CONTINUING EDUCATION

APPROVED FOR .5 CONTINUING EDUCATION UNITS*

HOW IT WORKS: Kindergarten through Grade 12 teachers in the North American Division are eligible for credit toward denominational recertification for successful completion of a test on the content of this article. The test does not provide college credit or credit toward state or regional teacher certification.

Learning Theories and the Christian Teacher

Part I

By M. D. Hodgen

Unit Objectives

This Continuing Education Unit provides text and review materials, which when mastered, will allow you to:

1. Describe four important views of how learning takes place. The four views are: operant conditioning; cognitive theory; Gagné's types of learning; humanistic learning theory.
2. Describe applications of these theories to classroom situations involving motivation, recall, and discipline.
3. Describe and assess the view of persons implicit in each view studied.

Introduction

The phrase *theories of learning* scares some teachers until they discover that having a theory about how children learn is like having a road map when you go on a journey: Both assure you that you'll probably reach your goal.

Theories of learning help us make sense out of seemingly miscellaneous information. An adult watches a child struggle unsuccessfully in random efforts to solve a puzzle and theorizes that the child doesn't have the concept needed to find the solution. The adult thus makes sense out of observed behavior by means of his theory. He might also use other theories—about age or interest or reinforcement; each would help him to understand the situation.

Theories of learning allow us to make predictions. For example, having a theory (naive though it may be) about Windy-Day-Behavior-in-Grade-Six, or Interest-in-Algebra-During-Thunderstorms, a teacher is able to predict behavior for a particular day of wind or thunder, and to do so with a degree of accuracy relative to the merits of his theory.

Is there a theory about learning that tells all, that is obviously superior to all others—a full and complete explanation of learning? No, there isn't. Not only is human learning very complex, but Christian beliefs about freedom of choice and about eternity combine to imply that a simple or

* Approved by the North American Division Office of Education for 0.5 Continuing Education Units Credit or 5 contact hours.

Dean of the Graduate School
Loma Linda University
Loma Linda, California

reductionist theory that claims universal application is almost certain to be suspect. Present theories can certainly be improved, but the quest for *the* theory of all learning is probably doomed to disappointment.

Defining Learning

More should be said here about the definition of learning. Even though it is a complex process, a fairly clear definition is possible. Many experts define learning as *any relatively permanent change in behavior that is a consequence of experience.*

Let us look more closely at this definition. First, the phrase *relatively permanent* does not mean that no forgetting takes place, or that learning has taken place because the student performs correctly on the first trial. Teachers (and most psychologists) agree that to be able to say that learning has occurred there must be enough correct responses over a period of time to justify the assertion, "You seem to have learned it."

The *change in behavior* can be observed. Teachers can't assume student knowledge or ability to perform from being told by the student that he/she knows the subject or can do the task; they need visible or audible evidence: to see the word written correctly, the apparatus set up in good order, or to hear the steps in the process enumerated in sequence. The above definition demands measurable evidence that learning has taken place.

A Goal-oriented Definition

Many things cause behavior change. Fatigue or hunger are two that have relatively short-term effects; growth and development are two that have more long-term effects in changing the ways we act. However, we don't say that the above changes cause learning. We reserve the word *learning* for changes that result from experience. In this essay we are mainly interested in intentional learning rather than with accidental or inadvertent learning. The intent may come from the school and the teacher, with the learner being the receiver; or the intent may be with the student, aided by school and teacher. We should stress that teachers define learning somewhat more narrowly than many psychologists, who include *any* relatively permanent change in behavior that results from experience. Teachers are, therefore, somewhat more goal- and value-oriented in defining learning within school, church, and community expectations. Teachers almost always imply "learned-what-we-had-in-mind-to-be-learned" when they say "learned," and that has important implications for curriculum planning and for evaluation.

How Does Learning Happen?

Let us now look at several currently important answers to this question. Keep in mind through the four subsections that we see only the *results* of learning, *not* the learning process itself. We see changes in behavior, and thus assume that something called learning has occurred or is occurring. Remember also that there is impressive scientific support for all of the points of view presented here. Further, keep in mind that all the theories described advocate some degree of teacher guidance for the learner, even though there is a considerable range of opinion about how much guidance is necessary. At one extreme we have a teacher dominating the learning process; at the other extreme is an almost wholly learner-selected learning process. Last, remember that answers to the question, "How does learning take place?" always imply a view of the nature of persons: This cannot be avoided, because learning is so important to being a person.

Accomplishing Learning Through Behavior Modification

Learning takes place as behavior is modified by response reinforcement. A second-grade pupil gets a warm smile and a gentle pat on the head for having walked quietly in the hall. A ninth-grade girl is praised for a perfect score on an auto-mechanics test. A fifth grader chides another for having a homework assignment ready to hand in early. Each of these is an example of response reinforcement, and each reinforcement, our theory says, will change behavior to some degree, bringing about that relatively permanent change in behavior called learning. But it is not as simple as that. If it were, we would simply have to provide reinforcement for evident behavior. Is there value in different kinds of reinforcement? How do we get the desired behavior so that we can reinforce it? How does the teacher compete to remove undesired responses, or to prevent the reinforcements of undesired behavior? These and other questions need to be answered so that we can have a clearer understanding of the first theory of how learning takes place.

Almost everyone who has taken a college course in psychology remembers Pavlov with his dogs, as well as B. F. Skinner with his pigeons. Both of these pioneer students of learning are important to this view of learning. Ivan Pavlov (1849-1936) is remembered for his thirty years of careful experimentation on what was called *conditioned reflexes,* a concept applied to learning.

Of more interest now is the work of B. F. Skinner (1904-), which grows out of the vast amounts of investigation stimulated by Pavlov and many others interested in this way of explaining learning. Skinner has devoted most of his efforts to studying and reporting scientifically on what he calls *operant learning.* In its simplest

statement, operant learning occurs when a selected response is reinforced. It is called *operant* because the response operates on, or works in relation to, the learner's environment. For example, we "operate on" the telephone dial and are reinforced by hearing our friend's voice answer our call. Dialing the number becomes an operant response; we learn to do it correctly because the consequence—a friendly voice—is reinforcing.

All behavior, in this view, is a response to some *stimulus*. By the time a child arrives in the first grade he already has a great deal of established behavior of a complex kind. Because of this, the teacher is in an excellent position to provide the stimuli most likely to bring forth the desired behavior.

Reinforcing Desirable Behavior

Even more important for bringing about learning is the use of reinforcement when the desired response appears. Here's an example: A teacher wishes her eighth graders to get quickly and quietly to work at the beginning of the class period. She watches them closely as the opening bell rings. As soon as one student makes a move toward beginning work—they already knew what to work on—she walks over to deposit a tangible reinforcer on the student's desk. "What's that for?" asks the reinforced student. "For starting to work," says the teacher, adding further reinforcement.

When you think about it, reinforcement is being given to a great deal of behavior in the classroom, because students and teacher are responding to each other constantly. Although desired behavior is reinforced, don't forget that the noisy student gets reinforcement through teacher and student attention. We may even say that this student conditions the teacher's behavior by rewarding the teacher with a few minutes' quietness in exchange for some personal attention!

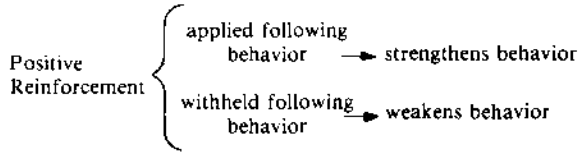
When reinforcement is pleasant, it is defined as a reward, and the classroom can be full of this type of reinforcement. The satisfaction of knowing that a task is done well, or that one's efforts are appreciated, or the quiet pleasure of helping someone else achieve are powerful reinforcers, just as are gold stars, words of approval, and privileges.

The principle of reinforcement states that *any behavior reinforced will be more likely to appear again;* that is to say, it will be strengthened. The timing of the reinforcement should follow closely the occurrence of the desired response. This principle implies that the teacher is a careful observer, ready to apply material, vocal, tactile, or behavioral reinforcers promptly when the desired behavior appears.

Just as the presentation of a reinforcer serves to strengthen the behavior, so loss of a reinforcer serves to weaken the behavior. This application is useful when the teacher wishes to eliminate unacceptable behavior. For example, if gold stars are earned only for neat work, not getting the stars will weaken messy behavior, just as getting gold stars strengthened neat work. Teachers can find many published articles on operant conditioning in the classroom.

Diagram 1 summarizes the main points about reinforcement.

Diagram 1



If positive reinforcement is applied following desired behavior, the antecedent behavior is strengthened. When reinforcement is withheld, the behavior weakens. We can state these two principles another way, and in that way focus on a different aspect of operant conditioning. 1. *When behavior leads to reinforcement, the behavior is strengthened.* 2. *When behavior leads to the withholding or loss of reinforcement, the behavior is weakened by loss of the reinforcement.*

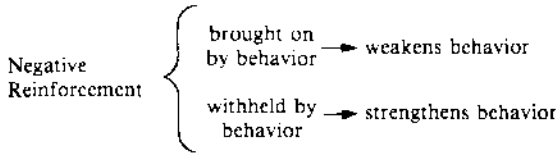
What happens if learner behavior leads to the removal of an unpleasant reinforcer? Consider the behavior of a person with a headache. The behavior called taking-something-for-a-headache leads to the disappearance of the headache. The reinforcer is behavior that removes the ache, and that the behavior—taking-something-for-a-headache—is thereby strengthened. Another example may help clarify this principle. A child lies to escape punishment; if successful in avoiding punishment, the behavior—lying—is more likely to reappear. It follows, of course, that teachers must be ethical in the kinds of behavior they reinforce.

Negative Reinforcement

The final principle involved in Skinnerian operant conditioning has to do with giving an unpleasant reinforcer, which is called *aversive.* Consider the common use of punishment. This kind of reinforcer—of which there are many forms—leads to a weakening of the antecedent behavior. Physical punishment is only one form and has little ethical or psychological value. Mild aversive reinforcers are much more likely to succeed, but the case for their use is far weaker as an aid to learning than the case for positive forms of reinforcement.

The forms of negative reinforcement just discussed can be summarized in a diagram similar to the first one (see Diagram 2).

Diagram 2



When a negative reinforcer is brought on by behavior, the behavior will be weakened. Conversely, when behavior leads to the removal or cessation of a negative reinforcer, the behavior will thereby be strengthened.

The four principles illustrated in Diagrams 1 and 2 are the basic principles of *operant conditioning*, and are the basis of the answer to our question about how learning takes place: Learning takes place as behavior is modified by response (behavior) reinforcement.

Classroom Applications

How might a teacher apply these principles in the classroom to facilitate learning? Here is a sequence of steps the teacher can follow, keeping in mind that the method of aiding learning does not tell the teacher *what* to teach but serves only to tell *how* to go about the teaching with a high expectation that learning will take place. The teacher attends to observable behavior, is little concerned with undesirable behavior, giving most attention to the desired responses.

First, the teacher should select the kinds of acceptable behavior that are the goals of his teaching, expressing these in words that describe *what students will be able to do* at the end of the instruction. For example, "Reproduce from memory the diagram on page 8" is a statement about what the student should be able to do after study. "Know the contents of the diagram on page 8" is unacceptable because it does not describe observable performance: "Knowing" is not observable. Eliminate ambiguous terms such as *know, understand, appreciate,* using the more behavioral terms such as, *state, reproduce, select from among four alternatives.* This is sometimes difficult, but seldom impossible. Many small, easy-to-use books are available to guide teachers in writing performance objectives.

Second, estimate the kind of behavior that students are likely to bring to the learning experience. If the teacher's starting expectations are too high, some students won't even begin to learn because they have no appropriate behavior to be modified by reinforcement. They will be lost from the beginning, and will be reinforced in their lostness while the teacher works unsuccessfully toward a goal neither can attain. The most common way to assess the entering level of behavior, as it is called, is a pretest. Teachers who spend the entire school day with their students usually know from experience what the entering level is, but even in these classrooms there are surprises. Teachers who teach by the class period only must pretest.

Third, the teacher must identify for himself and for his learners the behavior he wants to foster. "Today we're going to draw a picture of how a starfish eats." "Before we go for lunch in thirty minutes we'll solve this problem." These are short-term goals that can be approached directly. When the task is more complex, the teacher may want to use some intermediate steps known as *shaping* techniques, that help bring behavior successively closer to the goal. The focus is on the improvements, and these are reinforced; mistakes or errors are ignored as far as reinforcement is concerned. The main emphasis is on positive reinforcers. Say, "I see you're interested in the poetry books today," as the child pauses over those books. Shaping gives pleasant recognition for increasingly acceptable behavior.

Fourth, the teacher should begin the learning sessions, reinforcing the appropriate behavior (or approximations of it if he is using shaping techniques). Active learning and response are important to the operant learning concept. Both teacher and learner recognize the correctness of the results. Experience indicates that frequent reinforcement is necessary in the early stages of learning while irregularly spaced reinforcement is more effective once the process is underway.

Fifth, the teacher evaluates learning success by noting behavioral evidence of goal achievement. That behavior is accepted as evidence of learning.

Operant conditioning in the form of behavior modification or programmed instruction applies to all school subject matter and to a wide variety of behavior. It is equally applicable to live instruction and to written learning.

Motivation, Discipline, and Memory

Teachers, when asked, identify three topics about which they want to know more so as to enhance learning: *motivation, discipline,* and *memory* or retention. We will examine the implications of operant conditioning for each of these.

When teachers want to know how to motivate pupils, they assume that if the pupils are interested, then school tasks will be both completed and learned. Strict operant conditioning theory is not concerned with wants and interests, because these are private or interior states, not observable behavior. Yet the teacher's quest for motivated

students is not wholly ignored. Any ethical means of eliciting the desired response is acceptable. The Skinnerian advice directs the teacher to give most attention to eliciting the behavior and reinforcing it rather than focusing on pupil "interests" which cannot be observed or known. Teacher knowledge of age, class, and individual behavior, added to knowledge about effective stimuli will provide the tools necessary to "motivate," that is, elicit behavior.

Discipline

Discipline can be viewed in several ways. One view is that discipline problems are, like everything else, learned behavior that responds to reinforcement. Treatment for those problems will be based on the four principles of operant conditioning. Briefly, applied to undesirable behavior, this means that the good behavior is reinforced, positive reinforcement is withheld following undesirable behavior, negative reinforcement (aversive stimuli or punishment) is applied to undesirable behavior but withheld when that behavior stops. Earlier we noted that negative reinforcement, that is punishment, is less effective than positive reinforcement. But there are some disturbances and problems of behavior that cannot be ignored because they threaten not only learning in the doer, but may also disrupt the class and threaten the safety of other students. Behavior-modification techniques provide the "time out" concept—temporary isolation in a dull, unstimulating environment—certainly not in the classroom corner or in the principal's office—because these are fascinating places to be and, as such, are positive reinforcers.

Operant conditioning can be effective for preventive discipline by rewarding (through recognition and praise) the acceptable behavior so that it becomes habitual. Teachers can describe, demonstrate, then reinforce the increasingly accurate performances. Students can certainly have a voice in setting up the "few and well-considered" rules of behavior, and learn to live by them by being reinforced. A maxim for the classroom teacher wanting to teach virtue might be, "Virtuous behavior rewarded is repeated."

Students will not become dependent on reward if, once the good behavior is known and has been demonstrated, teachers diminish the frequency of reinforcement. The quantity of good things going on in the classroom prevents student dependence on secondary reinforcements. After all, there is a limited enjoyment in gold stars. Only a few pure spirits pursue knowledge or skill for its own sake. The rest of us learn for the results we get from the learning.

How does remembering relate to reinforcement theory? We cannot say, "Once learned, never forgotten." Behavior is extinguished when the reinforcers are removed. For example, a normally well-behaved class may become disruptive for a substitute teacher, because the strengtheners of the good behavior from the regular teacher are absent. This means that when the behavioral goals have been reached, periodic reinforcement is necessary if the behavior is to persist. Reviews, revision, repetition—all these have a place in sustaining a high degree of certainty that 2 + 2 will continue to equal 4. Such an awareness is a valid argument in favor of consistent expectations in discipline and in curriculum construction.

A Moral Dilemma

How does the behavior modification view of learning relate to Christian beliefs about persons? In several ways the view is unacceptable. The concept of self-control, on which Christians put great emphasis as a personal, deliberative activity, is regarded by behaviorists as external, in the environment, based on one's reinforcement history. This raises questions about the reality of concepts such as human freedom and choice. This brief comment simplifies a complex issue; Christian concept of will, choice, and freedom, however, are viewed by behaviorists as unnecessarily cumbersome.

A Christian view shared by behaviorists concerns the nature of learning in young children. Both groups seem to see learning as irrational behavior, emerging from reinforced responses. Seventh-day Adventists express this view in much of their writing and speaking about teacher/child relationships and parent/child relationships, looking, however, for the emergence of self-control in the preschool years under the careful guidance of parents and teachers. Such a view asserts a great role for environmental determiners of early behavior with an increased self-determinism, and personal choices later.

Finally, behaviorists tend to be naturalists rather than supernaturalists; hence they cannot provide much insight into persistent Christian interest in the human/divine interaction in learning, retention, and recall. They should not be expected to do so, since they have defined the universe of learning somewhat differently.

REVIEW OPPORTUNITIES

1. Reproduce from memory the diagram that summarizes positive reinforcement and its consequences.
2. From memory, list in sequence the steps by which you can apply in your classroom the principles of operant conditioning.
3. Compare your responses to the text; review and rewrite as necessary.

Learning: The Construction of Cognitive Patterns

How does learning take place? *Learning takes place as cognitive "maps" develop.*

This second answer to how learning takes place contains two words that are important. *Cognitive* means having to do with thinking. The word *map* is used to describe or identify a pattern or arrangement of mental images or judgments; a more technical name is *construct.* We define cognitive maps as patterns of thought, concepts, or even ideas. Our answer to the question then reads: Learning is the development of patterns of thought, concepts, or ideas. Also implied is that what we call learning happens as people take in information from around them, internally making an arrangement or code that allows storage so that when needed, the information can be retrieved.

It is immediately clear that this view is quite different from the one we have just discussed. Operant conditioning defines learning in terms of overt behavior, giving little separate attention to inner states or abstractions such as ideas. The present view, focused on cognitive maps, defines learning as what goes on inside students' heads—what they are thinking.

Although there is no one person comparable to behaviorists' B. F. Skinner, who has developed the cognitive view and spelled out its implications for the classroom, many agree that Jerome Bruner (1915-), an early advocate, is its best known spokesman. He has been especially active in promoting the view, as well as in exploring its likely applications in the classroom.

Jerome Bruner developed a professional interest in perception—the whole process of "seeing," in both the physical and psychological senses, suggesting that each viewer personally *gives* emphasis, even distortions, in his perception of an object or concept. For instance, the subject's feelings about money and socioeconomic status and personality influenced experimental perceptions of the size of a coin. Hence, much of our behavior and learning may be a result of the way we construct knowledge about ourselves and the world around us. Bruner found that it was a short and logical step from this concept to an interest in learning psychology and ways to enhance classroom learning.

In order to understand what Bruner has to say about learning we must first examine in some detail his ideas about growth and development. In 1960 he made a statement that can serve as an introduction to his views: "Any subject can be taught effectively in some intellectually honest form to any child at any stage of development."[1] Although this statement has been a focus of controversy, it means at least that any child, regardless of age, is always ready to learn something about a particular activity or content. When students fail to learn something, the cause probably lies in the teacher's not having matched the subject with the particular level of learner development. Knowledge of intellectual development is the very heart of understanding how to bring learning about.

For Bruner, learning is the student's selection of information in a personal way, making "best guesses" about the nature and significance of the data chosen, and even the occasional twisting of perceptions in an effort to fit learning events together comfortably and thereby achieve goals. His view of learning with its emphasis on mental construction is clearly different from the behavioristic view of Skinner discussed earlier.

Three Modes of Representation

Intellectual development is very loosely connected to any particular chronology and is better viewed as development of a system of rules that learners use to anchor perceptions into a workable scheme. Bruner calls these *modes of representation.* Described another way, this system of rules guides an individual as he takes in information through the senses, storing it, coded, for later use. The intake depends on the mode of representation. There are three steps in this stairway of intellectual growth. These are successively attained in the developing child's repertoire of learning in a fixed order. However, they don't disappear: It is possible that all three processes may be in action at a given time, even throughout life. But they will not be equally important at a particular time; one kind of representation will always be more dominant. These stages of representation can be encouraged and cultivated; they are not simply generically determined and, hence, automatically achieved through the maturation process. Bruner calls the three steps or stages *Enactive Representation* (in which action is the basis and limit of knowing); *Iconic Representation* (in which mental pictures—icons—"stand for" the understanding); and *Symbolic Representation* (in which language allows speculation and hypotheses about past, present, and future).

Bruner has illustrated these three stages of representation using the example of balance.[2] 1. Being able to use a seesaw successfully with another child (of equal or unequal weight) illustrates knowing balance enactively, hence is Enactive Representation of the balance. 2. Talking about the operation of a seesaw by using a picture or a model is Iconic Representation. 3. Symbolic Representation involves describing the principles of balance of the seesaw either in the language of physics or in accurate, everyday talk.

The important charcteristics in learning are

clearly "inside" the person at all stages, and involve personal responses in the form of organized action, picturing, or symbol use. This all goes on in a social and personal context; the one is just as important to learning as the other.

Jerome Bruner is by no means the only advocate of this point of view of learning as the construction of cognitive patterns, but he is one of the most important. Equally well known is Jean Piaget (1896-). Like Bruner, he outlines a series of changes that take place in the child's sets of ideas or cognitive structures. Piaget's changes are, however, genetically based. As the child goes from stage to stage, movement is away from a narrowly self-centered world toward a wider and more stable range of experience. In this process of change, the child actively constructs new and more adequate ways of thinking about the world.

Like Bruner, Piaget outlines stages of intellectual development. Because they have come to have important consequences for teachers, we need to examine each of his four stages in sequence. The four stages, in developing order, are called *sensorimotor, preoperational, concrete operational,* and *formal operational.*

The Sensorimotor Stage

The child passes through the Sensorimotor Stage from birth to about two years of age. During this time the infant develops from seemingly random behavior and movements such as sucking and clasping to the walking toddler who can, among other things, retrieve a toy from behind furniture and make independent journeys around the house. The early reflex actions and seemingly random movements give way to effective coordination, followed by clearly intelligent acts which emerge at about age twelve months: purposeful searching, manipulation, and anticipation invoking experience. New solutions are tried. Ends or goals are pursued through chosen means, and development is further enhanced by the ability to represent objects internally, which is necessary for the development of language. But characteristically, learning in these first two years of life is closely connected with observable, active behavior: there is very little difference between knowing and doing, between what the child has learned and what it does overtly.

This sensorimotor behavior does not disappear at age two. Although it continues, intellectual development becomes dominated by representational and symbolic behavior rather than by motor activity.

The Preoperational Stage

The Preoperational Stage is characterized by the child's ability to view past, present, and future by what we call thoughts—that is, through internal processes rather than simply through action. But at this stage the thoughts are like a one-way street, that is, they are not reversible. The examples are well known: A higher water level means more water in a glass, a lower water level means less water, regardless of the diameter of the glass. Learning is simple and direct.

A major event of this period is language learning, which goes from the "me, me, me" of the two-year-old to the highly informative and social conversations of the first or second grader. But there are limitations. Thought is slow and very concrete, dominated by the child's view of the here-and-now, and often lacks the ability to account for what happens between times.

Concrete Operations Stage

The stage called Concrete Operations is one in which mental operation—thinking—is a two-way street, in that the child is able to solve problems by mentally reversing operations. For example, a ball is perceived to contain the same quantity of clay when shaped from spherical to sausage shaped, and then into a pancake, or back into a ball. This perception is called reversability, a characteristic present in this stage but lacking before this time.

Formal Thought Stage

Around the age of twelve children usually enter the stage of cognitive development called Formal Thought. Through the intermediate and secondary grades pupils become increasingly able to deal with "What if . . . " propositions. Morever, they can form hypotheses—best guesses—and go about testing them in thought experiments as well as in practice. There is a plan or system to the thinking, several factors being kept in mind at once, and the thought results from one exercise can be applied to another, later problem. This and other stages of growth provide enjoyment; the hazard now is that the mental speculation and manipulation can lose touch with reality, so fascinating does the world of "What if . . ." become. An excellent book describing and illustrating these stages of development is Barry J. Wadsworth's *Piaget's Theory of Cognitive Development.*[3]

No explanation of the way in which we learn can provide ready-made solutions to all our teaching problems. But the cognitive theory does have some useful things to say to teachers. First, because of the clear relation established between stages of development and of cognition, this way of explaining learning guides our attention to the child's stage of intellectual development. Hence, good teaching, that takes account of development, would seem to emphasize individualized instruction of a kind that is highly social and interactive. Age in years is, at best, a rough way to establish

the developmental stage. Better guidance comes from extensive testing in the simplified approach of pretest, posttest. We must keep in mind, however, that learning is mostly internal, not mostly overt behavior such as the pretest and posttest reveal. The clinical method (such as used by Piaget) is recommended. This involves using questions and other in-class diagnosis to discover what the learner has in mind. The line of teacher's questions tends to follow the responses, and thus each step grows out of what came before. This is common enough in the classroom, although teachers seldom have the time they would like for interaction with each student. But they should listen and learn, always being alert to the words and the actions that signal the state of mental life from which they spring.

The view of learning discussed above does not turn the learner loose to wander—that is, "learning by discovery." New cognitive constructions can be developed. Several kinds of inducements can enhance growth (though Piaget is not much interested in this), and these actually involve a challenge thrown into the learner's lap. The teacher might stimulate thought that produces new constructs by producing disturbing data that defends ideas contrary to those assumed. For example, adding that uses six as a base instead of ten can produce rewarding shock waves in students' thinking. Inquiry about the thinking behind student responses allows the teacher to focus on causation.

Much discovery learning is verbal and group learning because of the constraints of modern classrooms: upwards of thirty children, and limited amounts of time in the school day. Teachers already know some of the likely pitfalls—a few children will do most of the reflecting and discovering, while the others contentedly let them. Moreover, few people—teachers or students—are uniformly insightful in class or out, day after day. Constructing new intellectual furniture seems to be a fitful process; left to themselves students simply can't discover all they need to know in the short time available. But, granted these hazards, teachers can do a lot to enhance reflection and thus the construction of ideas in learners of any age.

Classroom Implementation

Two general suggestions are valuable to the classroom teacher. First, the teacher should keep the Bruner or Piaget stages of cognitive growth in mind as a reference in classroom events, remembering that each learner is an individual within these stages. The teacher should try to see things from the learner's point of view. One way to encourage these views is to provide opportunities for all learners to respond in some way: Group discussions can include two or three minutes for individual written response.

Second, the learner is active in fitting the environment to his present level of thinking: We all put together the best explanation we can of the information we encounter. A challenging environment populated by teachers who ask students to analyze, to see things from another point of view, to hear another's impressions of a topic, to construct generalizations and identify patterns and regularities—this seems to be the setting in which cognitive construction can flourish. Perhaps the best-known application of this view of learning is found in the open classroom or in open education, about which much has been written.

The open classroom is a formal arrangement that helps the teacher carry out its designers' underlying beliefs about how learning takes place. The open classroom is the active, visible expression of the belief that learning takes place as the development of cognitive constructs is provided for.

What help do cognitivists give us with motivation? First, cognitivists suggest that children are already motivated, active in seeking, capable of cooperative, organized search for varying periods of time, and (at the upper levels) can plan contractually for goal achievement. Cognitivists tend to be optimistic about the learner's motivation as already active and responsive to the appropriate lures cast by the teacher into the waters of learning.

What can we say about retention when we define learning as cognitive construction? We can assume that when we learn what we want to, and what helps us make sense of our surroundings, we will tend to remember our learning better than when these factors are missing. This makes remembering our learning a part of life; our own vital interest demolishes the barriers that seal off much formal learning from the rest of our experience. Bruner claims, also, that as we grasp structures or unifying ideas or principles, a greater variety of uses emerges. Greater use results in more effective and frequent recall, because enhanced meaning results in enhanced retention.

Discipline, in such a setting, has little to do with punishment or coercion of any kind. The largely self-motivated pupil is stimulated into constructing or reconstructing cognitive maps of the universe as experienced at a particular stage of growth. Problems of behavior are, in fact, problems of appropriate learning and development. Where inappropriate behavior erupts, the cause (and cure) probably lie in a more appropriate matching of pupil maturity and learning experience. At a more advanced level (Piaget's Formal Operations, and Bruner's Symbolic Representa-

tion) the learner is ready and able to be self-directing in a way not available earlier.

What view of persons is implied by this view of learning as cognitive construction? The main elements are not hard to find. Human experience is developmental. Second, the intellectual is the principal dimension, and this is defined as purposive—that is, goal seeking—and (at some stages) a conscious process. Third, cognitivists seem to be optimistic about persons, rather than pessimistic. This is not to say that this view denies evil and believes that all is good. In fact, few views of learning give much attention to the morality of learning, being inclined to see right and wrong as concepts we learn along with other school subjects rather than (1) seeing the goodness or badness of persons or (2) seeing learning, as such, as a determinant in the process.

REVIEW OPPORTUNITIES

1. Identify the definition of learning given in this section.
2. List the three modes of representation Bruner provides as stages of intellectual growth.
3. Write a brief description of each of Piaget's four stages of intellectual growth: Sensorimotor, Preoperational, Concrete Operations, Formal Thought.

Learning: Based on Readiness and Sequence

How does learning take place? *Learning takes place as the ready learner is presented with appropriate learning circumstances.*

We have already discussed two views of learning. One, the view associated with B. F. Skinner, asserts that we learn the responses that are reinforced. The second, associated for our purposes with Piaget and Bruner, says that we learn as we develop cognitive constructs, with the intellectual building process going on in different ways at different stages.

The view we next discuss suggests that the process of learning is the same whatever the task may be, but that there are several—eight to be exact—different types of learning. Referring now to the answer above, the "ready learner" is defined the same way whether four or forty-four years of age; readiness is a consequence of: (1) what has been learned previously, and (2) neurological ability. The "appropriate learning circumstances" presented to the ready learner are the types of learning that must be presented in a specific sequence, order, or hierarchy that must be observed if learning is to take place. You can't learn to run before you can walk, and trying to do so creates an inappropriate learning situation.

The twentieth-century learning psychologist who has explored this definition of learning is Robert M. Gagné (1916-). He knew what teachers discover—that no one theory is adequate to cover all situations; learning is of various kinds, some insight, some response learning. Gagné commented on this well-known fact, and, following his interest in enhancing the effectiveness of instruction, he described the conditions under which learning is likely to take place, in part by describing the types of learning that are likely to be encountered. Gagné's view of learning rejects the idea that there is only one or even a few kinds of learning. Further, he emphasizes the internal conditions of the learner, as well as the external environment. The teacher, he says, manages the internal and the external to achieve the desired instructional goal.

Gagné's work has been based in theoretical and speculative endeavors, in general experiment, and in working with training problems in the military forces. His major publication is *The Conditions of Learning.*[4]

In his writing Gagné recognizes the limits of his descriptions of learning, aware that he has looked mainly at subject-matter learning that leads to a person's vocation or profession. He suggests, however, that his descriptions alert teachers to students' learning needs as each starts to learn, persists with a task, and achieves specific goals.

We are now ready to examine Gagné's hierarchy of types of learning. These are based on a pivotal idea: *Learning any new performance depends upon having already learned the performances that are antecedent and subordinate.* The progression is from simple to complex; thus, the teacher must be skillful in locating learning tasks in the learning hierarchy.

The levels on the hierarchy or types of learning are as follows, listed from simple to complex: (1) signal learning; (2) stimulus-response learning; (3) chaining; (4) verbal association; (5) discrimination learning; (6) concept learning; (7) rule learning; (8) problem solving. These types, Gagné believes, differ both in their characteristics within the nervous system (which are invisible, and not our concern in this short course) and in their behavioral expression. We will examine each of these eight types of learning in order.

Gagné's Types of Learning

1. *Signal Learning* for Gagné is the kind of learning described as the classical conditioning, studied by Pavlov. One stimulus is substituted for another already effective. The response is an involuntary reflex; for Pavlov's dogs it was the salivary response. Because involuntary responses are involved

in this kind of learning, it is different from all the others, which involve voluntary responses usually chosen consciously.

2. *Stimulus-response Learning,* although similar to learning described by Skinner earlier in this course, involves discrimination by the learner between the correct and incorrect stimuli and responses. This discrimination is more important for Gagné than the response being reinforced. This is trial-and-error learning in which with each trial the pupil performs more accurately, and the teacher constantly reinforces the improved responses. Learning correct pronunciation of words is an example: With each successive stimulus—the spoken model to the imitated—the response is more accurate.
3. *Chaining* involves linking together a series of stimulus-response units so that some end act is achieved. Stimulus-response units must exist before they can be chained. The examples in the classroom are many, including such motor acts as writing and opening doors. The teacher chooses one of two almost equally effective strategies, either beginning with the first unit in the chain, reinforcing, eliciting the second, which is then reinforced, et cetera, or beginning with the terminal event in the chain and working backwards. Either way, the teacher must engage in extensive task analysis when complex tasks are to be mastered. However, he is aided by the fact that for any complex task there is already available in the pupil a formidable array of necessary antecedent skills. For example, before writing is learned the pupil can grasp, guide, and make marks without reference to line guides.
4. *Verbal Association* is the next most complex kind of learning in Gagné's hierarchy. It differs from chaining mainly in being verbal, whereas chaining involves motor behavior. Both processes are defined as connecting a set of stimuli-and-responses in a sequence. The sequence, whether chain or association, cannot be learned unless the individual links are already mastered. This assumed, repetition of the sequence leads to a facile performance.
5. *Discrimination Learning* is just that, learning to make selective judgments and appropriate responses chosen from among learning already achieved. Smooth and accurate responses may be prevented by interference of some kind: The child has to learn to visually discriminate the different appearance of "b" and "d." Repetition of the correct response will reduce interference and will also enhance recall of the correct response. The child who has learned to distinguish correctly between "b" and "d" can be said to have learned to discriminate the correct response.
6. *Concept Learning* is more complex than discrimination learning because learning a concept requires providing a common response to a variety of items that (while differing in many ways), nevertheless, share a common characteristic. For example, the concept of "edge" is shared by a large number of very diverse objects. This example helps also to define the hierarchy: Learning the concept requires the ability to discriminate, to make verbal associations, to make chains of motor responses, and to respond to stimuli.

   Concept learning is aided by having the concept identified in numerous instances—"Here's an edge, and here's an edge, and there's an edge. . . ." Leading questions aid the learner in the process of mastering the concept, as does reinforcement of correct responses. Repetition seems not to be important: It is not the number of edges he sees as much as how well he comes to understand just what he is seeing.
7. *Rule Learning* is the next most complex type of learning proposed by Gagné. Rule learning involves learning rules and definitions of the concepts themselves. Once such rules are learned, says Gagné, the learner can respond appropriately. Typically, a rule involves at least two concepts and a relationship; for example: "Stay away from the pond," or, to give another example: "When cutting plywood on the table saw, set the blade on the outer edge of the mark." Both of these rules state behavioral or performance relationships between at least two concepts. Obviously, the rule cannot be learned until the concepts are mastered. Once the rule is learned, the student can attempt appropriate performance.

   Rules are learned by the teacher's stating the rule, of course, as Christian teachers know very well, but there are a variety of other techniques that are perhaps even more effective than telling. One way is pointing out to the learner critical concepts in a given performance, then inducting the learner into formulation of the rule. The teacher can have the learner describe the rule rather than simply memorize it, rote fashion.
8. *Problem Solving* is the most complex type of learning. This is not to say that all prob-

lems are complex; rather, problem solving demands antecedent ability to respond to stimuli, sustain verbal associations, make selective judgments about stimuli and responses (that is, discriminate), master concepts and learn rules. According to Gagné, problem solving involves using concepts and rules to achieve an accurate definition of the problem, and to achieve a solution to the problem. The process of solving a problem usually involves what we call a scientific method: Becoming aware of and describing the problem, making hypotheses about a solution or solutions, testing until an effective and acceptable solution is found. Students learn to become problem solvers by being taught how to think about solving problems and by having experience in solving problems. Adventist teachers cannot fail to recall, at this point, Ellen White's oft-repeated statement about the need to have students become "thinkers, and not mere reflectors of other men's thought."[5] We might translate this, without harm, to read: "Problem solvers, and not merely skilled in the first seven of Gagné's types of learning."

Classroom Applications

A great deal can be said about the classroom use of Gagné's theory, and this is done expertly in many books for teachers. One such source that many teachers find helpful is parts of Robert F. Biehler's *Psychology Applied to Teaching*.[6] There are many other such books; in fact, no current comprehensive book on learning in the classroom overlooks Gagné's view of how learning takes place.

Motivation, Memory, and Discipline

We can notice now, in more detail, the teacher's role in the three topics that we examine in each theory: motivation, memory, and discipline. Elsewhere in his writing Gagné has described the sequence of events that run when a person learns something. The state of the learner indicates pursuit of a goal; when the goal is achieved, learning has taken place. Teachers can initiate this active state, if students have not done so, by creating expectancy in the learner. There are two kinds of expectancy, both of which are powerful influences on learning. One is social, related to our need to belong in a group, to associate comfortably, to be approved by others, whether the others are our peers or superiors. Another kind of expectancy is our personal expectation of accomplishment and mastery of our chosen tasks. Teachers have an obvious role in contriving the first, although less of the second is within the range of their management. This range of motivation offers a fertile field for the teacher who finds students often needing help in this first phase of learning, especially so because the teacher, rather than the student, usually chooses the goals in school. Gagné is explicit, suggesting that his views of learning give direct help to the teacher in managing the learning situation so that students will be motivated both to begin toward a goal and to persist in its pursuit. The teacher arranges the content of the learning and the environment to sustain motivation.

Discipline, in such a view, is something that is learned. The teacher does not seek mechanical obedience and adherence to rules, but rather arranges the phases of learning—motivation, apprehending, acquisition, retention, recall, generalization, performance, and feedback, to bring about changed behavior. Explained another way, Gagné's views encourage a teacher to regard good behavior as something to be learned, just as the student learns the spelling of a word or the details of a history lesson. Undesirable behavior is the starting point for learning preferred behavior, just as bad addition can be a starting point toward correct addition. The teacher will have to be sure, however, that the learners are ready to learn the complexity of performance being advocated. When this is established, he must proceed with the teaching of an acceptable behavior that may (as elementary teachers discover early) run contemporaneously with arithmetic, or social studies, or reading. We do learn more than one thing at a time.

Remembering and forgetting, according to Gagné, involve finding or not finding previous learning for retrieval, subsequent generalization, and performance. The learner may or may not recall exactly what is needed or what was originally learned, depending directly on the quality of the learning. Coding for storage may have made accurate performance impossible because it was so individualistic. Memory was activated, but what was retrieved compares so poorly to what had been learned as to be useless. Inaccurate performance, unrelated to memory, may be based on defective generalization. Given the complexity of memory, teachers, rather than simply asking learners to remember, should ask them to perform and to explain, if possible, what they recalled that guided their performance.

Gagné's View of Persons

What does Gagné's view of learning imply for a view of the learner as a person? First, and obvious, is the idea that the person is capable of increasingly complex intellectual processes. Stimulus-response learning is one basic, but not all-encompassing description of human capabili-

ties. Gagné does not suggest that the eight types of learning emerge in a specific chronological and developmental sequence, much less that they are school-grade sequential. Problem solving of a simple variety could be learned as early as simple rule learning has been learned; new stimulus response learning can go on throughout life.

Further, we can assume that Gagné sees persons as essentially intellectual; they are not simply machines, at the mercy of fate or caprice, not preprogrammed or possessing knowledge at birth. Environmental influences seem to be important—Gagné emphasizes the teacher's role as an arranger of external influences that facilitate learning. And, we can assume from the eighth type of learning that all the rules are not already evident, all problems are not solved. The learner is certainly a discoverer, perhaps even a creator of knowledge, at least in problem solving.

Gagné does appear to describe all aspects of learning, but does not attempt to describe the range and potential of all learners. By implication, at least, the teacher is likely to encounter a variety of learning ability and capacity: How far up the hierarchy has the learning progressed and how quickly is the learning achieved are concerns for close classroom attention.

Gagné has a view of the learner that is agreeable to the Christian teacher in several ways. The notions of sequential complexity in intellectual processes and the emphasis on the intellectual and mentalistic in learning have long and implicit endorsement among Adventists. Whatever our interest in the manual and technical, this interest has always been intellectually mediated. Further, Gagné's neatly organized way of describing human learning appeals to us because we have a strong investment in an orderly creation with orderly processes. We should remember, despite these agreeable characteristics in Gagné's theory, that he is not setting out a view of man but describing one important part of human behavior. We infer a view of persons from his theories, because this is our concern at present.

REVIEW OPPORTUNITIES

1. State in your own words our definition of Gagné's view of learning.
2. List the sequence of the types of learning discussed in this section. Correct sequence of these eight events is important. Provide a brief descriptive explanation of each type.
3. List, in order *by name*, the types of learning in Gagné's hierarchy. Give a brief descriptive definition for each.

Learning: Self-Actualization

How does learning occur? *Learning occurs as freely choosing individuals grow toward self-actualization.*

This view questions many of the concepts that we have met so far, such as stimulus-response relationships and experimental evidence, for example, thinking them not to be basic to learning. Other aspects that were lightly treated or neglected—emotion, for example—are here of much more central importance. We begin with some of the questions that stimulated this fourth view of learning.

Are learners passive beings who must be manipulated into interest and from there on into learning? Might it not be that learners are interested in learning just because they are human? Can we trust learners to make their own choices about learning, or must some authority provide the choices and directions for their expression? Can the teacher take a personal role as helper and friend and still be effective? Is it important to consider feelings and sense of success, and the learner's view of himself or herself? Is experimentation our best source of evidence about how learning takes place? And if not, what better sources might there be, if any?

These are questions that all teachers ask about learning at some time or other, questions that relate to important beliefs about freedom, personal choice, attitudes and feelings, teacher-learner relationships, and the basis for truth claims. These and similar questions underlie the view of learning we are considering now; the answers led investigators to the view summarized above. Three names need to be mentioned when we define learning as taking place when freely choosing, self-fulfilling individuals seek to know. They are Abraham Maslow (1908-1970), Carl Rogers (1902-), and Arthur Combs (1912-). Many others agree to some extent with these three, but they are the main exponents of this view.

Most teachers remember from earlier study Abraham Maslow's hierarchy of needs, a list of satisfactions proposed as basic to healthy living. Maslow came to reject American psychologists' preoccupation with evident behavior because it seemed to him to neglect those most important dimensions of our experience—feeling and emotion. Freudian views, which do take account of affect, were equally unacceptable because they were based on consideration of unhealthy persons. Healthy persons, Maslow argued, seek experiences that satisfy, that are good for them, and that allow free choices. Human nature can be trusted to do this.

Maslow was not an experimenter, so we cannot

outline the scientific basis of his theory. However, he wrote a great deal; his book, *Motivation and Personality,*[7] presents his most important ideas.

Carl Rogers, somewhat younger than Maslow, came to similar conclusions. From his psychoanalytic work he concluded that Freudian theory was deficient. The therapist should not be central, Rogers decided, but the patient should be freely choosing to control his or her behavior. Rogers examined his ideas about therapy as well as his experience as a college professor to conclude that teaching in school should be learner centered, just as therapy should be client centered. Given freedom to learn (this is the title of an important book by Rogers[8]), students become able to educate themselves, not needing manipulation by teachers.

Arthur Combs also advocated the importance of the person in learning, but emphasized the importance of the individual's point of view or perception. For Combs, personal perceptions are basic, arising, he believes, from a single need for *adequacy*. Learners are directed toward goals, because they seek to be as adequate as possible, to do what each views as the very best for him. And that, said Combs, is the point of view to keep in mind if one would be an effective teacher.

Major Humanist Ideas

These three students of learning, Maslow, Rogers, and Combs, are called humanists because they emphasize the importance of the human dimension, the personal nature, the human-relations aspect in learning. Many agree with them, and as a consequence the words *humanist* and *humanistic education* occur widely. Remember, however, that there is a wide range of opinion among humanist teachers, as well as vigorous discussions and disagreements. Discussed below are major humanist ideas that command widespread acceptance.

One such concept of humanist views is that learning is intimately related to basic human needs. The best-known formal expression of these needs is Maslow's hierarchy. This list implies that some motives or needs are more basic than others (in a schematic way) for everyone rather than being different for everyone. For example, any child coming to school hungry is unlikely to be very interested in intellectual achievement, because hunger is more basic as a motivation than need for knowledge. Most psychologists agree that satisfaction of lower-order needs facilitates the operation of higher-order motivation. Diagram 3 displays in summary form the needs that Maslow classifies, their relative position, the kinds of needs, and their two general categories: deficiency and growth needs. When all of the needs are appropriately met, the individual is a self-actualizing person, mentally healthy, realizing his full potential.

Maslow argues that higher needs emerge as lower needs are met. Thus, when the deficiency needs (survival, security, belonging, esteem) are satisfied, the person will feel motivated to satisfy the higher growth needs (knowledge, understanding, aesthetic needs). This reaching for satisfaction of higher order needs is not stimulated by deficiency but by the desire for growth. When our deficiencies are met we wish to grow, we enjoy growth and seek it. Clearly such a view has implications for mental health, with a dynamic and productive tension between meeting social expectations and expressing interests and desires in ways that give deeply personal satisfaction.

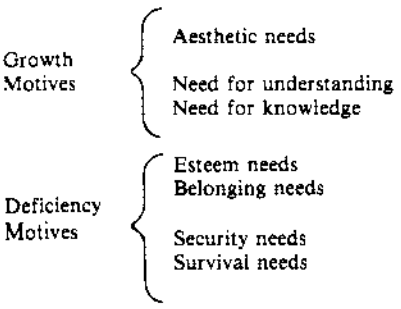
Rogers and Combs also assent to the concept of basic needs, although they have not constructed lists or hierarchies as has Maslow. Combs, as we have noted, sees the need for adequacy as the basic source of motivation, the impetus to achievement, calling it a great driving, striving force in each of us. We can infer from Rogers (as discussed later) that we are drawn toward goals of our choosing when we feel accepted, secure, and trusted. We can note that the humanist's concept of basic needs are internal, innate, personal—rather than being external, learned, and mechanical as suggested in the three views of learning discussed earlier in this article.

Learning and Self-Control

A second general principle shared by the humanists is that learning is closely related to self-awareness and self-control. Some people suggest that humanists are not concerned with self-control but advocate relentless self-indulgence as the rule of life. This is not a true representation; the "Playboy" approach to life has little if anything in common with humanism. Self-awareness implies some workable view of the self as well as of the process of awareness; self-control likewise assumes some workable view of healthy control.

A poor view of self leads to negative views of others, while a good view of oneself has a positive

Diagram 3



result in one's view of others. More than this, a realistic view of one's potential for success and a positive view of self have great power to direct appropriate (that is, self-controlled) goal setting and striving for success. The advice to "get in touch with yourself," and to "be kind to yourself," are basic to the humanistic view as facilitative of effective learning. Choices made by the individual are important; humanists emphasize also the important role of a supportive personal environment.

Growth and deficiency needs remain active throughout life, urging us, on the one hand, forward toward maturity and self-actualization, on the other, fearing growth, we cling to the past, defensive and afraid. Maslow recognized the fact that some children are growers, whereas others seem fixed at the level of unsatisfied deficiency needs. Choices made in this latter context are surely self-destructive.

Growth in self-awareness and control is the consequence of an endless series of choices regarding the attractions and threats of growth. The choices must be made by the individual, although parents, teachers, friends, and therapists can provide a supportive environment in which the deficiency needs are met as fully as possible and can make the benefits of growth more attractive than the benefits of a regressive choice. For teachers the implication is clear: Children learn to know themselves as persons and become capable of self-direction when teachers provide learning experiences that are: (1) free from threats, and (2) valuable by being rich in attractive knowledge and understanding, in which the risk of failure and humiliation is low. The appeal of growth in these circumstances is powerful.

Emotion and Learning

Another important ingredient in learning, say the humanists, is emotion, also called affect. It is a mistake, they say, to neglect this important aspect of experience, either by separating affect from knowing and doing, or by leaving it out of the process altogether. Persons, by their very natures, both know and feel. Feelings occur with knowledge and with action: A mountain climbed, a friend embraced, a column of figures added—each is replete with feeling, knowing, and doing. Life does not divide them artificially. School should not do so either, even while recognizing that different experiences may be more strongly composed of one element than another.

Furthermore, expression of feeling is an important ingredient in learning. Quite often when we read "expression of feeling" we think we are reading "indulgence of feeling" or "physical and direct expression of negative and destructive emotions." That is certainly not what is meant. Indulgence is probably a deficiency and an antigrowth choice, a regression toward an already defensive way of behavior. Negative and even destructive feelings can be expressed in a variety of ways, few of which are destructive or aggressive. We can "be . . . angry, and sin not" if we learn and choose to. Likes and dislikes, sudden joys and satisfactions fill a much greater slice of our lives than the grand passions which are as rare as they are intense. The rich coloration of affect—accepting, expressing preferences, deriving satisfaction, sensitivity, and openness to emotional stimuli—is essential to learning.

Implications for Teachers

For teachers there are several implications of affect expression. Rogers advocates that teachers express unreserved acceptance of students, a willingness to trust, and a comfortable acceptance of open, frank communication as necessary in the teacher's relation with the student. Other appropriate recognitions of the importance of emotions are classroom situations that encourage students to express and develop positive feeling about themselves, to accept without necessarily endorsing occasional negative expressions, and to become more sensitive to the expressed feeling of others.

Humanistic views of learning endorse learning values as an essential part of education, emphasizing that the various techniques described as values clarification provide the necessary strategies. Basic to this concept are activities in which students (1) choose their beliefs after careful consideration of alternatives; (2) prize their beliefs by public affirmation; and (3) act frequently on their chosen and prized beliefs. The three acts—choosing, prizing, and acting—encompass the three major modes of learning: knowing, feeling, and doing. Some humanists say they are not as concerned with the particular values chosen as they are with choosing and the process outlined above, believing that we can trust the chooser to make the best and most useful choice. Maslow's concept of good and bad choosers is a caution to such optimism.

Humanistic Views and Motivation

What is implied for the view of motivation by the humanistic view of learning? A great deal, because it was from considerations of motivation that Maslow and (later) Combs took their direction. First, this view sees persons as motivated toward learning. Whatever variety of humanism, whether secular or Christian, poetically speculative or more scientific, there is agreement that by nature we seek to know and to grow. This optimistic view encourages parents and teachers to help and to let children grow.

Discipline in such a setting could not mean punishment; rather it describes a way of living and learning that allows behavior to be determined by each child, with parents and teachers providing

opportunities for growth. Direction and influence by adults would extend to satisfying children's needs for safety, love, belonging, and esteem, and to helping them make wise choices. The goals of such a discipline would be having children choose freely the opportunities for intellectual, emotional, and behavioral growth. The result would be socially constructive but self-determining, healthy learners, personally but not institutionally defined.

The Humanistic View of Persons

This theory of learning takes an optimistic view of human nature, asserting that persons are innately lured toward growth. Freedom to exercise this growth motivation results in beneficial, positive behavior. It assumes that man can be trusted to be personally and socially constructive. Only alienated persons are destructive in their behavior. Given these views, freedom is desirable. The personality is a growing entity, likely to be distorted by an unfavorable environment; but, given a therapeutic environment of trust and acceptance, most people can reform their personalities toward self-actualization. Rogers believes that an adaptable and healthy personality emerges in an atmosphere of "unconditional positive regard"; a static and defensive personality from conditional regard. Such corrupting influences are the cause of maladjustment. Human potential would be better realized if we were open to more alternative life-styles, permissive of greater diversity, nonpunitive of failure. Humanists believe that this structure is appropriate for society because the most important kind of knowledge is subjective rather than objective, that is to say, knowledge that is assessed without regard to external criteria and set standards outside personal experience. There is no absolute scientific knowledge, only interrelated, personal experiences.

Christians (especially fundamentalists) have recently raised vigorous arguments about humanism, although much of the argument has been muddle-headed. Despite claims to the contrary, not all humanism and Christian thought are diametrically opposed. The view of persons in the previous paragraph would fit quite comfortably in a Christian view, with exception being taken to what is missing rather than to what is there. Christians insist on including the divine-human interaction in learning as in all other human activities, whereas secular humanists disregard this. But Christians are quick to endorse the need for growth, freedom, trust, a benign environment, and so on, within the divine-human relation. A real challenge for the Christian teacher is to make clear and useful, as well as inspirational statements about the ways the Creator and creature relate in learning and remembering.

REVIEW OPPORTUNITIES

1. Write three short sentences to identify the main characteristics of the humanist's view of learning.
2. Humanists advocate values clarification. Name the three processes involved in many clarification techniques.
3. From your classroom observation, record

Order form last page

examples of belonging needs being satisfied, need for knowledge being chosen, and need for understanding being met.

FOOTNOTES

[1] J. S. Bruner, *The Process of Education* (Cambridge, Mass.: Harvard University Press, 1960), p. 33.
[2] _____, *Toward a Theory of Instruction* (Cambridge, Mass.: Harvard University Press, 1966), p. 45.
[3] Barry J. Wadsworth, *Piaget's Theory of Cognitive Development* (New York: David McKay, 1971).
[4] Robert M. Gagné, *The Conditions of Learning* (New York: Reinhart and Winston, 1977).
[5] Ellen G. White, *Education* (Mountain View, Calif.: Pacific Press Publishing Assn., 1903), p. 17.
[6] Robert Biehler, *Psychology Applied to Teaching* (New York: Houghton Mifflin, 1979).
[7] Abraham Maslow, editor, *Motivation and Personality* (New York: Harper and Row Pubs., Inc., 1970).
[8] Carl Rogers, *Freedom to Learn: A View of What Education Might Become* (Columbus, Ohio: Charles E. Merrill, 1969).

Further Reading

The primary source of additional information about Skinner, Bruner, Piaget, Gagné, and humanism could be a basic college textbook intended to relate psychology to teaching. Especially good are Robert F. Biehler, *Psychology Applied to Teaching,* third edition (New York; Houghton Mifflin, 1979), and N. L. Gage and David Berliner, *Educational Psychology,* second edition (Chicago, Ill.: Rand McNally, 1979).

For more specialized applications try Bruce Joyce and Marsha Weil, *Models of Teaching* (Englewood Cliffs, N.J.: Prentice Hall, 1972). This book is challenging but very rewarding because its concepts are systematic and applicable.

Details of specific theories appear in sources mentioned in the text and in footnotes.

Separate Article
Removed

EXAM REQUEST FORM

Journal of Adventist Education Articles
NAD/PAC

Name _____ Date _____

Address _____

_____

Phone _____ Email _____

Title of Article(s) (eg. Light for Living) **Part (I, II or III)**

_____ _____

_____ _____

_____ _____

Send Exam Requests to:

Lolita N. Davidson, Ed.D.
Associate Director NAD/PAC
26249 Mission Road
Loma Linda, CA 92354, USA

Phone: 909.796.4739
Email: lolitadavidson@gmail.com

PAYMENT INFORMATION

Exams cost $30 each. Each part of an article has one exam.
Make checks payable to: ***La Sierra University***

Card Type: Visa MC Discover

Number: _____ Exp. _____

Signature: _____ Date: _____