creative/constructive thinking is closely related to higher-order thinking; they
are actually inseparable. Critical/creative/constructive thinking simply means thinking
processes that progress upward in the given direction. First one critically analyzes the
knowledge, information, or situation. Then they creatively consider possible next-step
options, and then finally, they construct a new product, decision, direction, or value. The
evaluation step listed above with the Pledge of Allegiance would require this sort of
thinking.

• Inductive and Deductive Thinking –
  Inductive - from the specific instance to the general theory
  Deductive - from the general theory to predict specific instances

• Problem Structuring and Problem Solving - People differ in the manner they
gather, store, and process information when solving a problem. Students should
possess a wide variety of problem solving styles and temperaments, including
Logical Problem Solvers: spatial thinkers who tend to use linear methods. They
set a specific goal, determine the steps necessary to achieve that goal, and then
embark on the effort to accomplish those steps.

  Intuitive Problem Solvers: temporal thinkers who tend to holistic methods. They
get a sense of the way they want things to be, determine how things need to be
balanced to bring about those changes, and then make adjustments to create that
balance.

  Flexible Problem Solvers: use both logical and intuitive methods readily.

Some students possess obstacles that impede the problem solving process and often
lead to an inability to solve problems correctly. Cognitive psychologists, who study the
mental processes associated with processing and understanding information, have
identified very common obstacles to problem solving. These obstacles include:

  Confirmation Bias: Confirmation Bias is the tendency to search for only the
information that supports our ideas. Our initial perceptions and ideas about
a problem often shape the search process by which we evaluate these ideas. It is
important to maintain objectivity in evaluating ideas so that we are not biased
toward our initial perceptions.

Possible Solutions
*Consider alternative hypotheses- view the problem from different perspectives.
*Look for evidence to disprove your ideas. Showing an idea is incorrect is every bit as important as showing an idea is correct.
*Maintain objectivity in evaluating ideas to minimize personal bias.
*Draw conclusions based upon the evidence, not upon your personal beliefs.

Insufficiency of Hypotheses. Often when solving problems, a solver seizes upon the first explanation that comes to mind and stops thinking about the problem. This difficulty is related to confirmation bias, but reflects insufficient thought applied to a problem. Many times, the immediate answer is sufficient. Other times, however, only a careful analysis of a situation beyond the immediate response is necessary to ensure a correct solution.

Possible Solutions

*Develop alternative ideas, rather than seizing upon the first idea as the solution.
*Spend time thinking about the issues- allow time for reflection and incubation.
*Avoid framing the problem so that only one idea emerges.

Fixation is the inability to see a problem from a fresh perspective. Again, our initial perceptions and structuring of a problem often determine the approaches we use to solve that problem. Structuring a problem incorrectly is a prime contributor to the inability to solve a problem correctly. The adage to see a problem with "fresh eyes" is a statement of the importance of viewing a problem from different perspectives.

Two examples of fixation are mental set and functional fixedness. A mental set is the tendency to approach a new problem with the same approach that worked previously for different problems. While part of learning is developing effective strategies for dealing with problems, the automatic or rote application of a strategy to a problem can lead a person down the wrong path and impede problem solving. Much of effective problem solving lies in knowing which approach to use to solve the problem. Functional fixedness is the tendency to view physical objects in terms of their traditional uses. By doing so, we greatly limit the possibilities for creative uses of objects in nontraditional ways. For example, a hammer not only can be used for driving or removing nails, but also serves as an effective paperweight, nutcracker, pendulum weight, or murder weapon!

Possible Solutions

*See the problem with "fresh eyes"- allow time for reflection and incubation.
*Consider alternative hypotheses- view the problem from different perspectives.
*Focus on other issues, then return to the original problem. Time away from a problem allows one to forget incorrect solutions and focus on developing new ideas.

Other Obstacles. Problem solving can be impaired by biases of personal beliefs, a misunderstanding of information relevant to solving problems, and overconfidence. The
solution is to study a problem objectively with all available accurate information and use objective reasoning to achieve a reasonable, sound decision.

Possible Solutions

*Be sure you understand the problem and what constitutes a solution.
*Obtain as much accurate and comprehensive information from unbiased sources as possible.
*Maintain objectivity in evaluating ideas to minimize personal bias.
*Assess your decisions critically. Be able to defend your ideas.
*Be sure your decision is reasonable and fits the available information.

- **Memorization** - Learning so as to be able to remember verbatim; "the actor's memorization of his lines" (commital to memory, memorization).

B. Major Categories of instructional strategies, including:

- **Cooperative Learning** - A successful teaching strategy in which small teams, each with students of different levels of ability, use a variety of learning activities to improve their understanding of a subject. Each member of a team is responsible not only for learning what is taught but also for helping teammates learn, thus creating an atmosphere of achievement.

- **Direct Instruction** - An instructional approach to academic subjects that emphasizes the use of carefully sequenced steps that include demonstration, modeling, guided practice, and independent application.

- **Discovery Learning** - Discovery learning emphasizes what Bruner (1960, 1966) calls a hypothetical mode of teaching/learning as opposed to a more didactic mode. Discovery learning encourages students to ask questions and formulate their own tentative answers, and to deduce general principles from practical examples or experience.

- **Whole-group instruction** -

- **Independent Study** - Academic work chosen or designed by the student with the approval of the department(s) concerned, under an instructor's supervision. This work is usually undertaken outside of the regular classroom structure.

- **Interdisciplinary Instruction** - A knowledge view and curriculum approach that consciously applies methodology and language from more than one discipline to examine a central theme, issue, problem, topic, or experience. [http://www.people.virginia.edu/~tgt3e/skies/interdisc.html](http://www.people.virginia.edu/~tgt3e/skies/interdisc.html)

- **Concept Mapping** - Concept mapping is a general method that can be used to help any individual or group to describe their ideas about some topic in a pictorial form.
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There are several different types of methods that all currently go by names like "concept mapping", "mental mapping" or "concept webbing." All of them are similar in that they result in a picture of someone's ideas. But the kind of concept mapping I want to describe here is different in a number of important ways. First, it is primarily a group process and so it is especially well suited for situations where teams or groups of stakeholders have to work together. The other methods work primarily with individuals. Second, it uses a very structured facilitated approach. There are specific steps that are followed by a trained facilitator in helping a group to articulate its ideas and understand them more clearly. Third, the core of concept mapping consists of several state-of-the-art multivariate statistical methods that analyze the input from all of the individuals and yields an aggregate group product. And fourth, the method requires the use of specialized computer programs that can handle the data from this type of process and accomplish the correct analysis and mapping procedures.

- Inquiry Method - method of involving students where the students pose the questions to be investigated and come up with ways to answer the questions they have posed.

- Questioning - a request for information, showing curiosity.

Key Questions

What are some specific instructional goals in a particular content area that would be associated with each of these cognitive processes?

How are these cognitive processes connected with the developmental level of students?

How are these processes different from each other?

What are some ways that teachers can stimulate each of these cognitive processes in a lesson?

What are some of the primary advantages of each of these strategies? In general terms, describe the kinds of situations or the kinds of goals and objectives for which each of these strategies is appropriate. What kinds of information about students' learning styles and achievement levels does each of these offer? When will you NOT use a particular instructional strategy?

C. Principles techniques and methods associated with various instructional strategies, including:

- Direct Instruction
  - Madeline Hunter's "Effective Teaching Model"
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In the past twenty years, research on teaching has made significant strides in identifying teaching behaviors associated with high student achievement (Brophy and Good 1986; Rosenshine and Stevens 1986). However, effective instruction is not just good teaching. If it were, we could probably find the best lecturers, make videotapes of their lessons, and show them to students (see Slavin 1994). The components of this model are as follows:

1. Quality of Instruction: The degree to which information or skills are presented so that students can easily learn them. Quality of instruction is largely a product of the quality of the curriculum and of the lesson presentation itself.
2. Appropriate Levels of Instruction: The degree to which the teacher makes sure that students are ready to learn a new lesson (that is, they have the necessary skills and knowledge to learn it) but have not already learned the lesson. In other words, the level of instruction is appropriate when a lesson is neither neither too difficult nor too easy for students.
3. Incentive: The degree to which the teacher makes sure that students are motivated to work on instructional tasks and to learn the material being presented.
4. Time: The degree to which students are given enough time to learn the material being taught.

- David Ausubel's "Advance Organizers"

David Ausubel is a cognitive psychologist who studied learning theory. Ausubel is credited with the learning theory of advanced organizers. This theory is easily applicable to second language acquisition, but transcends a singular application, to application across educational domains.

Ausubel, along instructional scientists Robert Gagné, Leslie Briggs, David Merrill, Albert Bandura, Benjamin Bloom, Walter Dick, and others developed the systems approach which utilizes research on the conditions of learning required for people to achieve clearly defined performance outcomes. The model is based upon and has grown out of a thorough understanding of learning theory and research.
Ausubel believes that meaningful learning is crucial for classroom instruction. Meaningful learning, according to Ausubel, entails new knowledge that relates to what one already knows and that can easily retained and applied.

Advance Organizer entails the use of introductory materials with a high level of generality that introduce new material and facilitate learning by providing an "anchoring idea" to which the new idea can be attached (online). Cognitive theorists believe that it is essential to relate new knowledge to existing information learned. Teachers can facilitate learning by organizing information presented so that new concepts are easily relatable to concepts already learned. Examples of devices that may be used include: pictures, titles of stories, reviews of previously learned concepts, short video segments, a paradigm, a grammar rule, etc. (direct quote from David Ausubel's Cognitive Learning Theory).
Ausubel broke down the process of learning to three steps: what will the person learn, what the person wants to learn, and what did the person learn?

Ausubel, along with McLaughlin and Ellis, contend that mental structure or organization of knowledge highly influences learning. These theorists grounded their research on the work of Jean Piaget. Piaget believed that people
actively "organize experience" (online quote from Omaggio, p. 55). New information must be integrated into the mental structure to be learned. Human learning entails strategies for thinking, understanding, remembering and producing language. Language proficiency depends on understanding, integrating, organizing, practicing, and automizing sub skills needed to communicate. Restructuring (reorganizing existing mental structure to accommodate new knowledge) and automatization (the routine performance of a skill or sub skill without thinking about it) are central to developing language proficiency (pp. 54-59).

http://www.coe.ufl.edu/webtech/GreatIdeas/pages/peoplepage/ausabel.htm

**Mastery Learning** – Bloom believes, and through research has demonstrated, that the vast majority of students can master the curriculum. The key is a change in teaching methods. Mastery learning includes subject instruction, a "pre-test" to determine need for re-teaching, re-teaching of missed concepts using traditional instruction and peer collaboration, and a final test.

http://www.dean.usma.edu/math/activities/cape/Constructivism/501bloom.htm

**Demonstration**

**Mnemonics** - The art of memory; a system of precepts and rules intended to assist the memory; artificial memory.

**Note Taking** –

**Outlining –**

**Use of Visual Aids** -

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**Student-Centered Models**

**Inquiry Models** - J. Richard Suchman, the originator of an inquiry teaching program that was widely used throughout the United States once said that "inquiry is the way people learn when they're left alone." To Suchman, inquiry is a natural way that human beings learn about their environment. Think for moment about a very young child left in a play yard with objects free to explore. The child, without any coaxing will begin to explore the objects by throwing, touching, pulling, banging them, and trying to take them apart. The child learns about the objects, and how they interact by exploring them, by developing his or her own ideas about them— in short learning about them by inquiry. Many authors have discussed the nature of inquiry and have used words such as inductive thinking, creative thinking, discovery learning, the scientific method and the like. To many, the essence of inquiry can traced to John Dewey.
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Dewey proposed that inquiry is the "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends." To Dewey the grounding of "any belief" occurs through inquiry processes: reason, evidence, inference and generalization. Recently, science educations have proposed various lists of inquiry process. One such list includes: observing, measuring, predicting, inferring, using numbers, using space-time relationships, defining operationally, formulating hypotheses, interpreting data, controlling variables, experimenting and communicating.

http://scied.gsu.edu/Hassard/mos/7.4.html

Discovery Learning - Discovery Learning is an inquiry-based learning method. The concept of discovery learning has appeared numerous times throughout history as a part of the educational philosophy of many great philosophers particularly Rousseau, Pestalozzi and Dewey. "There is an intimate and necessary relation between the processes of actual experience and education" wrote Dewey. It also enjoys the support of learning theorists and psychologists Piaget, Bruner, and Papert. It has enjoyed a few positive swings of the educational-trend pendulum in American education, but it has never received overwhelming acceptance.

Discovery learning takes place most notably in problem solving situations where the learner draws on his own experience and prior knowledge to discover the truths that are to be learned. It is a personal, internal, constructivist-learning environment. Bruner wrote "Emphasis on discovery in learning has precisely the effect on the learner of leading him to be a constructionist, to organize what he is encountering in a manner not only designed to discover regularity and relatedness, but also to avoid the kind of Information drift that fails to keep account of the uses to which information might have to be put."

http://www.nwlink.com/~donclark/hrd/history/discovery.html

Cooperative Learning (pair share, jigsaw, STAD, teams, games, tournaments) WHAT IS IT? Cooperative learning is a successful teaching strategy in which small teams, each with students of different levels of ability, use a variety of learning activities to improve their understanding of a subject. Each member of a team is responsible not only for learning what is taught but also for helping teammates learn, thus creating an atmosphere of achievement.

WHY USE IT? Documented results include improved academic achievement, improved behavior and attendance, increased self-confidence and motivation, and increased liking of school and classmates. Cooperative learning is also relatively easy to implement and is inexpensive.

HOW DOES IT WORK? Here are some typical strategies that can be used with any subject, in almost any grade, and without a special curriculum:
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*Group Investigations* are structured to emphasize higher-order thinking skills such as analysis and evaluation. Students work to produce a group project, which they may have a hand in selecting.

*STAD (Student Teams-Achievement Divisions)* is used in grades 2-12. Students with varying academic abilities are assigned to 4- or 5-member teams in order to study what has been initially taught by the teacher and to help each reach his or her highest level of achievement. Students are then tested individually. Teams earn certificates or other recognition based on the degree to which all team members have progressed over their past records.

*Jigsaw II* is used with narrative material in grades 3-12. Each team member is responsible for learning a specific part of a topic. After meeting with members of other groups, who are "expert" in the same part, the "experts" return to their own groups and present their findings. Team members then are quizzed on all topics. [http://www.ed.gov/pubs/OR/ConsumerGuides/cooplear.html](http://www.ed.gov/pubs/OR/ConsumerGuides/cooplear.html)

**Collaborative Learning** - The concept of collaborative learning, the grouping and pairing of students for the purpose of achieving an academic goal, has been widely researched and advocated throughout the professional literature. The term "collaborative learning" refers to an instruction method in which students at various performance levels work together in small groups toward a common goal. The students are responsible for one another's learning as well as their own. Thus, the success of one student helps other students to be successful. [http://scholar.lib.vt.edu/ejournals/JTE/jte-v7n1/gokhale.jte-v7n1.html](http://scholar.lib.vt.edu/ejournals/JTE/jte-v7n1/gokhale.jte-v7n1.html)

**Discussion Models –**

**Laboratories -**

**Project Based Learning** - Project-based learning (PBL) is a model for classroom activity that shifts away from the classroom practices of short, isolated, teacher-centered lessons and instead emphasizes learning activities that are long-term, interdisciplinary, student-centered, and integrated with real world issues and practices.

One immediate benefit of practicing PBL is the unique way that it can motivate students by engaging them in their own learning. PBL provides opportunities for students to pursue their own interests and questions and make decisions about how they will find answers and solve problems. PBL also provides opportunities for interdisciplinary learning. Students apply and integrate the content of different subject areas at authentic moments in the production process, instead of in isolation or in an artificial setting. PBL helps make learning relevant and useful to students by establishing connections to life outside the classroom, addressing real world concerns, and developing real world skills. Many of the skills learned through PBL are those desired by today's employer, including
the ability to work well with others, make thoughtful decisions, take initiative, and solve complex problems.

In the classroom, PBL provides many unique opportunities for teachers to build relationships with students. Teachers may fill the varied roles of coach, facilitator, and co-learner. Finished products, plans, drafts, and prototypes all make excellent "conversation pieces" around which teachers and students can discuss the learning that is taking place. In the school and beyond, PBL also provides opportunities for teachers to build relationships with each other and with those in the larger community. Student work—which includes documentation of the learning process as well as the students' final projects—can be shared with other teachers, parents, mentors, and the business community who all have a stake in the students' education.

http://pbimm.k12.ca.us/PBLGuide/WhyPBL.html
http://www.4teachers.org/projectbased/

Simulations -

Key Questions

What are some of the examples of appropriate situations for grouping of students heterogeneously? What are some examples for the grouping of students homogeneously? Besides grouping by performance levels, what are other characteristics that should sometimes someone be considered when grouping students?

What is wait time? What does research suggest about wait-time?

How might a teacher promote critical thinking among students in a discussion?

How can a teacher encourage student to student dialogue in a class discussion?

What kinds of classroom management procedures and rules would tend to make class discussion more productive?

How does the developmental level of students affect the way a teacher might handle classroom discussion?

In what kinds of discussions or situations should a teacher name a specific student before asking a question? When is it best not to name a specific student?

D. Instructional Strategies: Methods for enhancing student learning through the use of a variety of resources and materials.

- Computers, Internet resources, web pages, and email
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- Audio-Visual technologies such as videotapes and compact discs.
- Local experts
- Primary documents
- Field Trips
- Libraries
- Service Learning

Key Questions

What should a teacher consider when planning to incorporate various resources into a lesson design?

What are the advantages of these different resources?

When responding to case studies, you will be asked to perform the following kinds of tasks related to the area of instructional planning:

Identify Strengths or Weakness in:
- Specific activities that are described in the case

Propose a Strategy for:
- Searching critical thinking skills in a specific lesson
- Achieving effectiveness with group work in a particular situation
- Helping students stay on task in the situation
- Helping students learn material presented through various media
- Assigning students to group work
- Bringing closure to a lesson that stops abruptly
- Improving student interaction during class discussion
- Addressing a “missed opportunity” during the classroom period
II. Planning Instruction:

A. Techniques for planning instruction to meet curriculum goals, including the incorporation of learning theory, subject matter, curriculum development, and student development.

- National and state learning standards
  - State and local curriculum frameworks
  - State and local curriculum guides
  - Scope and sequence in specific disciplines
  - Units and lessons
  - Behavioral objectives: affective, cognitive, psychomotor
  - Learner objectives and outcomes

B. Techniques for creating effective bridges between curriculum goal and students experiences.

- Modeling
- Guided Practices
- Independent Practice, including homework
- Transitions
- Activating students' prior knowledge
- Anticipating preconceptions
- Encouraging exploration and problems
- Building new skills on those on those perceiving.

Key Questions

Teachers are responsible for connecting scope and sequence frameworks and curriculum goals into classroom lessons and groups of lessons. How does a teacher translate curriculum goals and discipline-specific scope and sequence frameworks into units and lessons plans with objectives, activities, and assessment appropriate for the students being taught? Give an example of a curriculum goal and then write a lesson objective, one activity, and an idea for an assessment of student learning that would accomplish that goal.

How do behavioral objectives and learner objectives and outcomes fit into a teachers planning for units and lessons?

What criterion or criteria does a teacher use to decide on when to use each of these techniques?
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Why is it important for a teacher to plan carefully for transition? What are the risks if transitions are not thought through and executed with care?

Why is each of these actions a principle of effective classroom?

What tools and techniques can a teacher plan to use to accomplish each one?

What strategies can a teacher employ to monitor student understanding as a lesson unfold?

What evidence should the teacher observe in order to whether to re-teach a topic, move more quickly or go back to material previously covered?

When responding to case studies, you will be asked to perform the following kinds of task related to the area of instructional planning:

- Identify and describe a strength and/or weakness in:
  - A unit plan that is described in the case
  - Specific strategies used in the instruction
  - A Sequence of described lessons designed to achieve a goal or set objectives
  - One or more written assignments given to students

- Propose a Strategy for:
  - Meeting what may appear to be conflicting goals or objectives
  - Incorporating activities that will have students draw on their own experiences to understand the instruction
  - Stimulating prior knowledge with the current learning event
III. Assessment Strategies:

A. Measurement theory and Assessment related issues.

Types of assessment:
Standardized tests, norm-referenced or criterion-referenced –

Norm-referenced tests (NRTs) compare a person's score against the scores of a group of people who have already taken the same exam, called the "norming group." When you see scores in the paper which report a school's scores as a percentage -- "the Lincoln school ranked at the 49th percentile" -- or when you see your child's score reported that way -- "Jamal scored at the 63rd percentile" -- the test is usually an NRT.

Most achievement NRTs are multiple-choice tests. Some also include open-ended, short-answer questions. The questions on these tests mainly reflect the content of nationally used textbooks, not the local curriculum. This means that students may be tested on things your local schools or state education department decided were not so important and therefore were not taught.

Commercial, national, norm-referenced "achievement" tests include the California Achievement Test (CAT); Comprehensive Test of Basic Skills (CTBS), which includes the "Terra Nova"; Iowa Test of Basic Skills (ITBS) and Tests of Academic Proficiency (TAP); Metropolitan Achievement Test (MAT); and Stanford Achievement Test (SAT, not to be confused with the college admissions SAT). "IQ," "cognitive ability," "school readiness," and developmental screening tests are also NRTs.

http://www.fairtest.org/facts/nratest.html

Criterion -- Referenced Tests - An assessment where an individual's performance is compared to a specific learning objective or performance standard and not to the performance of other students. Criterion-referenced assessment tells us how well students are performing on specific goals or standards rather than just telling how their performance compares to a norm group of students nationally or locally. In criterion-referenced assessments, it is possible that none, or all, of the examinees will reach a particular goal or performance standard.

http://www.ncrel.org/sdrs/areas/issues/methods/assessment/as8lk3.htm

Achievement tests -- Each state has different achievement tests. Ohio's state testing system is changing. However, many of the new tests will still be high stakes tests because they affect student graduation and school performance ratings. Proficiency tests, which were not based on state standards, are being replaced with achievement tests that are aligned with the new, State Board of Education-approved academic content standards. Further, students in the graduating class of 2007 will be tested, and they will have to pass all five areas of the new Ohio Graduation Tests (OGT), to receive a diploma. The OGT is based on the standards, too.
http://www.ohea.org

Aptitude Tests – An objective test that measures one or more capabilities that involve spatial reasoning, manual dexterity, clerical perception, or other capacities to learn certain behaviors. Aptitude test scores do not rely specifically on knowledge gained but may be enhanced through exposure to like activities.

Structured Observations – For example, here at Miami our structured observations are our field experiences and practicum.

Anecdotal Notes – Usually these are the comments on the report card either positive or negative that accompany the letter grade.

Assessment of prior learning – Assessment of Prior Learning (APL) is a process, which uses a variety of tools to help learners reflect on, identify, articulate and demonstrate past learning. This has been acquired through study, work and other life experiences and is not recognized through formal transfer of credit mechanisms. APL allows the evaluation of past learning against established academic/unit standards so that credit can be awarded and qualifications achieved. http://www.caplinz.ac.nz/

Student Responses –

Portfolios –

Self Evaluation –

Characteristics of assessments:
Validity –

Reliability –

Norm-referenced –

Criterion-referenced –

Mean, Median, Mode –

Sampling Strategy –

Scoring Assessment:
Analytical and Holistic scoring – “Holistic” scoring guides (also known as “rubrics”) typically divide the papers into a set number of levels, usually five or six, and describe the characteristics of papers at each level. The scoring guides used for the English
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Placement Test (EPT), or our own Graduation Writing Test (GWT), are typical examples. The holistic scoring process involves weighing the various factors described in the scoring guide and assigning a score, effectively sorting the papers into piles of similar quality. This type of scoring rubric is often used in large-scale essay tests. “Analytic” scoring guides are designed to rate papers on separate criteria. Where holistic scoring assigns a single score that represents a weighing of all the different factors addressed by the scoring guide, an analytic score might assign a high score to one factor, such as “thesis,” and a lower score to another, such as “grammar and mechanics.” Analytic scoring is slower than holistic, but provides more feedback and is better for diagnosing problems with the writing.

http://www.csupomona.edu/~uwc/non_protect/faculty/ScoringGuide-art.htm

Reporting Assessment results -

Percentile Rank - Contrary to their name, percentile scores have nothing to do with the percentage of questions the student got right. Percentiles, with a low of 1 and a high of 99, show how students compare with the norm group, a statistically reliable sample of students used for making comparisons. A percentile score is the percentage of students your child scored as well as or better than. If a student scores at the 65th percentile, it means that he or she performed as well as or better on the test than 65 percent of the norm group. The 50th percentile is considered average, and the largest percentage of students is clustered between the 40th and 60th percentiles.

Stanines - Stanine "standard nine" scores combine the understandability of percentages with the properties of the normal curve of probability. A scale is created with nine intervals, each interval representing half of a stand deviation. The 5th stanine straddles the midpoint of the distribution, covering the middle 20% of scores. Your child would be scoring at the average or mid-point with a stanine of 5. Therefore, stanine 6,7, and 8 cover the top end of the distribution and 4,3,2, and 1 fall below the mid-point with lower scores. Note that a stanine is not a point on a scale but a relatively broad interval.

http://www.monroe.k12.fl.us/poinciana/what_is_a_stanine.htm

Mastery Levels -- usually the instructor determines these. For example a score of 80 out of 100 could be considered mastery.

Raw Score - A raw score is the number of items answered correctly for a test. These scores are used to derive the other norm-related scores such as percentiles, standard scores, and normal curve equivalents. A raw score by itself has little meaning. They cannot be used to compare student performance across different subject areas or tests.

Key Questions

What are the characteristics, uses, advantages and limitations of each of the above informal and informal types of assessment?
When might you use "holistic scoring"?

Under what circumstances would "anecdotal notes" give a teacher important assessment information?

How might a teacher effectively use student self-evaluations?

What are some examples of informal assessment of prior knowledge that a teacher can easily use when a new topic is introduced?

What kind of assessment information can a teacher gather from student journals?

What is a structured observation in a classroom setting?
COMMUNICATION TECHNIQUES

I. Communication Techniques
   A. Basic, effective verbal and nonverbal communication techniques.
      i. Verbal – talking and questioning
      ii. Nonverbal – listening, nodding, smiling, eye contact, etc.
   B. The effect of cultural and gender differences on communications in the classroom.
   C. Types of communications and interactions that can stimulate discussion in different ways for particular purposes.
      • Probing for learner understanding
      • Helping students articulate their ideas and thinking processes
      • Promoting risk-taking and problem solving
      • Facilitating factual recall
      • Encouraging convergent and divergent thinking
      • Stimulating curiosity
      • Helping students to question
      • Promoting a caring community

Key Questions

What are some ways that a teacher’s raising his or her voice might be interpreted differently by students with different cultural backgrounds?

What are specific examples of gestures and other body language that have different meanings in different cultures? (For example, looking someone directly in the eye, disagreeing openly during a discussion, pointing)

What is an example of a question in a particular context area that probes for understanding?

What is an example of a question that would help a student articulate his or her ideas?

What is an example of a comment a teacher might make that would promote risk-taking? Problem solving?

How would a teacher encourage divergent thinking on a particular topic?

How would a teacher encourage students to question each other and the teacher?

When responding to case studies, you will be asked to perform the following kinds of tasks related to the area of communication:
   Identify and describe a strength and/or weakness in:
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- The teacher's oral or written communication with students (e.g., feedback on assignments, interaction during class)

Propose a strategy for:
- Improving the self-image of a student or the student's sense of responsibility for his or her own learning
- Involving all students in a class discussion in a positive way, showing respect for others
- Helping a student to develop social skills in a specified situation
PROFESSION AND COMMUNITY

I. The Reflective Practitioner

A. Types of resources available for professional development and learning.
   1. Professional literature
   2. Colleagues
   3. Professional associations
   4. Professional development activities

B. Why personal reflection on teaching practices is critical, and approaches that can be used to reflect and evaluate.

II. The Larger Community

A. The role of the school as a resource to the larger community.
B. Factors in the students' environment outside of school (family circumstances, community environments, health and economic conditions) that may influence students' life and learning.
C. Basic strategies for involving parents/guardians and leaders in the community in the educational process
D. Ongoing personal reflection on teaching and learning practices as a basis for making professional decisions.
   * Understand why personal reflection on teaching practices is critical, and approaches that can be used to reflect and evaluate.
      Code of Ethics – www.nea.org
      Advocacy for learners
      Teachers as a resource
E. Develop and utilize active partnerships among teachers, parents/guardians and leaders in the community to support the educational process.
   Shared ownership
   Shared decision making
   Respectful/reciprocal communication
F. Major laws related to students' rights and teacher responsibilities

Equal education
Equal Education Opportunities Act of 1974

Individuals with Disabilities Education Act of 1990 (IDEA) (Public Law 101-476) - is the federal special education law. Each state has written its own regulations to enact IDEA; while they must conform to the federal law, the state laws are much more specific in detail. IDEA establishes requirements and offers funds for special services to all children and youth who qualify, from birth to twenty-one. The law assures to each eligible student:
1. An education that's free and appropriate. "Free" here means at no additional cost. According to IDEA, an appropriate education for a child with a disability is one that is characterized by all of the following:

2. Rights that are specified and protected. The child and family have the right to confidentiality of all records; the right to give or deny permission for any step in the process, from referral to placement; and the right to challenge any decision made about the child if they disagree.

3. A plan designed to meet individual needs. A team of parents and professionals writes a plan of goals and objectives for the child, specifying what services are necessary, where and when they'll be offered, and who will provide them.

4. Placement based on assessment and evaluation. The program of services, along with providers and locations, is the "placement"; it may be decided only after the child's needs have been assessed, or determined.

5. Inclusion with children without disabilities. The "least restrictive environment" is the one where a child's special needs are met in the "regular" program as much as possible.

6. Involvement of parents in all decisions. See # 2 and #3.

7. A range of educational and related services. A combination of programs and services is designed to lessen the effect of the disability on the child's development or education. It may include occupational, physical, or speech/language therapy, assistive technology, and counseling, among others.

   **This act reauthorizes the Education for All Handicapped Children Act.**

**1997 Amendments to the Individuals with Disabilities Education Act (Public Law 105-17)**

- These amendments add a number of significant provisions to IDEA and restructure the law.
- A number of changes in the IEP and participation of students with disabilities in state and district wide assessments are mandated.
- Significant provisions on mediation of disputes and discipline of students with disabilities are added.
- Funding of special education is restructured.

**Appropriate education for students with special needs**

**Section 504 of the Rehabilitation Act of 1973 (Public Law 93-112)** - targets institutions that receive federal financial assistance for any of its programs or activities. These institutions are required not to exclude, deny benefits of, or discriminate against any qualified individual with a disability. Typical compliance requirements include making programs accessible, communicating effectively with individuals with hearing or vision disabilities, and making new construction or significant alterations accessible.

- It is illegal to deny participation in activities or benefits of programs, or to in any way discriminate against a person with a disability solely because of the disability.
- Individuals with disabilities must have equal access to programs and services.
- Auxiliary aids must be provided to individuals with impaired speaking, manual, or sensory skills.
Education for All Handicapped Children Act of 1975 (Public Law 94-142)
- Students with disabilities have the right to a free, appropriate public education.
- Schools must have on file an individualized education program for each student determined to be eligible for services under the act.
- Parents have the right to inspect school records on their children. When changes are made in a student’s educational placement or program, parents must be informed. Parents have the right to challenge what is in records or to challenge changes in placement.
- Students with disabilities have the right to be educated in the least restrictive educational environment.
- Students with disabilities must be assessed in ways that are considered fair and nondiscriminatory. They have specific protections.

1986 Amendments to the Education for All Handicapped Children Act (Public Law 101-476)
- All rights of the Education for All Handicapped Children Act are extended to preschoolers with disabilities.
- Each school district must conduct a multidisciplinary assessment and develop an individualized family service plan for each preschool child with a disability.

Americans with Disabilities Act of 1992 (Public Law 101-336)- The Americans with Disabilities Act (ADA) provides comprehensive civil rights protection and is designed to remove barriers which prevent persons with disabilities from accessing the same educational and employment opportunities as persons without disabilities. The Americans with Disabilities Act also prohibits discrimination against a qualified individual with a disability with regard to admission to educational institutions.
- Discrimination on the basis of disability is prohibited in employment, services rendered by state and local governments, places of public accommodation, transportation, and telecommunication services.

2001 Elementary and Secondary Education Act (No Child Left Behind Act; Public Law 107-110)
- Targeted Resources are provided to help ensure that disadvantaged students have access to a quality public education.
- The act aims to maximize student learning, provide for teacher development, and enhance school system capacity.
- This act funds Title 1.

The Family Educational Rights and Privacy Act (FERPA) (20 U.S.C. § 1232g; 34 CFR Part 99) - Is a Federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education.

FERPA gives parents certain rights with respect to their children's education records. These rights transfer to the student when he or she reaches the age of 18 or attends a
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school beyond the high school level. Students to whom the rights have transferred are "eligible students." Parents or eligible students have the right to inspect and review the student’s education records maintained by the school. Schools are not required to provide copies of records unless, for reasons such as great distance, it is impossible for parents or eligible students to review the records. Schools may charge a fee for copies. Parents or eligible students have the right to request that a school correct records that they believe to be inaccurate or misleading. If the school decides not to amend the record, the parent or eligible student then has the right to a formal hearing. After the hearing, if the school still decides not to amend the record, the parent or eligible student has the right to place a statement with the record setting forth his or her view about the contested information. Generally, schools must have written permission from the parent or eligible student in order to release any information from a student's education record. However, FERPA allows schools to disclose those records, without consent, to the following parties or under the following conditions (34 CFR § 99.31):

* School officials with legitimate educational interest;
* Other schools to which a student is transferring;
* Specified officials for audit or evaluation purposes;
* Appropriate officials in connection with financial aid to a student;
* Organizations conducting certain studies for or on behalf of the school;
* Accrediting organizations;
* To comply with a judicial order or lawfully issued subpoena;
* Appropriate officials in cases of health and safety emergencies; and
* State and local authorities, within a juvenile justice system, pursuant to specific State law.

Schools may disclose, without consent, "directory" information such as a student’s name, address, telephone number, date and place of birth, honors and awards, and dates of attendance. However, schools must tell parents and eligible students about directory Information and allow parents and eligible students a reasonable amount of time to request that the school not disclose directory information about them. Schools must notify parents and eligible students annually of their rights under FERPA. The actual means of notification (special letter, inclusion in a PTA bulletin, student handbook, or newspaper article) is left to the discretion of each school.

Confidentiality and privacy
• The Individuals with Disabilities Education Act — See section #2 listed above.
• A general ethical principle held by most professional organizations is that confidentiality may be broken only when there is clear and imminent danger to an individual or to society.

Appropriate treatment of students
• Section 504 of the Rehabilitation Act of 1973
• Americans with Disabilities Act of 1990

Reporting in situations related to possible child abuse
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- Depends on your state and school district
- Most schools offer training in the detection of child abuse

Key Questions:

Be able to read, understand, and apply articles and books about current research, views, ideas, and debates regarding best teaching practices.

What types of help or learning can each of these resources offer a new teacher?

What are the titles of two professional journals of particular interest to you in your chosen field of teaching that you might subscribe to?

What is/are the professional association(s) that offers professional meetings and publications and opportunities for collaborative conversation with other teachers?

What might be a professional development plan for the first two years of a teacher’s career that would support his or her learning and growth?

When responding to case studies, you will be asked to perform the following kinds of tasks related to the area of the larger community:

- Identify and describe a strength and/or weakness in:
  - the communication with parents used by a teacher described in the case
  - the approach used by a teacher described in the case to involve parents

- Propose a strategy for:
  - using parent volunteers during a lesson that is described in a case
  - involving all parents or other caregivers in helping students in areas specified in the case
  - helping the family of a student described in the case work with the student’s learning or other needs