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ABSTRACT

This set of workshop materials and activities is designed for persons who teach academic and clinical courses to students in professional allied health programs. The workshop consists of a set of short didactic and more extensive experiential activities. The workshop is organized into four main parts. Each part is labeled an activity. The first activity sets forth the basic concepts and nomenclature of motivation and related terms. The second activity is designed to help participants think about and identify their own needs and motives, to analyze and understand individual differences in needs and motives encountered in any classroom. The third portion of the workshop presents principles and techniques for planning instruction to maximize student motivation and achievement. The final activity is a set of guidelines which summarize the concepts, principles, and techniques presented throughout all portions of the workshop. The appendix contains a pretest and a posttest which may be used with the participants prior to and following the workshop to assess learning. The posttest may also be used as a part of the final activity, which is an evaluation of the workshop. (JD)

ENHANCING MOTIVATION AND ACHIEVEMENT

PRINCIPLES AND TECHNIQUES

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April 1977

A set of workshop materials prepared especially for the

CLINICAL and CLASSROOM TEACHING TECHNIQUES INSTITUTES

presented by the

CENTER FOR LEARNING RESOURCES
College of Allied Health Professions
University of Kentucky

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Lexington, Kentucky
April 1977

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Target Audience

This set of workshop materials and activities is designed for persons who teach academic and clinical courses to students in professional allied health programs. It is intended to serve a wide range of persons from the fields which are typically included in the allied health professions. The principles and techniques are generalizable to practically any teaching situation. However, the examples and activities provided are specific to the health professions.

Organization

The workshop consists of a set of short didactic and more extensive experiential activities. The didactic material is provided as a series of short papers in the workshop materials. The information in these papers may be obtained by participants either by reading them or the workshop leader may present the substance of the papers orally in a series of short 3 to 5 minute mini-lectures. If the short mini lecture approach is used, it is recommended participants be given the short papers to read following the workshop in order to allow study and reflection.

The experiential portion of the workshop consists of a series of activities which demonstrate the principles and techniques which are the main content objectives. Other experiential activities include small group problem solving and discussion questions designed to help the participants recognize, apply, and generalize to their own experience basic theories, principles, and techniques concerned with increasing student motivation and achievement.

Content

The content of the workshop is organized into four main parts. Each part is labeled an activity. Within each portion or activity, there are usually a number of tasks, each designed to generalize or extend a particular set of concepts, principles or techniques which are the focus for that activity. The purpose of the first activity is to set forth, in a didactic manner, the basic concepts and nomenclature of motivation and related terms.

The purpose of the second workshop activity is three fold. The first task is designed to help participants think about and identify the origins and effects of their own needs and motives. A second task is designed to introduce them to two major theories of human needs and motives. The last set of tasks is designed to assist the participants in using these theories to better identify, understand, and accommodate the wide range of individual differences in needs and motives encountered in any classroom.

The third portion of the workshop presents principles and techniques for planning instruction to maximize student motivation and achievement. Again there are several objectives. The first task is designed to inform participants about the relationship between program/classroom climate and student motivation and achievement. The second group of tasks are designed to illustrate principles and techniques for increasing student motivation and achievement by proper management of learning and instruction within overall programs and within individual classrooms on a day to day teaching basis.

The fourth and final activity is a set of guidelines which summarize the concepts, principles, and techniques presented throughout all portions of the workshop. Following the guidelines participants are asked to evaluate the entire workshop on several criteria.

The appendix contains a pre and a post test which may be used with participants prior to and following the workshop to assess learning. The post test may also be used as part of the final activity which is an evaluation of the workshop.

Flexibility and Options

The materials which comprise this workshop may be used in a true workshop setting with a workshop leader. The leader should read through the entire set of materials and select those portions he or she wishes to use. Many examples of appropriate activities are provided. The workshop leader also should decide which materials to duplicate to use as handouts with participants. In addition the leader needs to decide how long the workshop is to be. A basic portion of the workshop can be presented in as little as two hours. However, completion of all participant activities and tasks would require at least fifteen to twenty hours. The leader can assign parts of the workshop materials for individual or small group study ahead of time and complete other experiential tasks in single or multiple large group or small group sessions.

The workshop materials may be used in other ways as well. Any individual can learn much by simple reading the workshop papers, the instructions to leaders, and by examining the examples, problems, and activities provided. However, the materials are better utilized by a samll group of interested persons studying the didactic protions, subsequently discussing these and then completing the experiential tasks in an interactive way. The materials are complete enough that any group of several persons can conduct their own sessions without an outside leader. However, one member of the group should be designated as the leader. This person needs to read through the entire set of materials in order to gather the simple materials and props needed for certain activities and to be able to provide some direction for the others.

The entire set of materials including instructions to leaders, short papers, questions, activities, and the appendices are presented in the sequence in which they make a logical approach to running a workshop. It is intended that any participant in any workshop which uses these materials will, upon completion of the workshop, have a complete set of materials which may be (1) studied individually later to acquire additional information, (2) used as the basis for another workshop for colleagues with the original participant serving as a leader in his or her back home setting.

Objectives

The objectives for the workshop have been partially stated above. They may also be found in the summary of techniques and principles (Activity 4, Task 2) which occurs at the end of the workshop. However, the primary content and skill objectives are concisely stated here for convenience.

Following participation in workshop activities and individual study of the materials provided, an individual should be able to:

1. Recognize, describe, and state the major relationships among the constructs of learning, performance, motivation, needs, motives, achievement, personal choice, and pervasive patterns and orientation of life activities.

2. Identify and describe the needs which motivate his or her own behavior patterns, the behavior patterns of students and colleagues and recognize these differences in needs as the cause of individual differences in motive patterns.

3. Describe two major theories of needs and motives and apply them to explain observed behavior and performance in students, colleagues, and self.

4. Be more aware of the source of both long and short term needs, their causes, their wide range among individuals, their influence upon behavior toward being more accepting of persons different from self or from the perceived ideal self.

5. Identify and descibe the major types of program/classroom climate which operate in their own and other real instructional settings and describe their influence upon type and degree of student motivation.

6. State and describe the major dimensions or variables which influence program/classroom climate and which are under the direct control of teachers and administrators.

7. Identify, describe, and apply to their own teaching, principles, and techniques of classroom instruction designed to enhance student motivation and achievement including:

   a. The proper use of the structure of the discipline they teach.

   b. The use of concrete experiences and enactive representation.

   c. The planning of the events of instruction to arrange for conditions which maximize learning, motivation, retention, and generalization.

   d. The use of variation, novelty, curiosity, discrepant events, and incongruity in everyday teaching to gain and control student attention and increase levels of arousal, motivation, and achievement.

8. Summarize the entire general set of guidelines which describe the means by which teachers in their day to day teaching may act to produce improved learning, motivation, and achievement on the part of their students.

9. Use the entire set of workshop materials, or selected portions thereof, to train colleagues in the same concepts, theories, principles, and techniques.

Activity 1

Basic Concepts of Motivation

Motivation is a term which is widely used by lay persons, salespeople, and business managers as well as by teachers and psychologists. Often, in the common use of this term, important aspects of its meaning which have the capability to predict and explain observed differences in the degree and quality of human performance and learning are confused or ignored. The purpose of this paper is to set forth some of the basic concepts related to motivation which have been used by educational psychologists to describe why learning and instruction are possible. The purpose of the entire workshop is to provide participants with practice in the use of these concepts toward arranging for more effective learning.

Motives as Ends and as Means

Motivation is a term used in two general ways in instruction. First, we often speak of motivation as an end in itself. Parents, teachers, and practicing professionals in all fields usually set forth as an important and major goal for students the becoming a highly motivated, life long learner who will acquire good habits of persistence, curiosity, desire for knowledge and the will to learn. The second general way the concept of motivation is used is as a means of increasing achievement. From this perspective parents, teachers and professionals want students to become highly stimulated, excited and aroused by their courses and studies as a means to increase achievement. If a student is excited and aroused about what he is learning, he will learn more quickly, more thoroughly and achieve higher levels of understanding and cabability. He will also seek out and learn other prerequisite concepts and skills necessary to the tasks he wishes to perform which he may not have learned earlfer.

Role of Motivation in Learning

Learning is usually defined as a relatively permanent change in behavior which is due to experience and not fatigue, the effects of drugs or simple physical maturation. Learning is never observed directly. It is always inferred from performance. When a student has been instructed in the proper procedure for administering external cardiac massage in cases of cardiac arrest, it can be inferred the student has learned the procedure and when to use it only after his correct performance has been observed. Motivation is another essential concept to explain learning, since it is postulated as the reason the student will attend to the task and attempt to learn in the first place. If the student is completely uninterested in or actively opposed to learning to administer external cardiac massage, he will not attend to instruction and will not perform, and therefore, learning cannot be inferred on his part.

In any situation we invoke the construct of motivation as a force within the learner which motivates and directs his behavior. Motivation is what causes the learner to pay attention, to persist, to seek to perform well, and to be gratified when he has learned to perform well. The performance he ultimately

exhibits after this attention and striving is what is observed and examined as evidence for degree and adequacy of learning. Figure 1 diagrams this basic relationship.

Motives as Reinforcers

The motivation of an individual also determines what will be reinforcing or rewarding to him. Some people are very curious about and interested in the different kinds of trees that are found in a region. For these individuals walking through the woods with a botonist who explains the various types of trees, or working with a taxonomic key to identify unknown trees is very reinforcing or rewarding. Because of this the person who is curious about trees will learn to carefully observe them and properly identify them quickly and accurately on his frequent hikes through the woods and travels through the country. Other people who may also frequently hike in the woods and travel in the country may never learn to correctly identify trees, even if formally instructed in how to do so, simply because such information and skill is not reinforcing to them. All learning is dependent upon some motive which makes the acquisition of the new information or skill to be learned personally meaningful and rewarding.

Motives Account for Variations in Performance

There are large differences in the intelligence and general scholastic aptitude of college students. There is also wide variation in the academic and professional achievement of students. Common sense would suggest that the variations in performance from student to student are due to underlying differences in intelligence and general ability. However, empirical research consistently shows that less than 25% of the variation in student achievement and performance can be attributed to general intellectual ability or intelligence (Lavin, 1965, pp. 55-56). This means that 75% of the variation among students' academic and professional performance is due to other factors. A large contributor to this variation is the difference between individual students in their degree of persistence, curiousity, excitement and commitment. Differences of this sort are usually lumped together and referred to as the degree to which a student is motivated or not motivated toward learning a given subject matter or skill area.

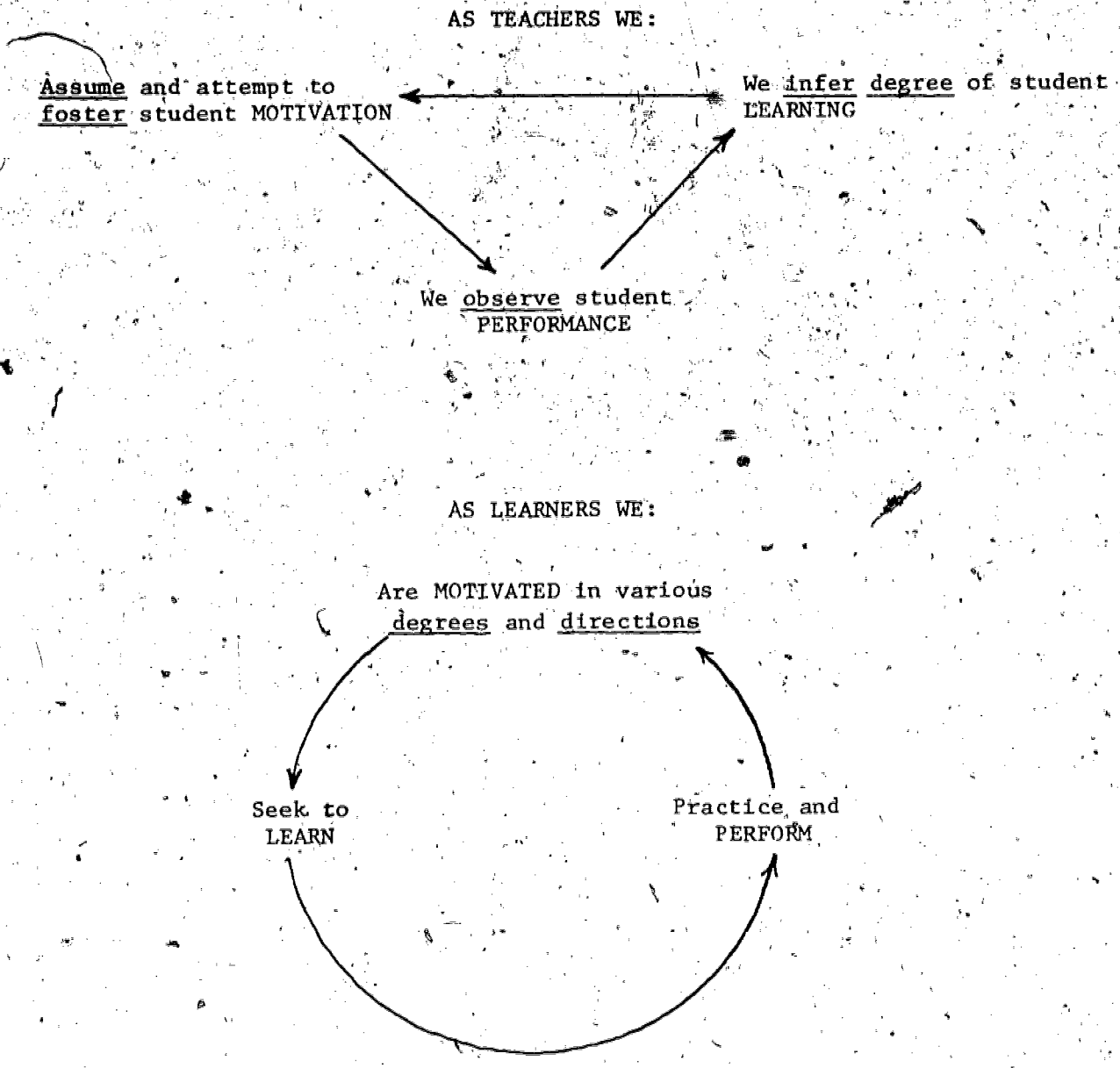
The Learning of Motives and Motive Patterns

Whether or not a student is a curious life long learner who always seeks to learn more about his professional specialty and the world in general is itself a learned pattern. There are many different motive patterns which direct an individual's behavior. These consistent patterns are learned by individuals beginning in infancy and continuing through adulthood.

The concept of motivation is closely related to other concepts such as interests, values, and various needs such as the need for achievement, friendship, social cooperation, independence, competence, love and material things. Some basic needs such as the need for activity, nutrients and physical contact are innate. Most other needs are learned. A person's general orientation

FIGURE 1

RELATIONSHIP AMONG LEARNING, PERFORMANCE, AND MOTIVATION



and striving in life activities is largely directed by the need patterns he has acquired or learned. These need patterns give rise to the pervasive motives and motive systems which direct and control behavior. Thus an individual seeks out some situations and persists in trying to achieve difficult goals while at the same time avoiding other situations and rejecting other goals.

Many of the motive patterns which direct behavior and life activities of individuals are learned in childhood and determine the basic personality of the individual. Thus some individuals learn to be open minded, to enjoy work, like ideas, the learning of new conceptual relationships, and to be independent, curious, and self-confident. Other persons learn to be wary and suspicious, to dislike work and intellectual tasks, to be dependent and conforming, and to feel inadequate and incompetent. Most of the students you work with in a professional program will belong in the first category. Most have been well nutured and educated since the entrance requirements to academic and professional programs generally require basic competence in these types of skills. However, there are still large differences between individual students in these personality characteristics or motive patterns within any program or classroom.

Even though many of these motive patterns are largely learned in childhood and are beyond your control as a teacher, what you do as a teacher can greatly affect further growth or decline of your students' motive systems. The overall classroom and program climate you and your colleagues establish and the ways you teach your classes and interact with your students can either help or hurt them with respect to developing the motive patterns basic to healthy and productive personalities. The last portion of this workshop will deal with ways to enhance the growth of student motive systems through organization of appropriate program and classroom climates and classroom instruction.

Situational Aspects of Motives

Although many motives are in fact stable and pervasive motive systems which cause consistent orientations and behavior patterns in life, there is considerable situational variability within this overall orientation. Changing environmental forces can greatly alter the motives which direct behavior at any given time. An example is a college with a group of students and instructors in a medical laboratory technology program who have been highly committed to high standards of academic achievement and professional practice and have been very well equipped to teach the most recent content, and use the most modern and sophisticated equipment. Now suppose there is a terrible war and the town where the college is located is nearly destroyed. Many students and faculty members and members of their families are killed. Many more volunteer or are drafted for military duty. Under this set of changed environmental circumstances, personal and social priorities change. Other needs much stronger than those which motivate academic excellence have emerged and take over in directing the behavior of students and instructors. Even in the continuation of the program for training medical laboratory technologists, changes would occur relating to the need for the quick training of students in basic first aid and laboratory procedures and duties needed in modern warfare. Admittedly, this example is a drastic change. However, there are many external forces which act on students

and instructors which do very much affect priorities and temporarily bring to fore other motive systems which may or may not agree with those motives related to successful academic and professional performances. Some of these common external forces include falling in love, marriage, death of a loved one, failure in some area of life activity, being drafted, serious illness or accident, childbirth, loss of job or economic independence, loss of esteem, achievement of major accomplishments, public recognition such as being included in Who's Who in America and many more. All persons experience changes in these and related external forces which in turn temporarily or sometimes forever change the orientation of their motive systems and behavior. Often the changes are temporary and the person eventually overcomes the problem and resumes his typical life orientation.

Teachers need to be sensitive to and aware of these situational factors which frequently influence learning and motivation strongly and directly. At the lowest level are very short term changes in orientation and persistence due to hunger, lack of sufficient motor activity or recreation which often cause a student or instructor to temporarily fail to attend or be excited about a lecture or activity. At the higher levels of operation are major problems which incapacitate an individual emotionally or intellectually for days, weeks or months.

Theories of Motivation

There are many different theories of motivation. Two of the most useful theories which have generated much research and which provide useful interpretations of the teaching-learning process are the Murray needs taxonomy and the Maslow needs hierarchy. The next portion of this workshop is devoted to these theories of motivation and their interpretative and applicative use in teaching.

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Application of Needs-Motive Theory

Activity 2
Task 1

Identifying Motives

What are some of the things you need that motivate your own behavior? Think of things you do for fun, aspects of your work you especially like or dislike, things you do anyway even though you dislike them, situations you avoid, accomplishments you have worked very hard to achieve, etc. Don't restrict your considerations to only your work. Rather consider many aspects of your life including your appearance, friendships, social life, family, place of residence, recreational activities, and major life choices. What is it which makes you exhibit the behavior you do in each of these areas of life activity?

Make a list of some of the prominent activities in your daily life, and other less frequent but major activities which at some previous time or now demand your attention, time, and energy. After you have listed a variety of activities, try to determine the reasons you engage in that activity (e.g., the need(s) it fulfills for you).

Work the other way if you wish, listing your needs first and then the activities you undertake to try to meet those needs. Work quickly and individually in compiling your listing. (3 minutes)

Important Activity	Need(s) which direct and cause (motivate) the activity

Activity 2
Task 2

Categorizing Motives

Now that you have individually identified some of the needs that direct important aspects of your own behavior, share whatever portion of your list you wish to with the other members of your group. After everyone in your group has contributed, complete the following tasks. (10 minutes)

1. Are their common needs across all the individuals in your group? If so, what are some of these?

2. Try to arrange the needs you have collectively identified into a group of categories, e.g., physical needs, social needs, etc. Have one person jot down the categories you collectively compile.

3. After you have categorized the needs you identified, answer and discuss the following questions.

   a. Have any of the categories or needs influenced your academic and professional or other major life choices in the past? (e.g., Whether or not to marry, who to marry, where to live, what kind of car to buy, whether or not to buy a motorcycle, join an organized religion). How? Give specific examples.

   b. Did any of these needs ever determine how much you enjoyed or disliked a particular aspect of your own professional training and your current professional work? How? Again give specific examples.

   c. To what extent are some of the needs listed by the individuals in your group different from one another? If you have trouble with this one, try asking each person to indicate some common specific thing about themselves such as, what kind of car they drive or their favorite way to spend a Sunday afternoon. Try to identify why one person <u>needs</u> one type of automobile and another a different type or why different types of relaxation and recreation are needed.

Activity 2
Task 3

Theories of Individual Differences in Motives and Their Implications

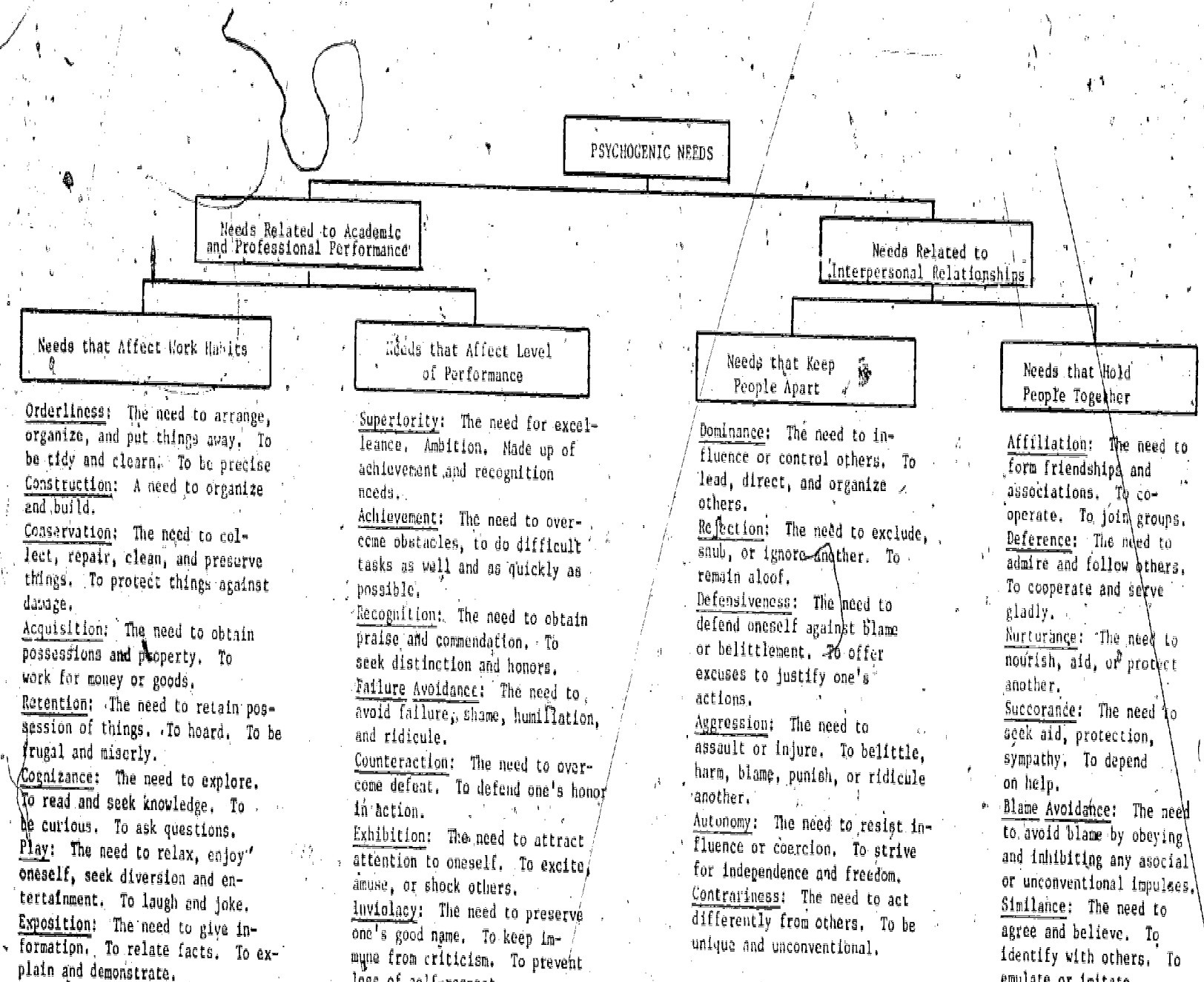
There are a number of different theories by which to categorize human needs as the motives for behavior. One of these is Murray's (1938) list of psychogenic or non-physiologic needs shown in Figure 2. In the Murray system individuals are characterized as generally having all twenty-eight categories of needs to some degree. However, individuals differ greatly in terms of which needs are most pressing and responsible for their behavior and choices. For example, many studies have shown while all persons have needs for both achievement and affiliation. The relative dominance of these needs varies greatly from person to person. Some persons have much stronger affiliation needs than achievement needs. These people value friendship, cooperation, and social activity much more than individual striving to accomplish difficult tasks of a professional or academic nature. Other people are just the reverse. They have a great need to achieve and excell in their professional or academic field and care much less about friendship, socializing with other people or belonging to a group.

Another categorization of needs is the Maslow (1954, Gage & Berliner, 1975) hierarchy, shown in Figure 3. The Maslow hierarchy includes both basic physiologic and psychological needs. The needs fall into a hierarchy. The higher needs are capable of motivating and directing behavior only after the lower needs have been met on a regular basis. If there is a conflict between a lower need and a higher need, the lower need predominates and directs the individual's action. The most basic needs are physiologic and include the need for water, food, air, sex, and physical activity. These, as all other needs in the hierarchy, can never be met permanently--only temporarily. However, any level of needs can become non-problematic for an individual. If the needs at that level are met on a regular basis, the individual is freed from worrying about them and behavior is motivated toward meeting the needs at the next higher level which are not routinely assured.

As an example, consider an adult who was never nurtured very well in an emotional way as a child. Suppose this person's parents never loved him and that he never felt that he belonged to a family or other group. In such a case, the individual's needs for love and belongingness remain problematic. Maslow's theory predicts that until this person's love and belongingness needs are met on a regular basis, most of his behavior will be directed toward getting other people to accept and love him, to belong to someone or some small group. Only after this need level is no longer problematic for the individual will his behavior be directed toward

TABLE 2

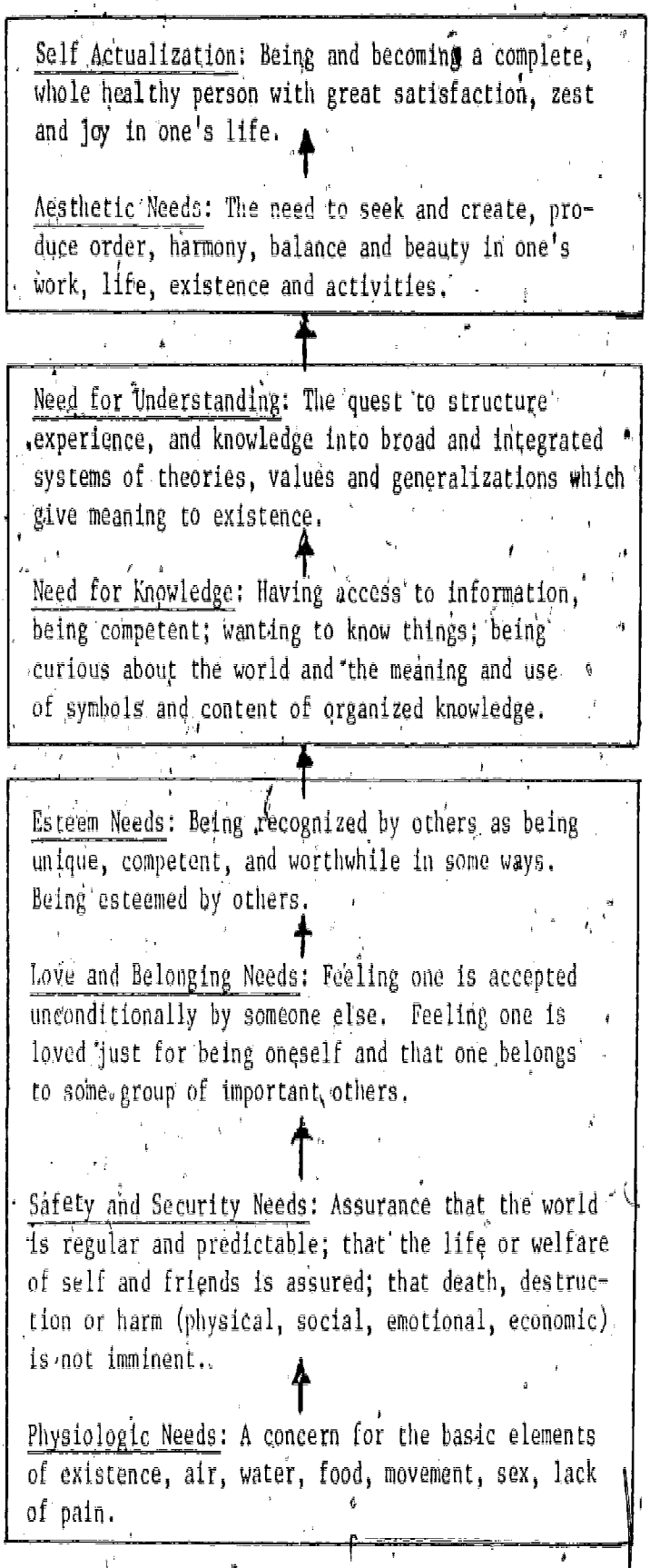
MURRAY'S NEEDS-MOTIVE SYSTEM



Adapted from Murray, 1938 and Gage and Berliner, 1975, p. 285.

FIGURE 3

MASLOW NEED HIERARCHY



Aesthetic and Creative Needs

The ultimate and ideal state of a fully functioning human being

Intellectual and Achievement Needs

Growth oriented movites that are intrinsic in origin. These needs are gentle and continuing and grow stronger when fulfilled. Primary orientation toward these needs characterize the growth oriented person

Social and Affiliation Needs

Safety oriented motives that are extrinsically controlled. By definition these needs are controlled by others. When denied or not adequately met these needs become strong, recurring and more compelling. Primary orientation toward these needs characterize the safety oriented person.

Physical and Structure or Organizational Needs

Adapted from Maslow (1954), and Gage & Berliner (1975) p. 286.

striving for higher levels. This relationship holds between each pair of higher and lower needs in the hierarchy.

There are two major divisions in the Maslow hierarchy. The first cluster of needs are the deficiency or maintenance motives which include the first four levels. By definition the meeting of these needs is contingent upon their being granted by other persons. These needs are extrinsically controlled. The second major category are the being and growth needs which include the top three levels. These needs are intrinsically controlled. Satisfaction at each level comes from within the individual. Other persons cannot grant these needs.

Maslow and many other theorists and researchers have found individuals tend to be globally oriented toward functioning either at an intrinsic or extrinsic level of motivation. Maslow described this difference as a person's tendency toward being safety or growth oriented. Rotter (1966) describes the difference as persons with either an internal or external locus of control. Many other psychologists (Gage & Berliner, 1975, pp. 294-300) have described this difference in terms of a balance between motives to succeed (M_s) and motives to avoid failure (M_{af}). Safety oriented persons tend to be externally controlled and $M_{af} > M_s$. Growth oriented persons tend to be internally controlled and $M_s > M_{af}$. Still another conceptualization of this basic difference between individual orientations toward intrinsically versus extrinsically motivated behavior is deCharms (1968) notion of an individual's view of himself as an origin or a pawn. When a person experiences himself as the cause of his own behavior, choice, and action he is an origin. However, when a person believes his actions, choices, and behavior are necessary responses demanded by other persons and forces, he sees himself as a pawn.

All of these theories have direct implications for teaching, learning, and the supervision and execution of professional duties. Persons with orientation toward growth needs tend to be healthier and more productive than safety oriented persons. In Bruner's (1966) terminology growth oriented people are equipped with the emotional and intellective skills which allow them to cope with their work and life in a very effective and enjoyable manner. Such persons thrive on their work and academic tasks and derive great pleasure in learning more and becoming more competent. However, the orientation of the safety oriented person is quite different. The main attempt is to defend whatever status or security one has acquired. The defender is anxious, uneasy, suspicious, and primarily concerned with preserving and maintaining present status. The problematic and complex nature of the professional world can be much more effectively dealt with by persons with a coping rather than a defending orientation. The learning of the academic content and clinical skills basic to one's field is much more complete and generalizable to future growth and professionalism for persons with a coping orientation. Persons with a defending orientation are much more likely to learn the academic and clinical content and skills of their field in a narrow or literal sense. The activities which follow should help you see how these theories apply to explain major differences in student motives you have undoubtedly observed.

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Activity 2
Task 4

Application of Needs-Motives Theory to Explain Individual Differences in Behavior

The purpose of this task is to help you apply the theories you have just encountered to explain situations and behavior you have observed. You will have about thirty minutes to complete this task, fifteen for the Questions task and fifteen for the Problems task. To prevent bogging down note the time suggested for each component. Try to move completely through the activity in the time allowed.

Questions

1. In the previous portions of this activity, you listed some of the needs which motivate your behavior and then categorized them. Quickly examine Figure 2 and Figure 3. Are the needs you identified and categorized represented in the Murray list and Maslow hierarchy? (2 minutes)

2. Each person in your group should now recall students you have taught or supervised in your specialty in the past. Identify a student you have known who was outstanding in both academic performance and professional practice. Using Murray's list check off the motives the student consistently displayed. Repeat the procedure for the worst student you can recall, this time using an X rather than a ✓. Do this quickly and individually. (2 minutes) Discuss these questions in your group. (10 to 12 minutes)

   a. What profile of needs do you see as the appropriate motives for students entering your field? Why?

   b. Are there differences between the needs which motivate excellent classroom academic performance and those which lead to excellent clinical performance in your field? Explain.

   c. Does effective professional practice in different clinical fields require different patterns of needs-motives? What are the similarity and differences between the needs profiles for a laboratory technician, a counseling psychologist, a clinical nutritionists and a physical therapist?

   d. Think back again to the outstanding and poor students you identified.

Is the Maslow conception of safety versus growth orientation useful in explaining the differences between the two?

Problems

Watch the role playing episodes and listen to the accounts related by the workshop leaders. After these have been completed, attempt to interpret one or two situations in terms of the needs and motives theory you have learned. If you prefer, concentrate on one situation. Your group will be asked to briefly explain one situation in terms of appropriate theory. You will have 10 minutes to make the interpretation and 2 minutes to present it to the entire group.

Attention Workshop Leader

Examples for the Problem Section

of Activity 2, Task 4

The examples given below are intended as realistic situations which illustrate how theories of needs and motives can be used interpretatively to explain individual differences and describe differential effectiveness of instructional procedures.

When carrying out Activity 2, Task 4, the workshop leader should use these or other examples and either describe or role play them using members of the training group. Role playing is often a more dramatic and motivating way to present such examples.

The workshop leader should encourage a wide range of interpretations by the training group within the theory and not require that the group interpretations be standard. For convenience, a brief interpretation of each situation is made. These should not be described or given to the students until after they have completed the task of interpreting one or more of the situations.

Example Situations

Example 1: Role play situation with simple props such as chairs for booths.

Narrator: Scene: Individualized learning laboratory or study center in a dental school where all dental hygienists complete their academic course work. The lab is set up with individual booths just large enough for one person. The booth contains a tape recorder with one set of ear phones hooked to a carousal slide project. The course content is oral pathology. There are 4 empty booths when two students enter. One student, Gwen, has just begun working on lesson 5 in the course.

Enter Nan and George

Nan: Hi, Gwen.

Gwen: (Looking up) Hi, Nan! Hi, George!

George: What lesson you doing?

Gwen: Number 5.

Nan: Hey! That's the lesson we came to work on too.

Gwen: Good! Let's work together! Come on, there's room. Just squeeze in.

With that Nan and George get two chairs and all three students crowd into the same booth, their heads close together sharing the one pair of earphones, viewing the same small screen and every now and then stopping the program and engaging in a lively conversation about what they have just seen.

Example 2: Role play or describe the situation.

Narrator: Scene: A hospital room with a burn patient, a physician and a physical therapist present. The physical therapist is a recent graduate of a good P.T. program and has completed all the appropriate academic and clinical training courses successfully.

Physician: Better work on that left arm and leg.

P.T.: Okay.

Physician: Hey, he looks kind of messy! Didn't you complete the debrisment I ordered yesterday?

P.T.: No. I'm not sure how to do it.

Physician: Well, my God man! Its got to be done! No time like the present. Watch me and then you try it!

Narrator: The physician shows the physical therapist how to execute the debrisment and then watches him carry out the procedure. When they have finished the conversation continues.

Physician: Didn't you ever work on the b[illegible]d when you were in training?

P.T.: Sure. Everyone has to.

Physician: How come you never learned this basic procedure?

P.T.: I dunno. Guess I never had to

Example 3: Describe the situation or role play it.

A physician has called for a urine culture on a patient. The hospital laboratory supervisor sends a recent laboratory technologist graduate to the floor to collect the sample. The supervisor reminds the student that the sample must be a "midstream clean catch." Upon entering the room the technician finds the patient to be an attractive and imposing

middle aged woman. The technician, obviously flustered, gives an inaccurate and incomplete account of how the urine must be collected. The patient says with great indignation, "Well, you don't think you are going to help me obtain the sample do you!" The technician looks away and says, "Oh, no! Just go into the bathroom and get me a sample the way I told you to!" The patient does so without proper instruction or supervision.

Example 4: Describe or role play as a discussion among department faculty and administrators.

Many of the courses in the academic area of clinical programs for dental hygienists and other health professionals have been designed as programmed instruction. The completed programs are placed in central "learning centers" where students may come at any time to use the programs. This type of instructional technology has been widely used in other areas as well including business administration, secretarial, and bookkeeping courses. Often when a course or a series of courses are presented this way, many students complain. They often feel the courses dehumanize them. How can such feelings be explained in terms of the Murray needs list? Can a real live instructor and classroom better meet the range of student needs than a well developed standard programmed instruction course? Can the well designed programmed instruction course meet some students' needs better than a regular class? What combinations of each are desirable and optimum?

Example 5: Role play or explain the situation.

Narrator: Scene: A physical therapy room in a hospital with a P.T. instructor and about 9 P.T. students. The instruction is in the teaching of hemiplegia patients to use a toilet for urination and defecation without assistance. Initially much assistance is needed by the therapist. There are 6 patients present who need to be taught to care for their toilet needs.

Instructor: Ok. I will help our first patient, Mr. Evans. You watch and one of you help me.

Frank: I'll help!

Narrator: The instructor and Frank assist Mr. Evans in getting to and sitting on the toilet. The instructor gives some more advice, answers a few questions and asks for another two students to assist another patient. Bea and Jack immediately volunteer, and assist the next patient.

Instructor: Ok. I want all of you students to help at least two of these patients.

Narrator: The instructor is called out. The students take turns helping and instructing the patients. Doris turns to another student, Harold and makes an excuse to leave.

Doris: Hey, Harold, I've got to make a call. Be right back.

Narrator: Doris exits and returns only when the instructor, who has returned, is wrapping up the session. In subsequent training sessions, Doris always manages to avoid this activity. She graduates without ever having assisted or instructed a hemiplegia patient in toilet activity.

Brief Interpretations of Each Example

Interpretation—Example 1: Three in a booth.

The crowding of a number of students into a single booth has frequently been observed. In programs where students do much of their academic work through automated instruction, the affiliation needs of students may not be adequately met. Working together in a group of 2 to 4 students not only satisfies these needs but can also aid achievement. The dialogue and interaction among students about the content can make learning more meaningful and generalizable. Some learning centers using automated instruction now build booths large enough to hold 4 or 5 students and equip audio recorders with multiple earphones.

Interpretation--Example 2: Debrisment

Some students are more safety oriented and less growth oriented than others. Some are more motivated to avoid failure than motivated to suceed. Some tend to defend a little more than cope. This may be particularly true when a procedure is dangerous, unpleasant, or painful to a patient or where risks are high for some other reason. In such situations a more safety oriented person will hang back, letting someone else take the risks, in short "playing it safe." The student's final comment is a good indication of his prevailing orientation. When asked why he never learned the procedure, he says, "I dunno. Guess I never had to!" Consistent behavior of this type form a student implies a safety orientation with an external locus of control.

Interpretation--Example 3: Midstream clean catch

The interpretation made for example 2 above applies here as well. It also shows, as does example 2, that the safety needs of a student or a professional can be strong enough to prevent rational behavior. The consequences of failure to collect a sterile urine sample could be an

inaccurate laboratory report and possibly improper diagnosis and treatment. The need of the technician to avoid an embarrassing situation (a form of safety need, possibly a lack of dominance needs and assertativeness) led to neglect of duty. The technician should have been trained to deal with situations of this type or to call for assistance if he could not.

Interpretation--Example 4: Dehumanization

Highly automated instructional programs tend to isolate students from academic and social dialogue with peers and teachers. Some students with low affiliative needs and high achievement needs are not bothered by this. Other students with high affiliation needs are frustrated in such situations. A combination of highly accurate and efficient automated instruction courses coupled with small group seminars among instructors and students is probably the best way to meet both sets of needs. Most students have reasonable degrees of both types of needs and can profit from both modes. Automated instruction or self-instructional programs designed for use with small groups is another option which is effective. Ideally several options ought to be available and students encouraged to find a blend of modes of instruction which best fits their individual needs.

Interpretation--Example 5: Toilet training for hemiplegia patients

The interpretation for this situation is very similar to those for the debrisment and clean catch examples. Some students have an ability to blend into the background. These students may go through all their academic programs and clinical training and never practice and perform vital skills and procedures. It is practically a certainty that in training any student will not learn and practice some skills and procedures he or she will later need. However, some students who may be too strongly safety oriented manage to emerge with many gaps in their capabilities. Sometimes these gaps are the technical skills and information themselves. Oftentimes they are more likely the human relation skills, judgment, assertativeness, warmth, etc., skills needed in patient management.

Activity 2
Task 5

Recognizing and Dealing with Individual Needs and Motives

Because they have freely chosen to enter your field and academically prepared to enter college and professional training, most of the students you encounter are talented and healthy people in terms of their basic personality and academic skills. Most of them are high in achievement needs and interested in helping other people. Some of them are less sure of themselves and some are overbearing. Some are neat and orderly and some sloppy and disorganized. Some are too cautious and afraid, others too impulsive and independent. Within the wide array of needs which motivate behavior, no two of your students are alike.

There is also a wide range of variation in need profiles which exists across persons in your field who are effective professionals. To the degree that it is possible, instructors should recognize these differences among students and accept them. To the degree that individual students have strong and persistent needs that interfer with their effective performance, they should be identified, helped to overcome their problem or screened out of professional practice where their needs will interfer with their practice.

Identifying and dealing with these individual differences in students is a complex task with which many researchers are concerned (Carkhuff & Truax, 1966; Carkhuff, 1969a, 1969b; Aspy, 1969; Gazda, 1971; Carkhuff, 1972; Cole & Lacefield, 1975). It is not possible to detail the techniques and procedures available for this task in this set of materials.[1] However, it is possible to quickly set forth a few elementary guidelines which should help you begin to recognize and deal with the individual needs which motivate student behavior.

Guidelines

1. Get to know your students. Call them by name. Talk with them. Ask them what their opinions are on matters and practices related to patient care and professional activities in your field. Ask them to make value choices and explain their choice (e.g., Is it better to study alone or in a group? Would you rather work with children or adults in P.T.? Should a patient be treated against his will? If ordered to carry out a medical procedure by a superior on a patient

[1] You are invited to refer to the references listed, if you desire more information.

who refuses treatment, would you perform the treatment? Why or why not?) Don't always impose your views on your students. Listen to what they have to say and question their choices and commitments, not sarcastically and in a threatening way, but in a sincere, gentle, and persistent way. Help them to clarify and learn their own values, hangups, fears, and competency limits. Encourage dialogue among your students in the same manner and for the same purpose. Reveal your own hangups, unresolved values, choices, and strengths when appropriate.

2. Treat your students as individuals. Don't expect them all to be alike or to be like you. Don't refer to them or think of them as a group or as "them." Think of them as George, Ann, Burt, Alice, etc. Concern yourself with those aspects of their behavior which relate to performance. If George is in training as a lab technician and he wears the same pair of field pants for 6 weeks with tabacco and pipes kept loose in one large flap pocket, why worry about it? If you find his grooming habits personally distasteful, tell him so for he will know it anyway. Say, "I am sorry George, but the way you dress really turns me off." However, unless his grooming habits interfere with his clinical performance, respect his right to dress and groom himself as he wishes and don't make an issue out of it or let it interfere with your judgment of his performance.

   If you have four ways to teach removal of plaque from teeth (a film, a learning program, a demonstration, and a manipulative model) let students select which ever mode they want to use and encourage them to use several. Not everyone has to do the same things at the same time. If four students want to sit in the same booth built for one person for an automated instruction program, let them do so even if a four student booth is available.

3. Remember that behavior is very variable and often situational. Needs change. In a class discussion of the physiology of the kidney, Jerry may be an articulate and impressive contributor. In the x-raying of a victim of a motorcycle accident he may be frightened, inarticulate, and incompetent even though he has carried out the procedure many times before with other students as patients or with less taumatized real patients. Remember that Carol, who is always meek, polite, overly deferent, and submissive in your presence because you are the instructor, can become insensitive, nasty, and psychologically destructive with a patient whom is incapable of fighting back and whom she dislikes. Remember that if you want to see how Carol or Pete or Sylvia relate to patients you must look at their record of performance, talk with patients they have worked with, and frequently observe the actions and choices they make in real and hypothetic situations.

4. Encourage students to identify problems and tasks they do not cope well with and to find ways to do so either by asking for assistance from others or by choice of area of assignment within their field as

a graduated professional. Not everyone, dental hygienist or physical therapist, has to work with children.

5. Keep good and complete records on your students' performance. Clearly specify the tasks, skills, and procedures which must be learned. Insure that every student is instructed in and performs each of these. Without some sort of checklist for each student it is impossible to determine what procedures the student has actually practiced or not practiced. If you are not already using such a system or an individual performance record for each student, take a look at the cub scout individual record in the appendix. Admittedly, the cub record deals with few and often more global accomplishments, but it is an easy way to chart and record individual student growth and accomplishment. You can easily prepare a similar record suitable to the skills or procedures you teach in your clinical and academic courses. Simple final examinations on academic content are not adequate. Ideally, examinations should be ongoing and part of instruction.

If you follow these guidelines, your instruction will not only be more effective but your students more motivated. It feels good to have your needs recognized and respected. Learning cannot occur without motivation. Motivation springs from individual needs.

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Activity 3

Planning Instruction to Maximize Motivation

There are great variations in the directions and strength of individual needs which cause a wide range of differences in student motivation. Some of these differences between students are related to stable personality patterns. However, the teacher still has the capability to foster high levels of student motivation or to "turn students off."

It is the purpose of this portion of the workshop to describe conditions and techniques which the teacher controls and which can be used to increase student motivation in academic and clinical courses. This section of the workshop is divided into three portions. The first portion concerns the overall program and classroom climate which the teacher establishes and which influences student motivation and achievement. The second portion concerns the design of given individual units of instruction such as lecture, lesson, or other short instructional component. The third section consists of some general tips related to teaching which can help foster high levels of student motivation and achievement.

Activity 3
Task 1

Program/Classroom Climate

Read the descriptions of the three programs or classroom which follow. Then discuss the questions which are found at the end of the descriptions.

Description 1

A professor of clinical nutrition in a university college of allied health regularly teaches several courses in nutrition including both introductory and upper level courses. This professor is a well known authority in the field, having written several books on the topic of nutrition and food service within health care institutional settings. She is the chairperson of her department, a major determiner of the policies of the clinical nutrition program and also is responsbile for hiring, evaluating, and promoting or firing faculty in her department. In operating both her classes and the business of the department, she usually proceeds by stating many specific rules and procedures which she insists be followed. For example, she insists that copies of all lecture notes and exams of new professors be turned into her office two weeks before they are to be presented in class in order that she may review them. She also personally selects or formally approves the textbooks to be used in every course in her department. She also insists that faculty members be in their offices or classroom from 8:00 to 5:00 and that they sign out and in when they are out of the office supervising students or attending meetings. Faculty members who do not comply are punished with poor evaluations and non-promotion. Over a period of five years this woman has compiled a staff of faculty who generally comply with her commands and wishes, and who rate her as a good departmental administrator.

In her dealing with students, the professor rules with an iron hand. She personally advises all students in her department and determines their course of study including the choice of electives! In her classes and conferences with students she is very formal and impartial. She tolerates no discussion among students in her classroom or any other form of interaction. She views any type of student cooperation in a course as a form of "cheating." She will not tolerate any variety of student dissent. Students who question any of ther rules or procedures or who are late to class are dealt with severely. She has a reputation for failing students who argue with her or who do not dress in compliance with her rules (no jeans, sweatshirts, or sneakers, no beards on males). Sometimes she punishes a student with whom she is displeased by making them take extremely difficult electives in mathematics, physics, or chemistry. She also demands very high levels of achievement from students and is very proud of the high scores earned by her students on the state licensing examination. Many of the students who enter the program although excellently qualified to complete the course of study, drop out before graduation.

Students who do comply, work hard, and achieve well are rewarded. The professor makes diligent attempts to place these students in the "best" field experiences and "good" jobs after graduation, often personally intervening on their behalf.

Description 2

A program in community nutrition requires students to complete a specific set of basic courses in biology, chemistry, physiology, sociology, psychology, etc. prior to admission in the junior or senior year. Once admitted to the program students complete an additional 60 semester hours over a two year period toward a B.S. degree. Within the program there are requirements for graduation which specifiy the completion of certain advanced courses and the completion of actual pre-graduation experience in the field agencies under professional supervision. The chairman and most of the faculty in the department feel strongly that the practice of community nutrition is primarily based upon effective human relations and counseling skills. Great emphasis is placed upon fostering understanding, openness, and friendship among students and faculty. Students and professors call each other by first names and freely socialize. Students select an advisor to assist them in planning their program. Switching of advisors and programs by students is common, as is the dropping of particular courses by students and the substituting of new courses after the first few class meetings each semester. In most courses students receive "A's" as grades even though examinations are not given and some students obviously do marginal work.

In the on-the-job training component, students are responsible for making the initial contact and finding an agency and person who will supervise them in the field experience component of their program. No formal evaluation of the student's work in the field is made and no one in the department is responsible for assisting, assigning, or keeping records of the student's overall program of study or the field work component. No list of approved field agencies is available. No list of required tasks or competencies for students to achieve in the program or the field experiences is provided. Students complete field experiences in settings as diverse as teaching YMCA evening classes on nutrition to helping with the planning of a lunch program in a rural school. Often times students work with little or no supervision.

Upon approaching graduation many students are found to be lacking one or two courses required for graduation. Appeals for exceptions to the requirements directed to the College dean and graduation committee are common. Sometimes these appeals are granted but they are also sometimes denied. When such appeals are denied there are often bitter accusations between students and their advisors or among, faculty, students and the dean. Many students who do complete the requirements and graduate do not take the state licensing exam. Some students who do apply for and take the exam pass it and do well. Many others fail the exam or perform poorly. Students who graduate from the program often obtain jobs only marginally related or

not related to community nutrition. A few students do go on to become outstanding and successful professionals.

Description 3

A clinical nutrition program in a college of allied health at a large university requires a two year prepatory program which involves completing a series of foundation courses in general studies and science courses such as chemistry, biology, anatomy, physiology, etc. After admission to the program students can work toward both a B.S. and an M.A. degree by completing an additional 30 to 36 hours beyond the B.S. The required courses for the bachelor degree program are well desgined and sequenced. They are taught in a variety of ways including an auto-instructional learning laboratory where students may go at any time, day or night, to hear lectures and study learning materials and programs which have been prepared for individual use. Students are free to determine when and how often they will study. They are also free to attend more traditional classes in the same subjects taught by a regular professor or use both options at the same time. Anytime students wish, they may assess their knowledge of course content by taking a test in the test center. Tests may be repeated in different forms up to four times on any given topic. Instructors and students regularly use the tests to diagnose areas in which additional instruction is needed.

Groups of from 6 to 12 students are assigned to a given instructor who serves as an advisor, meets regularly with the students in small seminars to discuss academic course content, and assists in the supervision of the clincial work of the students. Social contact between instructors and students is frequent, warm, and friendly but almost always restricted to topics and functions relating to courses and professional matters. Students are encouraged to help one another in their academic and clinical work. Student accomplishment and achievement is rewarded by promotion to the next unit of study and the next course. Student failure is diagnosed through testing and observation of performance. The cause of failure is remediated whenever possible by assigned individual study and small group seminars. Sometimes students who lack competence in basic academic or professional skills are counseled out of or dropped from the program when remediation does not work or when it is impossible.

Generally the program and the courses within it are highly structured but there are many options for specialization, especially in the M.S. program. Students are able to plan a program with an advisor directed toward pediatrics, community nutrition, cardiac and vascular disease, etc.

No student can complete either the bachelor or masters program without successful completion of all required and elected courses and mastery of the competencies stated as objectives for the supervised clincial experience component of the program. A wide range of clinical settings is available to students who make application through their advisor for the types of settings which relate to their program. Clincial field experiences are supervised by

qualified professionals and the student's performance evaluated on a list of major competencies which are set forth as goals for each type of clinical experience.

Graduates of the program routinely apply for and pass the state licensing exams. Those who do not are allowed to register for and repeat portions of the course work in which they may have been deficient before repeating the licensing examination.

Questions

1. If you were a student in a nutrition program which of the three programs described would you prefer? How about if you were a faculty member in the program?

2. Each of the three programs described are quite different. Do the people (professors) operating the programs have different needs which are expressed in the way they manage and operate their classes and programs? Recall the Murray and Maslow needs theories.

3. Which program do you feel is likely to foster the higher level intellectual and achievement needs shown in the Maslow hierarchy? (Figure 3) Why? Which program do you feel threatens student needs for safety, security, esteem, and social affiliation? Why?

4. How [illegible] an individual instructor structure the classes he or she teaches to be similar to these examples independent of the overall program climate?

Activity 3
Task 2

Instructor Needs and Classroom Climate

Although the descriptions of the three programs presented in the previous section are fictional and any resemblance to actual nutrition programs or professors is coincidental, each description is representative of program and classroom climates which are often observed in fields as diverse as foreign language, chemistry, history, counseling, economics, and allied health college programs. The professors who plan, operate, and teach courses have strong need dispositions or orientations just as do all persons. The type of need disposition of a professor or a group of administrators and professors shape the program and classroom climates. The classroom climate in turn plays directly on student needs and motives and influences achievement or a lack of achievement.

Many scholars and researchers have studied the interaction of teacher needs and methods of control with classroom climate and student behavior and achievement. Table 1 summarizes some of this work particularly as integrated by Alscher (1968) and presented in Gage & Berliner (1975) and other sources. When Table 1 is examined each of the prior program descriptions are found to be easily categorized into a particular instructor need orientation and the associated characteristic classroom or program climate.

If either Table 1 or each of the prior program descriptions is examined and compared with Figure 3, the Maslow need hierarchy, it becomes very obvious which classroom climate is basic to fostering the higher needs for intellectual, academic and professional achievement in students.

The first program, which is described, springs out of the department chairperson's need for power and dominance. It produces a program climate which is restrictive, punitive, and a threat to the safety and esteem of faculty members and students alike. It motivates a strong safety orientation rather than the desired growth orientation which is so vital to producing effective professionals who will continue to grow and learn lifelong. It focuses student attention on playing it safe and avoiding trouble rather than the need to know and understand for its own sake.

The second program also is a threat to esteem and safety needs for most students, although it might not at first appear to be so. Most people, particularly students entering a field they know little about and have not yet worked in, require a good bit of structure and direction to feel comfortable. A complete lack of structure and being forced to

TABLE 1

PROGRAM/CLASSROOM CLIMATE AS INFLUENCED BY INSTRUCTOR NEED ORIENTATION

Climate Dimension	Instructor Orientation		
	Need for Power	Need for Affiliation	Need for Achievement
Amount of Structure	Excessive rules and regulations which demand conformity.	Few rules. Informality and spontaneity are stressed.	Sufficient rules exist to define and foster high performance. Within this structure students are expected to be self-directed
Degree of Student Responsibility	Individual choice and responsibility is not permitted. Permission is always required from the teacher.	No constraints are placed on the student by the teacher. Students are responsible for their own choices and learning.	Student responsibility and choice is encouraged but within the limits and rationale of the overall plan for achievement of goals.
Degree of Risk Taking	Students play it safe doing only what is required. Fear of failure is high. Minimum standards become the ceiling.	There are few or no sanctions against students for errors or risk taking. Consequently some student choices are unrealistic, dangerous or improper.	Individual students are encouraged to risk new challanges and new accomplishments depending upon previous performance and capability.
Degree of Warmth and Support	The teacher is cold or indifferent. Teaching is viewed as an adversary relationship between teachers and students where the strongest will wins out.	The teacher desires and seeks the friendship of students and responds warmly toward students. Friendship is held more important than achievement or anything else.	The teacher likes and respects students and enjoys their friendship, but in the context of achievement of course goals. Achievement and competent performance are respected and valued above friendship.
Rewards and Punishments	Rewards and punishment are based on the teacher's judgment of fairness and rule following by students.	Rewards are consistent and frequent and often independent of quality of student performance.	Rewards are emphasized over punishments but are contingent upon good performance.
Degree of Conflict Tolerated	Little. Students may not disagree with the teacher, who's will is imposed.	Much. Conflicts and disagreements are smoothed over in order not to damage friendship.	Reasonable. Conflicts and disagreements are confronted only when they effect learning and performance. Then they are resolved in favor of achievement and not friendship.
Basis for Teacher Control and Respect	Coercion and intimidation by the legitimate power of the teacher and his ability to assign passing or failing grades. Called coercive, letigimate, and reward power.	Acceptance or rejection of students as friends and subsequent social group inclusion or exclusion. Called reward and coercive power.	The nuturant attitude and expert competence and commitment of the teacher which win him the respect and esteem of his students who seek to emulate his behavior. Called expert, referent, legitimate and reward power.

Modified and adapted from Alscher (1968), Litwin (1966), Lippitt, Fox, & Schaible (1969) and Gage & Berliner (1975) pp. 310-313 and pp. 353-354.

make decisions without needed information or competence is threatening. Being included or excluded from a group without information about what skills or characteristics are required for inclusion is also threatening. Many students in this second program will also have difficulty feeling safe and esteemed for their accomplishments. They too will have their attention and energy focused toward a safety orientation and not a growth orientation.

In the last program described, students' needs for structure, security, and esteem are much more likely to be met on a regular basis. Knowing what the objectives and general procedures for a course of training are is comforting and reassuring. Being recognized for honest accomplishment and competence is esteem building. Being assured that if one fails, second chances will be granted and sincere assistance provided reduces fear of failure. Being able to make choices where one is prepared to choose wisely is supportive of the need to grow and learn. For all these reasons and more, programs with a need for achievement orientation are more likely to be effective in producing healthy motives and maximum achievement. They are also the programs which offer the most effective combination of positive teacher influence on student learning through the power the instructor has over students. This power is derived not only or mainly from the legitimate power of the teacher role and the ability to reward or punish student behavior, but primarily from the expertise, excitement, and commitment displayed by the teacher which wins student respect and emulation and encourages excellence in achievement.

Something to Think About

Examine the programs you work with and the classes you teach with respect to Table 1.

Where does your program or classroom fit? What type of classroom/program climate operates?

Ask your students on a questionnaire or in an interview, if they agree with you?

Which climate would you like to establish? How could you do so?

Within the context of your own classroom, what can you do to promote a highly achievement oriented classroom climate, regardless of outside overall program climate influences?

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Activity 3
Task 3

This section of the workshop consists of the demonstration of a series of techniques which have the potential to make your day to day teaching activity more interesting, relevant and motivating to students. You will actively participate in a series of simulations and learning activities which illustrate techniques which can be regularly applied in the teaching of nearly any subject.

After your participation in some of these activities you will be invited to extend their application to areas of your own teaching. The appendix to this set of workshop materials contains many examples and suggestions which are useful in arranging for more motivated learning. The actual activities performed in the workshop are only a small sample of the possibilities.

The last portion of this section will be a brief outline of tips for teaching which relate to the effective incorporation into your classroom instruction of the theory and technique presented in the previous sections.

Activity 3
Task 3A
Exhibit A

Role of Structure

Workshop Leader Instructions: Use this or a similar activity in connection with Activity 3, Task 3A.

Purpose: To provide insight into the role of structure in enhancing motivation and achievement.

Divide the group you are working with into two sections randomly. Have each person count off by twos, e.g., one, two, one, two, etc. Send all of the "ones" and "twos" into separate rooms. Then give them the task sheet with the word list on it. Make sure one group gets the plain list, the other the list with the structure and diagram. The groups need to be separated in order that individuals in one group do not see the papers of the other group. Have the two groups study their lists for exactly two minutes. Instructions are on the top of the first sheet.

At the end of the two minutes, collect the papers from each group being careful members of one group do not see the papers from the other group. Set the papers aside and do another activity. After about 20 or 30 minutes give a test on the words recalled to the entire group. Allow 2 minutes or less for the test. The test consists simply of asking each person to write down the list of words. Immediately after the test, read off the correct words and have each person score their own paper.

Next, form pairs of persons with one being from group 1 and another from group two. Re-distribute their papers to them and ask them to explain to each other what:

a. they did to study for the test.
b. their score was on the test.

Determine if there were consistent differences between the scores of persons who had the diagram, structure, or organizer and those who had only the list.

Either explain the content of the paper "Conceptual Structure, Learning, and Motivation" to the group or have them read it. Next ask the participants to form groups of 5 or 6 persons and discuss the questions which appear at the end of the paper.

Activity 3
Task 3A
Exhibit A2

Look at the following list of words. Try to remember each word on the list. You have two minutes to study the list. You will be tested on your recall of the list later. You need not recall the order of the words, only the words themselves. You are not allowed to take notes.

platinum

aluminum

bronze

marble

iron

diamond

limestone

silver

copper

steel

magnallium

emerald

granite

ruby

gold

slate

lead

uranium

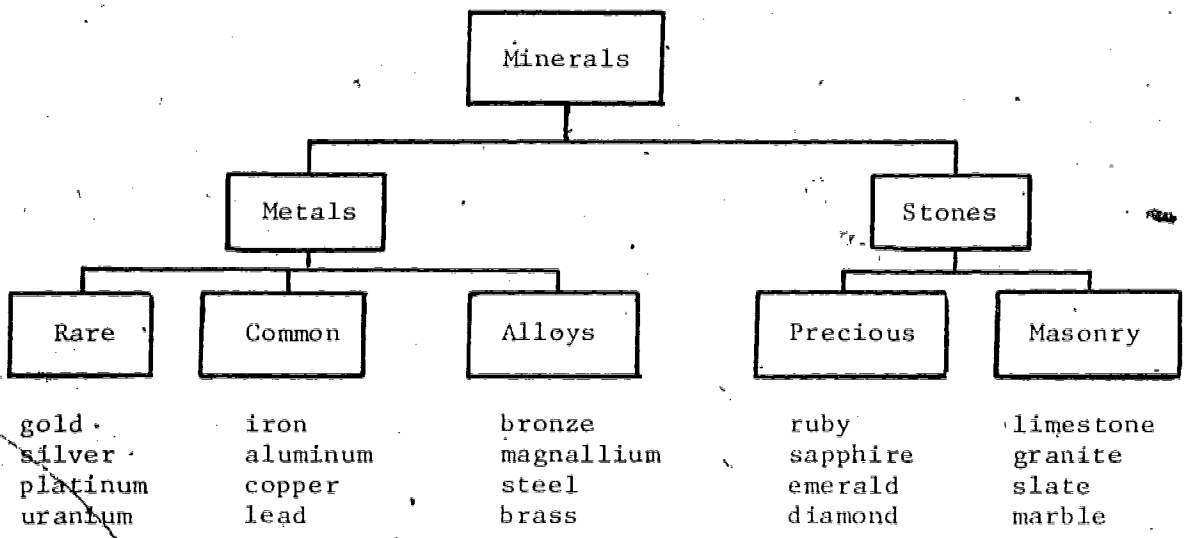
sapphire

brass

Activity 3
Task 3A
Exhibit A2

You have two minutes to study the following words and chart. Each word is a mineral. These minerals may be divided into metals and stones. In addition the metals may be divided into rare, common, and alloy metals. The stones can be subdivided into precious and masonry stones.

Now, look at the chart which correctly categorizes each mineral Notice that each category contains common examples of each type. Study the chart and the individual mineral names. Later you will be asked to reproduce the entire list of minerals. You are not allowed to take notes.



Activity 3
Task 3A
Exhibit A3

Conceptual Structure

Learning and Motivation

In the learning task on remembering twenty minerals, one group received only a list of words. The other group received the same list of twenty words and some additional information in the form of a verbal statement and a chart which categorized each word according to a logical system. This logical organization is an example of what Bruner (1960) means by "structure." It is also called an "advance organizer" by Ausubel (1968).

Simply presenting the list to a student without the advance organizer fails to call attention to prior learned knowledge and concepts necessary to make the recall of the individual words rather easy (Gagné, 1970 & Gagné & Briggs, 1974). Without the structure or advance organizer, a student is forced to contrive his own structure or resort to rote memorization. Rote memorization is not a desirable approach since material learned in this manner is initially learned only with much more effort and is quickly forgotten.[1] In addition, when material can be learned in meaningful ways, rote memorization is often an unpleasant task and is likely to develop unfavorable attitudes toward the content being learned. While the structure which the student imposes on the word list may aid his learning, it is often a structure of less generalizability and utility than a conventional underlying structure taxonomy which exists in a discipline area. Sometimes students use simple mnemonic devices or thematic story lines to remember lists of terms similar to those presented in the activity. An example of a mnemonic which is frequently used to recall the names and sequence of the cranial nerves is "On Old Olympus' Towering Top a Finn and German Viewed Some Hops." Another example is recalling the sequence of colors in the spectrum by remembering Roy G. Biv. Still a third is recalling the zoologic taxonomic groups by remembering, "King Philip came over for grandma's suitcase." While such mnemonic are useful for learning fixed sequences of word labels, they are not useful in the learning of meaningful material similar to that presented in this example or the body of concepts, relationships and principles which make up the structure of any discipline or knowledge domain.

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[1]Contrary to popular beliefs, material which is learned most quickly is also learned more completely and retained longer than where learning is slow. This also applies to individuals. That is, [redacted] students who master material quickly generally learn it more thoroughly [redacted] retain it longer. The reason for this is the existence of the necessary prerequisite learned capabilities and concepts which allow the new information to be easily and quickly acquired, processed, and used (Gagné & Briggs, 1975, Chapters 8 and 9).

If a student learned the list of minerals presented in the previous task by a simple mnemonic procedure he might, indeed, be able to recall exactly the list of words in the identical order he learned them. However, for this task, and most tasks concerned with the meaningful learning of concepts and principles, simple and accurate recall of a particular list, the specific steps to solve a particular problem, or specific facts is not the adaptive behavior desired as a learning outcome. Rather the learning of the general logical structure which can be used to categorize or describe each mineral is much more adaptive.

There are several reasons for this. First, the logical structure itself is very generalizable. Once learned it can be used to correctly categorize new minerals not encountered directly in instruction. It can be used by the individual in new situations. This is called transfer of training. Second, if the student does forget a particular word presented in the original list, and if it is important to remember that word, he can generally "re-create" the word by using the conceptual structure. Bruner sees the role of structure in both extending knowledge to new realms of experience (going beyond the information given) and being the primary basis for recall of appropriate specific information and facts (1960, 1968). A third reason for the great desirability of the logical structure approach to learning over less meaningful approaches, is that it is much more motivating to learn something which has the capability to organize, explain, predict, and transfer to many specific situations. General concepts and relationships result in what Bruner (1968) calls "effective power" and what Gagné (1970) calls horizontal and vertical transfer which leads to effective problem solving. A final reason for learning as much of the content of a given discipline as possible through the use of meaningful taxonomies, structures, or general concepts is that once learned such capabilities are tremendously resistant to extinction or forgetting. Oftentimes these types of higher order generalizations once learned are retained lifelong, while unrelated factual information is rapidly forgotten (Cole, 1972).

References

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Bruner, J. S. Toward a theory of instruction. Cambridge, Mass.: Harvard University Press, 1966.

Cole, H. P. Process education. Englewood Cliffs, NJ: Educational Technology Publications, 1972.

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Gagné, R. M. & Briggs, L. J. Principles of instructional design. New York: Holt, 1974.

Questions

1. Were there differences in how many of the twenty mineral names each group was able to recall?

2. What attempts did persons without the advance organizer make to structure the list to enable learning?

3. Think of something you teach in your field where you make use of an advance organizer and a cognitive structure to help students learn how to categorize, identify, and recall specifics. Explain the procedure to your group.

4. Identify another area of your teaching where you do not but could and should use some type of advance organizer or post organizer to teach a broad conceptual structure to make learning more meaningful and generalizable.

5. Try to recall some specific facts or information which you learned in the past but can still "regenerate" because you still know the general structure of the discipline.

   Examples:

   a. The difference between molality and molarity in chemical solutions.

   b. How to calculate the standard deviation of a series of measures or the correlation coefficient of a series of pairwise measures.

   c. The circulation of the blood through the renal-hepatic portal system.

   Use examples appropriate to your own field. Take something you used to know. See if you can regenerate it from your acquired cognitive structure. If you cannot and are forced to look up what you want, is the ability to do so also part of a generalizable cognitive structure? Why? Why not?

Activity 3 Role of Concrete Experience
Task 3B

Workshop Leader Instructions: Use two or more of the activities listed as exhibits below as workshop activites prior to having participants complete Activity 3, Task 3B.

Purpose: To illustrate the use of concrete experiences and active student involvement to foster high level of motivation and achievement.

Exhibit B1 Teeth

Introduce this activity by having the workshop participants pretend they are students and you are an instructor in a beginning dental hygiene course. Students may have not yet learned basic dental anatomy nomenclature or may have forgotten it. This is an engaging way to both assess the degree with which students are familiar with the nomenclature and to teach the proper terms. After explaining this to the participants say something like this.

> "I know you have all been learning the nomenclature for describing the dental arch and the various positions, surfaces and locations of the teeth. I have on these cards the names of the eight basic teeth. Take a card. It contains a tooth name. Pretend you are that tooth. First draw a picture of the tooth you have received on the back of the card from the perspective of the occlusal surface."

Hand out a card to each of the 16 students or to 32 if you wish to do both the maxillary and mandibular arch. Allow participants a minute to draw the tooth they have been assigned. Make sure you have a complete set of teeth in the maxillary and/or the mandibular arch. If you have fewer than 30 students, proceed one arch at a time. Next say something like this.

> "Please get up and stand in the middle of the floor. Arrange yourselves in the proper position in the mandibular (or maxillary) arch. Pretend you are the tooth named on your card."

After the students get up and into an arch position, ask any remaining students to check out their position and tooth names. Is everyone positioned correctly? If not, get them correctly positioned.

Continue with the types of questions and directions listed below. Be flexible and spontaneous. These questions are only examples of the type which can be asked.

1. Ask every student in the arch to position themselves such that their backs are their facial surface and their fronts are lingual surfaces.

2. Ask two students to place a string or piece of masking tape through the arch as the median line.

3. If people are not evenly spaced, e.g., some are touching one another and there are spaces between other adjacent people ask another student not in the arch to name either the space (diastema) between persons heads and bodies or the touching of hips (contact area) of others. If no spaces exist ask a student to point out or create a diastema or contact area.

4. Ask a given student (tooth) in the arch to indicate where a cavity is located on his or her mesial surface.

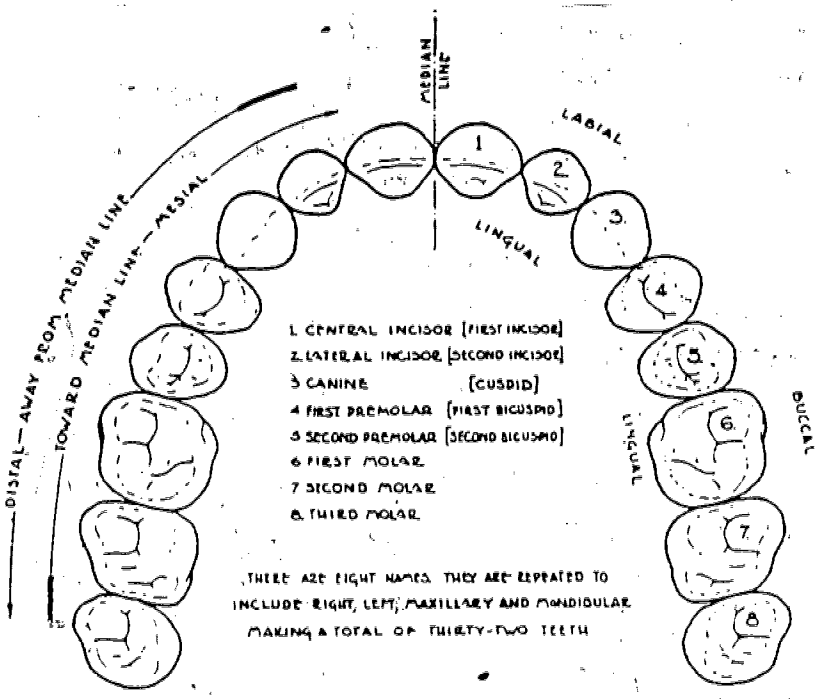
5. Give a student a black piece of paper with a strip of tape attached and ask him or her to put the paper on the occlusal distal surface of the first bicuspid (and so on for any position).

6. Ask the right cuspid to assume the position of being rotated to the distal.

7. Ask the second left molar to lean toward the buccal, the lateral incisors and central incisors to lean toward the labial etc.

8. Ask your students to think up other commands which involve proper use of the nomenclature.

To do this activity you will need the 32 cards with the names of the 8 teeth which form the two arches. In anticipation that you might want to use this activity as an example of a teaching method, but not be familiar with the basic nomenclature, the diagram included below should help.



Adapted from Wheeler, R.C. A Textbook of Dental Anatomy and Physiology. Philadelphia: Sannders, 1965, p.9.

Exhibit B2 Nephron

This activity is simply another variation of the methodology described in the previous tooth activity. However the topic is different. Conduct the sample lesson in the same general way. However, this time the lesson content concerns the structure and function of the nephron.

1. Ask students to construct a room size representation of a nephron on the floor using masking tape, chalk or washable ink felt pen.

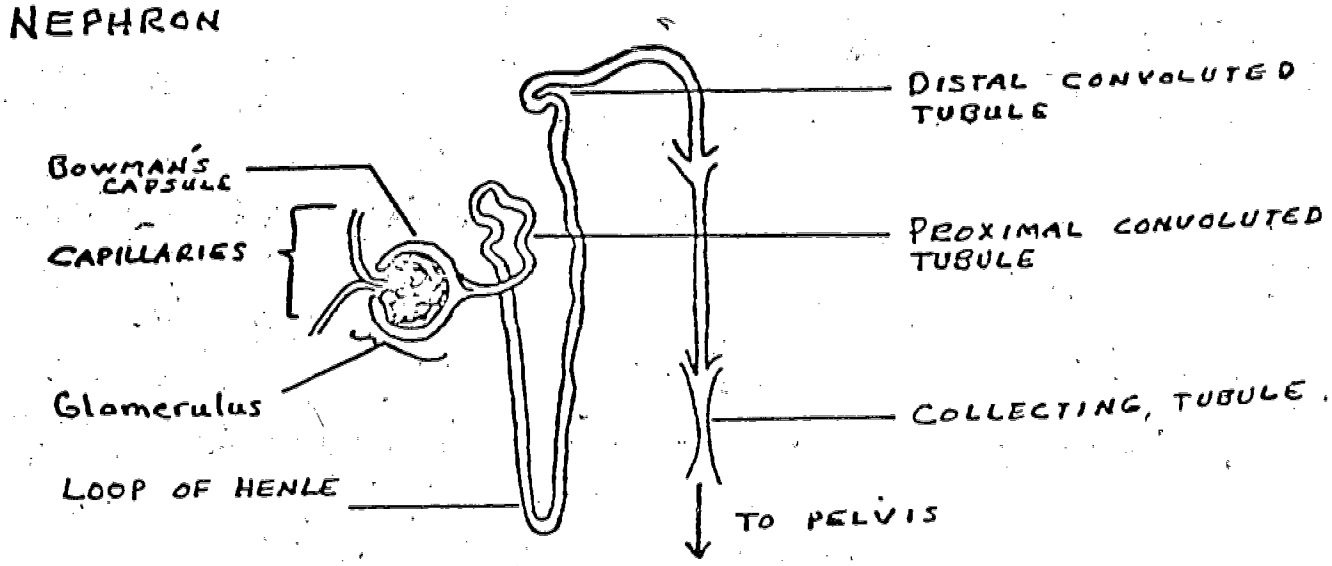
2. Assign cards to students with the labels for various ions and compounds found in the blood. Have these students stand on the capillary side of the Bowman's capsule and determine who (which ion or molecules) has free access through the capsule wall into the tubule under normal conditions.

3. Give each student a card marked H_2O or simply ask each student to pretend he is a water molecule or a unit of water (e.g., 1 ml etc.) The students are to start on the tubule side of the capsule and follow the tubule pathway indicating where and how many of them would be absorbed on the way to the pelvis.

4. Repeat the above procedure for K^+, Na^+, Cl^-, urea creatine, glucose, pyruvate, ascorbic acid, etc.

This activity is also useful for either assessing or teaching basic concepts in an interesting and engaging way. The anatomy of the nephron can be taught as well as the special selective diffusion and reabsorption function of various portions of the capsule and tubule.

The diagram which follows is useful to help illustrate how the classroom procedure would be carried out. The paper it is taken from provides the basic information needed. In fact the author of the paper, Bonnie L. Lynch, suggested this activity.



From Lynch, B.L. Anatomy and Function of the Urinary System: A Self-Directed Learning Package. College of Allied Health, University of Kentucky, 1975.

Exhibit B3 Communication

Students in clincial and technical courses often have difficulty in communicating instructions to colleagues or patients in clear, unambiguous terms. This activity is designed to quickly assess students' ability to precisely describe and clearly communicate events or situations to other people.

Suppose you notice your students in a clinical class have been sloppy in giving and/or following instructions. Here are two activities you could use at the appropriate and teachable moment which might help dramatize the problem, motivate increased effort at more precise communication and identify particular students who have difficulty in speaking precisely.

Procedure:

1. Divide the class into pairs. Have each student sit back to back in two chairs or on the floor. Designate one person in each pair as the teacher and the other as the student. The two should be seated so that neither can see the other's work.

2. Ask the "teacher" to draw an irregular figure on an empty sheet of paper. The figure can be anything he chooses, but must be moderately complex and irregular such as:

3. Task: The "teacher" is to communicate to the "student" directions which enable the "student" to draw the picture on his paper.

4. Constraints:
   a) the "student" cannot ask questions
   b) the "teacher" cannot look to see how the "student" is doing
   c) the "student" cannot look to see the "teacher's" example

5. Allow about 3 minutes for this first part of the task.

6. Ask pairs of "students" and "teachers" to compare the figures.

   Are the pairs alike? How much? To the extent that the "student's" figure is like his "teacher's", what can we infer about the degree to which the "teacher's" statements were operational?

   Are the figures about the same shape? size? oriented in the same way? in the same general space on the paper?

   What are some ways the "teachers" could be more explicit in communicating their instructions to students?

7. Repeat the procedure with a new pair of persons and a new figure. This time let the "teacher" be the "student", and the former "student" be the "teacher". Change the constraints in different groups.

   Let the "pupils" in one group ask questions

   Let the "teachers" in another group look over their "student's" shoulders

How does modifying the original constraints effect the outcome? Why?

What role does feedback and student questioning play in helping teachers to be more operational in their statements, descriptions and instructions?

Constructing Operational Statements: Another Activity

Procedure:

1. Send one volunteer out of the room into the hall so he cannot hear or see what is going on.

2. Have a second volunteer demonstrate some activity in the classroom in the absence of the person who has been sent out. This should be a short and relatively simple activity such as the following:

   Person walks to middle of the room, stands on left foot, claps hands three times, places right foot on floor, turns around 180°, bows three times, and returns to seat. (Note: as instructor demonstrates some examples, don't describe them, use varied activities involving people and things in the room and a variety of postures and activities, e.g., chairs, chalk, glasses, hands, books, laughing, walking, bending, shaking hands, etc.). The person who is "it" demonstrates his task to the class.

3. Have the members of the class record a brief written statement or mentally note what was done.

4. Demonstrator then calls the person in the hall into the classroom. The demonstrator then explains to this person what he is to do.

   Constraints: a) demonstrator can use no gestures and cannot point or show any body postures, etc. He must use only words when describing the task to the person.

   b) demonstrator cannot look at the person when explaining the task to him or during its execution. He must stand with his back to him at both times.

   c) person who came in from the hall can ask no questions either during the demonstration or its description.

5. Person who has come in from the hall carries out the instructions.

Questions:

1. How close did the performance match the instructions?

2. How close did the instructions given the person by the person who was "it" match his own demonstration?

3. Can we assume that if the performances match almost exactly that the communication was operational? Can we assume that if they do not match they were non-operational?

4. Think of some funny, serious, unpleasant situations which you have observed or experienced which resulted from similar non-operational communications. Explain the situation to the others in your group.

5. Contrive a situation where you deliberately try to establish communication difficulties between two or more people by using non-operational statements and terms. Example: A person new to Lexington seeking directions on how to find his way to a particular point in town. As the instructor you may want to role play this with a student. Be non-explicit in your instructions. Don't use street names and be ambiguous about the number of blocks, landmarks and directions. Use the term "you know" a lot. A second situation which might be roleplayed is a student in your course where the student has earned a "D" on your essay exam and wants to know why. Be very ambiguous in your responses.

6. What situations can you think of where operational statements are sufficiently precise that even in the absence of feedback or direct contact of pupil and teacher the task can be completed?

   Examples: Cookbook recipes
   Instructions packaged with new lawnmower for assembly
   Instructions on top of standardized tests.

Exhibit B4 Lift Your Left Foot

Introduce this activity by saying something similar to the following.

> "Suppose you are a physical therapy instructor. You are giving a lecture on counter balance and center of gravity as basic principles of body movement and control. It is 8:30 a.m. You notice only about three of your 18 students appear alert. You feel what you are trying to teach is important. Here is what you might spontaneously do to motivate more student interest, although had you been better informed and prepared you might have planned the activity ahead of time."

Then pretending you are the teacher and the workshop participants the students do the following.

1. Have them all get up and move to a flat wall surface.

2. Have everyone turn with their right sides toward the wall. Have each person place their right foot firmly against the wall, then their right hip and shoulder also against the wall. Then ask them to lift their left foot on your count of three. Count, "One, two, three - lift!"

   From this position the foot cannot be lifted unless the toso is turned parallel to the wall or the hip moved out away from the wall.

3. Ask the following questions:

   "Why can't you lift your left foot?
   What principles are involved?
   Can you work out another position with the wall which prevents a major limb, head, or torso movement? How? Why?
   What principles are involved?"

4. Another variation is to have the students form pairs and have the smallest student in each pair place the palm of his or her hand squarely and firmly on top of his or her own head. The other person then tries to lift the hand off the other person's head with one hand at the wrist. The first person easily resists. Again the same or similar questions can be asked.

Exhibit B5 Generalizing Experience

If the participants are to make use of what they have been shown they must generalize it to their own teaching. Have each participant read the paper titled, "Concrete Experiences as Mediators for Learning" which is Activity 3, Task 3B. An alternative approach is to present a mini lecture on the content of the paper.

After either presenting the paper or having the participants read it, ask them to discuss the questions which follow the article. Generally discussion proceeds best in groups of from 3 to 6. You may want to form one large group or several smaller ones depending on your goals, constraints on time, etc.

Discussion Hint

The questions about when and when not to use such techniques are not answered in the paper the participants read. A brief answer is provided here to assist you in leading the discussion.

The types of active gaming and simulations described in exhibits B1 through B5 can be used frequently as motivators provided it is understood that such activities:

A) Do not replace the need for quiet and serious individual study and the usual methods of lectures, tests, practical demonstrations etc. which are necessary for proper learning and achievement.

B) Can often be carried out rather spontaneously and quickly at the teachable moment, as in the example of the physical therapy lecture on balance and center of gravity and the "Lift your Left Foot" activity or the "Communication" activity.

C) Are tremendously useful energizers which introduce physical activity, variation, social interaction, and novelty; all of which motivate student interest and achievement, into more routine ongoing instruction.

D) Are often excellent ways to introduce new topics or summarize major points.

Activity 3
Task 3B

Concrete Experiences as Mediators for Learning

Much research shows that when students are learning new or complex material, concrete instances, and examples do much to aid learning and retention and to foster attention and motivation.

Bruner (1966) speaks of three modes by which humans can represent or think about aspects of their world. These include the enactive, iconic, and symbolic modes of representation. Enactive representation is thinking and learning by the direct performance of some task with muscles and nerves. Iconic representation is thinking and learning by the use of images including visuals, smells, sounds, and other sensory input that are not symbols. Symbolic representation is learning through the use of symbols such as words, numbers, or chemical symbols and conceptual relationships among these.

When you learn almost any task all three modes are involved to some degree, particularly if the task involves a component of psychomotor performance. For example, as a child you learned how to shake hands and properly greet people. In doing so, you learned the appropriate way to perform this common task by watching others and imagining how you should shake hands with the president when he visited your school (iconic), by actually shaking hands with many people (enactive) and by being instructed in words and language by adults who told you why, when, and how to shake hands (symbolic).

Oftentimes, in academic courses in colleges the material to be learned is presented in nearly pure symbolic or abstract conceptual form. This is often the case in philosophy courses and some history courses. It is also the case in some science courses, although these tend to use more diagrams and charts which combine the symbolic and iconic modes. Some instructors also use many verbal examples and illustrations which call to mind previous experiences or imaginary situations for students (iconic mode). However, many instructors fail to make sufficient use of the iconic or the enactive mode in teaching academic content. Of course, in clinical dental, physical therapy, and surgical courses and in laboratory courses in medical or radiological technology much emphasis is placed upon all three modes and their integration into informed and skilled technical performance.

Instruction which facilitates learning in all three modes is generally more exciting for students and often results in more stable and meaningful learning. There are many opportunities in the teaching of any academic subject to incorporate all three modes, sometimes

in unusual or unconventional ways which illustrate a concept or set of relationships you wish to teach.[1]

You have participated in a demonstration of one or two activities which illustrate how to incorporate enactive, iconic, and smybolic modes into the learning of something often considered dull and boring. Now, examine the questions which follow and see if you can generalize this technique to an area of your own teaching.

References

Bruner, J. S., Olver, R. R., & Greenfield, P. M. et. al. Studies in cognitive growth. New York: John Wiley & Sons, 1966.

Gage, N. L. & Berliner, D. C. Educational psychology. Chicago: Rand McNally, 1975, Chapter 17.

[1]Unconventional or unusual events or activities are themselves highly interest arousing and motivating (Gage & Berliner, 1975, Chapter 17).

Questions

1. There are many other areas where you could involve students in enactive learning of some complex process. Examples include (a) having students role play the various functions of a chemical autoanalyzer in order to learn the basic principles of its operation, (b) having students labeled as atoms, radicals, and molecules physically assume the positions and correct bond angles of various organic compounds, such as urea, etc.

   Think of some area you now teach where you already make use of all three modes. Explain how you do this to the other persons in your group.

2. There are disadvantages to teaching too frequently in this way! What are they? Consider the length of time required, the possibility of teaching misinformation, and the possible student reaction to too much of this approach.

3. Given the disadvantages when, how often, and for what purpose should one use an activity similar to role playing the teeth positions in the dental arch? What are the advantages of such procedures?

4. If you have time, as a group design and present some engaging and unusual way to teach some content area to students in an enactive, whole body way.

Activity 3
Task 3C

Events of Instruction

This activity is designed to illustrate the usual events of instruction and their function in promoting effective motivation, learning, and achievement.

You should now watch the workshop leader and participate in two simulation activities which depict the events of instruction and their functions.

After you have finished participating in both simulations, discuss the following questions.

1. Which method was most interesting? Most effective?
2. Why was one method more effective than the other?
3. What were some of the main instructional events included in the more effective method and ignored in the least effective method?

Activity 3
Task 3C
Exhibit C

Events of Instruction

Workshop Leader Instructions: Use this activity in connection with Activity 3, Task 3C. Do the activity before having participants complete Task 3C.

Purpose: To dramatize the importance of properly planned instructional sequences in the teaching of concepts and skills.

Introduce this activity by asking the participants to pretend they are students in a first aid class. You are the instructor and you are going to teach them how to tie certain types of knots in ropes.

Explain that for purposes of the activity you will demonstrate two ways to teach the skill. Ask them to sincerely try to learn what you want to teach them. Carry out the instruction as a short micro-teaching episode. Complete the improper procedure first, then the proper procedure.

Improper Procedure

The objective in this part of the activity is to be as unorganized and unprepared as possible. The teaching sequence suggested is deliberately designed to violate the functions of each of the nine events of instruction described by Gagné (1968, 1970; Gagné & Briggs, 1974, p. 123).

The functions served by the various events of instruction of a given skill or topic are listed below in the usual order in which they are employed.

1. Gaining and controlling (maintaining) attention.
2. Informing the learner of the objective or outcome.
3. Aiding recall of prerequisite learning.
4. Presenting the stimulus material.
5. Providing guidance for learning.
6. Eliciting performance from each student.
7. Providing feedback about adequacy of student performance.

8. Assessing or judging quality of performance.

9. Arranging for retention and transfer.

Casually begin your instruction while something else is going on. (No or little effort to gain or control attention). Talk in a monologue. Don't explain why the learner needs to know this or what he should be able to do. If pressed as to what say, "tie a knot." If pressed as to why say, "because it is required." (No attempt to inform learners of the objective).

Give a verbal description of how to tie the bowline, being sure not to actually tie or manipulate the rope. Teach to the whole class, not a given person. (failure to present the stimulus material). After your verbal description, have each person draw a diagram of how to tie a bowline. Don't let them actually try. (Failure to present the stimulus material and to elicit appropriate performance. The tying of a knot is not the same as the drawing of the diagram).

Make sure not to give any feedback to any student on their drawing. (Failure to provide feedback). Collect the papers and say, you will grade them later and give them back next week. Pick out a student give him or her a real rope and tell him this is a test. Tell him to tie a bowline. Tell him he has passed or failed but nothing else. End the lesson after 3 or 4 students have been tested. (No provision for retention or transfer).

After the improper procedure, stop, and ask the participants how they felt about the activity. Discuss these feelings for a couple of minutes and then go on to the second part. Ask them to play the student role once more and then carry out the proper procedure described on the Activity 3, Task 3C handout titled Gagné's Events of Instruction.

Proper Procedure

The purpose of this part of the procedure is to demonstrate how all nine events of instruction can be incorporated into effective and motivating instruction. Carry out the procedure according to Activity 3, Task 3C. After you have finished, ask the participants to turn to the description of the instructional events you followed provided in Activity 3, Task 3C. Follow these steps as you teach the procedure.

When you have finished demonstrating the proper and improper procedures and looking at the description of the appropriate procedure, ask the participants to read the paper and discuss the questions which are also part of Activity 3, Task 3C.

Activity 3
Task 3C (continued)

Gagné's Events of Instruction

Robert Gagné is an educational psychologists who has spent a great portion of his life in studying the instruction-learning process. He has identified nine common events of instruction which are empirically known to be basic to teaching which is supportive of learning (Gagné, 1968, 1970; Gagné & Briggs, 1974, Chapter 7).

The nine events of instruction are really a set of general process objectives which should be used in the teaching of any topic or skill. They specify the conditions which the teacher must create for the student if learning is to occur in a meaningful and lasting way. They also help insure the learner will be highly motivated to learn. The nine events of instruction do not specify what should be taught or what specific examples, activities, or tasks should be presented to students. They do, however, provide a general set of guidelines from which to plan the necessary number, variety, and sequence of instructional activities needed for the effective teaching of any concept or skill. Because of this property, the nine events of instruction are very generalizable and useful. They are summarized in Table 2.

The nine events appear so logical that any teacher with a little common sense would seem sure to be aware of the need to include all of the events in their teaching. However, teachers often fail to attend to one or more of these important events in their teaching.

It should also be pointed out that the events need not occur in the order they are listed. Oftentimes they do not, but the most common and probable order is the one presented in the table. In addition, skilled learners who have learned to be self-directed also teach themselves through attending to each of the various events, whether or not the teacher systemically does so. We know this to be so, since learning any concept or skill in a generalizable and useful way requires each of the events.

Teaching the Tying of a Bowline

Via

The Nine Events

An illustration of how the nine events of instruction is useful in planning effective teaching of a concept is illustrated by analysis of a

TABLE 2

GAGNÉ'S EVENTS OF INSTRUCTION

Event	Rationale
(1) Gaining, controlling, and maintaining attention.	Learning requires attending to the task at hand and screening out other stimuli. The teacher can help gain, control, and maintain student attention toward the task.
(2) Informing the learner of the expected outcome or objective.	The learner must know what it is he is to do. This enables him to attend to appropriate stimuli, remember needed information and organize behavior toward the goal.
(3) Stimulating recall of relevant prerequisite learning.	Most new things which are learned are based upon earlier prior knowledge, concepts, and skills. Students often do not know what these prerequisites are or may have forgotten some of them. Recall most often be aided by the teacher.
(4) Presenting the stimulus material inherent to the learning task.	Learning involves being able to do something which one could not do before. The student must be presented with the symbols, situations, and objects with which he is expected to learn to perform some task or procedure.
(5) Providing guidance.	Most learning tasks involve the learning of many smaller components of the final total skill or concept and their subsequent assembly into a smooth and skilled performance or broad cognition. The teacher needs to guide the student at each pont in any complex learning task, to insure each component is learned.
(6) Eliciting the performance.	The student must initiate and perform the activity which is to be learned at the appropriate time and under the appropriate conditions. For most learning tasks the performance must be elicited repeatedly as practice before it is mastered in a expert way.
(7) Providing feedback about adequacy or correctness of performance.	A great deal of practice is of no value unless the learner is provided with knowledge of the accuracy of his performance. Knowledge of errors and accomplishment as performance is elicited and practiced is required to shape final skilled performance toward mastery.
(8) Assessing performance.	After learning, or often before learning, the degree to which the performance has been learned or not learned needs to be formally tested or assessed in order to plan additional instruction and report progress.
(9) Enhancing, retention, generalization, and transfer.	It is not possible to teach everything about any given concept, skill or topic. It is possible and necessary to present the student with a variety of different contexts and situations where the concept or skill applies in order that he may generalize it to situations he has not yet encountered.

Summarized from Gagné (1968, 1970) and Gagné & Briggs, (1974).

"proper" method for learning to tie a bowline which the workshop leader demonstrated for you. Each portion of that instructional activity will now be described in terms of the nine events.

(1) Gaining and Controlling Attention

Using a large rope quickly tie a bowline in one end forming a loop. Ask another person, a student, to tie a loop in the other end. After both loops have been tied put your loop around a door knob, a chair leg, or a person's hand and give a sharp tug.

The bowline knot won't slip. Repeat this procedure with the knot the student tied. Chances are it will slip. Dip your knot into water and again put it over a door knob or under and around a chair leg and pull very hard. It won't slip. Move around the room as you do this. You should have gained student attention.

(2) Informing the Learner of the Objective and Stimulating Recall of
(3) Prerequisite Learning

Say something like this. "Oftentimes in first-aid work it is important to be able to tie a loop in a rope which will not slip. If you want to lift someone out of a hole or well, the knot should be stable. You don't want it to slip and squeeze the person. If you climb down a hole or cliff to help someone and use a rope loop around your chest to be pulled back up, you want the knot to be stable. When we finish this activity, you should be able to quickly and correctly tie a bowline knot which will not slip even when wet, muddy, or bloody."

(4) Presenting the Stimulus Material

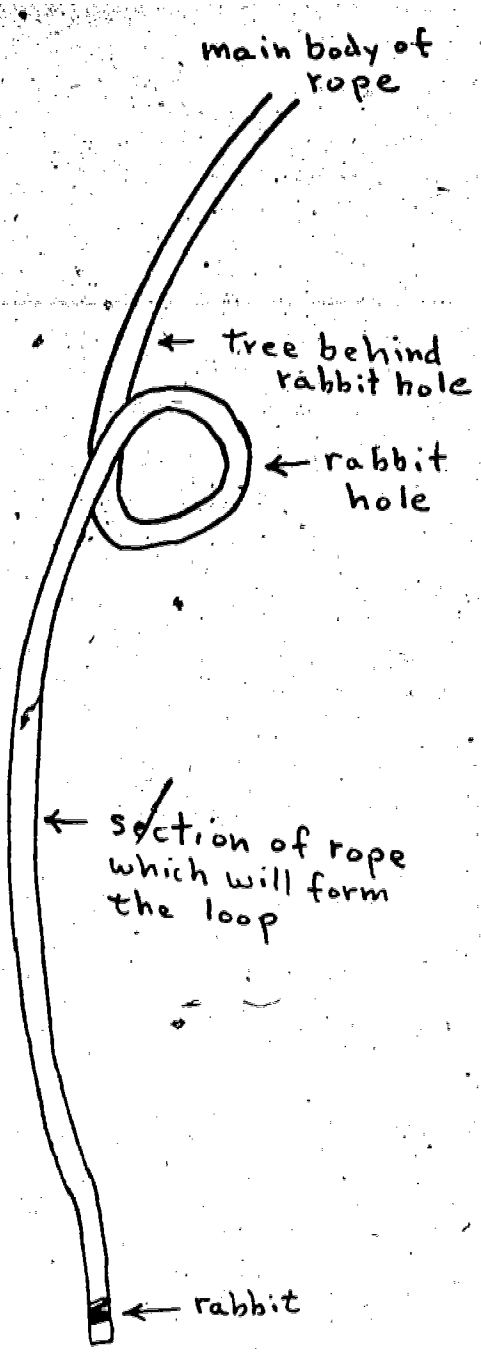
Say, "Here is the rope. Watch as I tie it correctly to produce a bowline knot with a loop of rope."

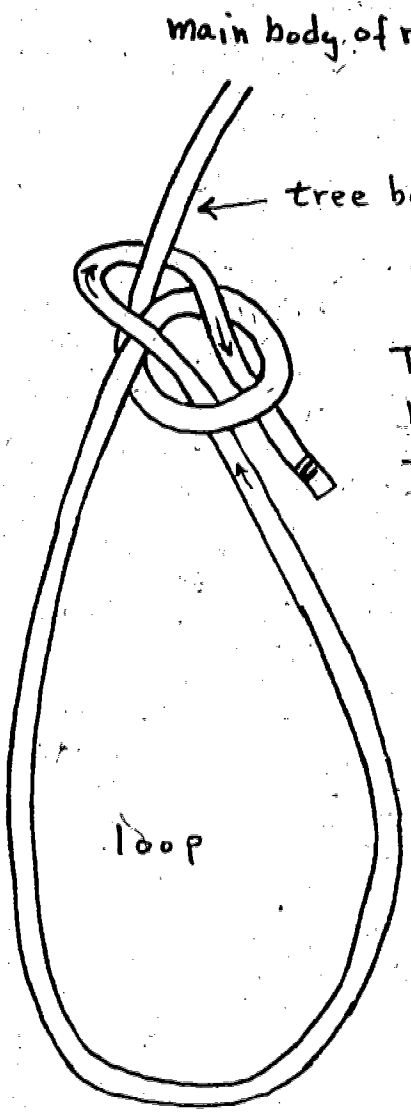
Tie the knot, slowly, explaining step by step what you are doing. Have the students gather around you and look over your sholder to have the proper perspective.

(5) Providing Guidance and (3) Stimulating Recall of Prerequisite Material or Learning and (6) Eliciting Performance

Give each student a long piece of rope. Work with one student at a time if you have only one piece of rope while other students watch. Have students examine the diagram presented on the next page before they begin tying the rope. Hand out a copy to each student. Then make a "hole" and a "tree" behind the "hole" in a section of rope. Then say,

BOWLINE KNOT AND LOOP





To make knot, bring rabbit up through the hole at the base of the tree, run him around behind the tree, and then have him jump down the hole again.

To tighten, grasp rabbit and adjacent ascending loop in one hand, and main body of rope in other hand and pull in opposite directions.

"Ok, let's run the rabbit up the hole, around the tree, and down the hole again." Carry out the procedure. Demonstrate how to tighten the knot.

(7) Providing Feedback About Adequacy of Student Performance

Give each student a piece of rope and ask them to tie a bowline. Walk around assisting students as they need help and correcting any errors.

(8) Assessing Performance

Have each student hook his or her bowline loop to a chair or table leg and give it a sharp tug. If the knot slips, it is improperly tied. Check each loop to see if it is tied properly.

(9) Providing for Retention, Generalization, and Transfer

Have students form into groups of 2 or 3 persons. Give each group 4 or 5 different sizes of ropes. Ask them to do the following tasks.

a. Tie a bowline in each rope.

b. Have one person lie down on the floor face down. Slip a rope underneath his chest and tie it in a bowline knot, with only a little slack in the loop, which is positioned just below the arm pits.

c. Make a loop just the right size to serve as a stirrup for your foot. You might hang such a stirrup from the back of a truck to facilitate mounting or dismounting.

d. Stand up. Bring a rope around under your arms and tie a bowline knot in front of your own chest. Repeat the procedure lying down on your stomach, side, and back. Repeat it again from a sitting position. Tie it using only one hand as if the other hand and arm were disabled.

e. Fasten a piece of rope around your waist to serve as a belt. Form the buckle from a bowline knot. Can you keep your trousers up with your belt and buckle?

References

Gagné, R. M. Learning and communication. In R. V. Wiman & W. C. Meierhenry (Eds.) Educational media: Theory into practice. Columbus, Ohio: Merrill, 1968, pp. 93-114.

Gagné, R. M. The conditions of learning. New York: Holt, 1970.

Gagné, R. M. & Briggs, L. J. Principles of instructional design. New York: Holt, 1974.

Questions

1. Think of a specific lesson or topic you teach every year which could be better taught if you planned it according to the nine events of instruction. If you did plan the lesson according to the nine events, do you think it would be easier to teach in subsequent years? Why? Why not? Could someone else use your lesson and they yours? What possibilities do you see for benefical development and sharing of such detailed plans?

2. Think of a lesson, skill, or topic you already teach according to the nine events of instruction. Is it effective? Why or why not?

3. Why is it more motivating to students if the nine events of instruction are followed in a teaching activity? Relate the earlier concepts of student needs and theories of motivation to your answer.

4. Quickly, with two or three other people, design a lesson about something you teach and make sure you provide experiences supportive of all nine events of instruction. If you have time, conduct a microteaching session of your activity before the entire group. Then critique your own performance and call for suggestions to improve the lesson.

Activity 3
Task 3D

Making Use of Variation, Novelty, Curiosity and Discrepant Events and Incongruity

An English literature teacher is unhappy with the quality of students' written interpretations of assigned readings. She also feels that many students are somewhat inattentive in class. At the next class she does the following. Slowly she spreads the students' last written assignment papers out on top of her desk. She then climbs up on the desk and walks back and forth over the papers, saying, "I have been going over your papers. I feel there are two main problems. First, you tend to leap to conclusions." At this point the teacher holds up a large sign labeled "conclusions." She then throws the sign down on the floor and immediately leaps off the desk onto the sign. She then says, "I also think that you ignore to comment on the feelings that the readings must evoke in you." She then holds up a sign labeled "my feelings," has a student stand up and hold the sign at the front of the room and then walks around and around the student and sign, never looking at either but everywhere else.

A physics teacher begins a lecture about states of matter (solids, liquids and gases) this way. "We all know the general rule that a given material such as parafin wax or gold can exist as a solid, liquid, or gas. We also know that, as a general rule, the solid form of a material is most dense, the liquid less dense, and the gas the least dense. We also all know that water, H_2O has three states, ice, liquid water, and water vapor or steam. We know that water vapor is much lighter or less dense than water. When water boils, bubbles of water gas rise up through the water and escape into the air. We also know when water freezes it becomes a solid more dense than the water. We know this since ice cubes always sink in a glass of ice water and because when a lake or pond freezes over, the ice is always formed on the bottom of the pond first. People who ice skate on ponds and lakes are a harty group who, after donning their wetsuits, weights and skates, descend into the lake in order to skate on the frozen water which has settled to the bottom."

A teacher of economics, in teaching a lesson on "wants" and "needs", comes into class and says, "Why do we wear belts?" A student answers, "To hold our pants up!" The teacher says, "OK, good!" "But is a belt indicative of a want or a need?" Another student says, "A need, because you need a belt to hold your pants up." The teacher says, "Aha! I do not need a belt to hold my pants up! I can meet that need in many ways, not with just a belt." At this point the teacher throws open his coat to reveal an old rope tied around his pants. The students are delighted and laugh gleefully. The teacher then asks each student to describe why he or she purchased and wears a particular belt they own. Much discussion follows concerning wants and needs.

A teacher in a college of allied health is teaching a unit on urinalysis. During a lecture when she has explained the physical measurements made on urine and has explained the inferences made about the patient from this data

she removes a brown paper bag from her desk. She says "I brought this from home this morning." She opens the bag and removes a urine bottle which is filled with an amber liquid. She asks one of the students in the class to use a hydrometer to measure the specific gravity of the sample. She hands the hydrometer to the student. The student takes the measurement and reports it to be 1.012 g/ml. The teacher says, "Gee, it's a little weak. Let me run it through again and we will try another measurement tomorrow." With that the teacher quickly picks up the urine bottle, puts it to her mouth and drains it in one long drink. The bottle contains water and food coloring, but the students do not know this.

A medical laboratory and surgical technician teaching a group of students sterile procedure has them clean and prepare a group of items taken from the hospital floor for sterilization in the autoclave. The next day the teacher has the sterile items wrapped in their cloths in a cabinet in the room. At the usual 10 minute break in the class, she produces a container of French onion dip and some crackers. She asks two students to go get their sterile packages and bring them to her. She opens two packages and removes two emisis pans. She places the dip in one and the crackers in the other and passes them around the circle after taking two crackers and some dip herself.

Questions

1. Top these tall tales with your own account of an unusual or strange situation used by a teacher to gain attention or make a point which you witnessed.

2. Are such techniques appropriate? When? Why? For whom? Under what conditions?

3. Are these and similar activities legitimate ways to arouse student interest and motivation or do they detract from the serious business of teaching and learning?

4. Have you personally ever contrived a situation like this? With what effects? For what purpose?

5. After you have discussed these questions, read the paper which follows.

Use, Abuses and Potential of Variation and Novelty in Classroom Activities

Some teachers would never consider using some of the far out, attention getting techniques described in the previous section. Whether or not you can comfortably use this type of approach depends a great deal upon your own needs, personality and beliefs. Even if you do use these types of attention getting activities, it is best to do so within limits. If is not wise to carry out this type of activity too often or the novelty soon wears off. In addition it is unwise to use such an activity if it is likely to threaten the

esteem, well being or ideals of your students. The activity also ought to be closely related to some point you are trying to make in teaching the academic content or skill which is your primary objective.

A few years ago an attractive female instructor decided her students were not paying enough attention to her lectures. Her solution was to strip her clothes off and walk nude before the class as she lectured. This was a poor choice: 1) since her lecture content had nothing to do with her nudity, 2) because her nudeness presented a competing stimulus which, while causing students to be visually attentive to her body and movement, probably interferred with attention to the substance of her lecture, and 3) because the tactic was in poor taste, bound to offend the values and sensibilities of some students and colleagues. She was fired, so strongly were some sensibilities offended.

The physics teacher, who began his lecture on states of matter with the strange story about skating on the bottoms of frozen lakes, is a very conventional person in most ways. He is normally very scholarly and serious. He would not think of intentionally offending a student. When he tells this story to his students, they are very serious and almost believe him, usually studiously taking notes, until he lays it on too thick. Then laughter erupts, students are pleased, enjoy the joke, tension is released, curiosity about the phenomena is enhanced and everyone feels better about the teacher, the subject and the class.

While it is possible to overdo the novelty and incongruity bit, such techniques used occasionally and appropriately can do much to gain and control student attention, meet needs for play and joking which most people have to a good degree (remember Figure 1 and the Murray needs list), introduce variation which is itself motivating, and even improve classroom attendance.

The drive for playful, exploratory behavior, the fascination with the incongruous, unusual or discrepent situation is universal to all persons and the basis for most humor. In addition it is the cause of a good bit of increased physiological arousal level or alertness (Berlyne, 1960, 1963). Repetition of the same sort of environmental patterns and stimuli lead to habitation and a reduction in physiologic arousal level, which we usually refer to as boredom. Introducing novelty and variety into regular classroom patterns of instruction increases arousal level and prevents boredom.

The options for the teacher are many. You do not need to be a great performer or showman. Basically all you need to remember is to try to do something new and different often, and vary what you ask your students to do the same way. The physical therapist who stopped in the middle of his lecture to have everyone try to lift their left foot when their right side was pressed against a wall increased the alertness of his students by having them physicaly move about and try to apply an abstract concept to a concrete situation. Many of the activities described in the Activity 3 portion of this workshop are effective because of: 1) the variation they produce in the usual routine, 2) because they provide for physical movement, 3) are somewhat incongruous, and 4) represent concrete examples of rather abstract concepts. It is a little strange and funny to be asked to pretend your body is the first premolar in the mandibular arch and to assume your correct position as that tooth in a representation of the arch in the middle of the classroom floor.

Far from detracting students' respect for you as a teacher and student achievement in your subject area, techniques similar to these, when used properly, will increase student desire to emulate your wit and creativity as well as their general motivational level for the subject matter you teach.

References

Berlyne, D. E. Conflict, arousal, and curiosity. New York: McGraw-Hill, 1960.

Berlyne, D. E. Motivational problems raised by exploratory and epistemic behavior. In S. Koch (Ed.) Psychology: A study of a science. Volume 5. New York: McGraw-Hill, 1963, pp. 284-364.

Activity 4
Task 1

Summing Up

If you have completed this workshop you should have learned quite a bit which can be of use to you in your teaching. It is the purpose of this final part of the workshop to sum up the major guidelines for enhancing student motivation and achievement. We could have begun with these guidelines but you would probably not have known how to implement them. The workshop materials and activities should have helped you to do so and better comprehend the theories and rationale underlying each guideline.

Guidelines

1. Be familiar with the basic relationship among the concepts of learning, motivation and performance and use your knowledge to make more accurate inferences about what students have or have not learned and why they have or have not.

2. Think about student motivation in terms of the basic psychological concepts and meanings rather than the usual global meanings applied by lay persons. Use your more precise nomenclature to be a better observer of student behavior and a better inferrer of causes for various motives and patterns of behavior.

3. Be familiar with your own profile of needs which motivate your own consistent orientations and strivings and recognize how they influence your teaching.

4. Be aware of the wide range of needs which motivate behavior and the great individual differences between students on their needs profiles.

5. Recognize and be able to identify the main types of program/classroom climate which exist, their relationship to instructors needs, the types of power and control used with students within each climate, and the effects of the various climates on student behavior. Assess the program/classroom climate of your college and your own classes. Change it to be more achievement oriented if possible, toward producing a maximally supportive and motivating climate.

6. Recognize that some students and colleagues are more growth or safety oriented than others and consequently need less or more structure, supervision and direction to learn and perform successfully. Respect your students' needs and differences. Think of them and work

with them as individual people, not as an amorphous group. Base your decisions upon what students have learned, can or cannot do and their degree of success upon multiple observations and measures of their performance. Whenever possible, wean students away from a safety orientation and toward a growth orientation by helping them to become more competent in areas of weakness and sincerely praising and recognizing good performance.

7. Use the conceptual structure of the content or discipline you teach as an effective set of tools or concepts upon which to build and organize instruction. Make frequent use of advance organizers, charts, schematics, and general principles which foster the meaningful learning, retention and application of specific information.

8. Incorporate as regular aspects of your instruction activities which foster learning through enactive, iconic and symbolic modes. Use concrete examples, physical activity and manipulation, graphics, images and examples whenever possilbe to illustrate the meaning and proper use of abstract conceptual relationships.

9. Attend to the nine events of instruction. Insure you have meet each of the conditions required for effective learning outlined in Gagné's nine events of instruction.

10. Make use of novelty, incongruity, discrepant events and variety to add an element of humor and the unexpected in your day to day teaching. Learn how to capatilize upon situations which may spontaneously arise which are appropriate for making a joke or stimulating curiosity and teaching an important concept at the same time.

11. Never forget that the most abundant and most important resource available to you as you try to think up examples, illustrations, and ways to present and generalize ideas are your students' and your own ideas and experiences. Ask and make it possible for your students to participate in the adventure of your teaching.

Activity 4
Task 2

Evaluating the Workshop

Please complete this evaluation form and turn it in to the workshop leaders. Circle the most appropriate response to each item.

1. How close was the workshop to you expectations?

   Very close 1 2 3 4 5 Not close at all

2. How much do you feel you have learned from the workshop?

   Very little 1 2 3 4 5 A great deal

3. How good an example do you feel the workshop materials and the conduct of the leader are of the principles described in the workshop?

   A poor example 1 2 3 4 5 A good example

4. How likely is it that you will use the principles and techniques presented in this workshop in:

   a. The teaching of your own classes?

      Not likely at all 1 2 3 4 5 Very likely

   b. The training of groups of other teachers in your field or a related field?

      Not likely at all 1 2 3 4 5 Very likely

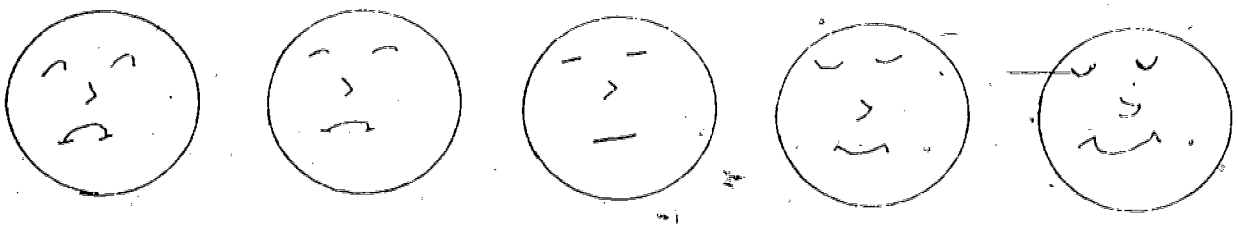
5. How appropriate to your field were the examples used to illustrate the various principles and techniques?

   Not appropriate 1 2 3 4 5 Highly appropriate

6. Do you intend to continue to study on your own, the rest of the workshop materials which were not dealt with in this session?

   Definitely not 1 2 3 4 5 Definitely yes

7. What is your overall feeling about this workshop on motivation?



1 2 3 4 5

8. Please briefly state your professional field, professional role, and duties.

9. Please make any comments you wish.

Appendix

A Individual Cub Scout Record

B Pretest for Workshop

C Feedback Sheet for Pretest

D Post-test for Workshop

E Feedback Sheet for Post-test

F Notes for Mini Lectures

ADVANCEMENT RECORD

This Cub Scout becomes 10 on _____ (Date)

and will be eligible to join a Webelos den. (He is also eligible when he completes his fourth grade on _____)

BOBCAT

1. Learn and give the Cub Scout Promise _____
2. Repeat and explain the Law of the Pack _____
3. Explain the meaning of Webelos _____
4. Show and explain the Cub Scout sign and handclasp _____
5. Explain and give the Cub Scout motto and salute _____

BOBCAT BADGE AWARDED .....(Date) _____

HOW TO USE THIS FORM:

For ranks of Bobcat, Wolf, Bear, arrow points, Webelos activity badges, and Arrow of Light, the entries should consist of the date (i.e., month and year). For recording the starred electives a "tally" system may be used since some of these electives may be done more than once. A tally entry (I) is given for each time the elective project is completed. Four individual tally entries with a diagonal line across them equals 5 thus: 𝍸

WOLF

ACHIEVEMENTS

1. Feats of Skill _____
2. Flag _____
3. Keeping Healthy _____
4. Your Home and Community _____
5. Tools _____
6. Collections _____
7. Conservation _____
8. Tying Things _____
9. Home and Traffic Safety _____
10. Family Fun _____
11. Religious Activities _____
12. Research and Books _____

BADGE AWARDED .....(date) _____

ELECTIVES

1. *Secret Codes _____
2. Dramatics _____
3. *Handicraft _____
4. Baseball _____
5. *Model Boats _____
6. Kites _____
7. Foot Power _____
8. Machinery _____
9. *Parties and Gifts _____
10. Indians _____
11. Songs _____
12. Drawing _____
13. Birds _____
14. Pets _____
15. Gardening _____
16. Family Alert _____
17. Cooking _____
18. Outing _____
19. Fishing _____
20. Sports _____

GOLD ARROW POINT _____
SILVER ARROW POINT _____
SILVER ARROW POINT _____

*See "How To Use This Form" above.

BEAR

ACHIEVEMENTS

1. Wildlife Conservation _____
2. Woodwork _____
3. Using Rope _____
4. Outdoor Games _____
5. Whittling _____
6. Our American Heritage _____
7. Family Get-Together _____
8. Cub Scout Fitness _____
9. Writing _____
10. American Folklore _____
11. Religious Activities _____
12. Protection _____

BADGE AWARDED .....(date) _____

ELECTIVES

1. Skies _____
2. Weather _____
3. Radio _____
4. Electricity _____
5. Big Boats _____
6. *Aircraft _____
7. Things That Go _____
8. Bicycling _____
9. Cub Scout Band _____
10. Masks _____
11. Photography _____
12. Nature Crafts _____
13. *Magic _____
14. Landscaping _____
15. Farm Animals _____
16. *Repairs _____
17. Backyard Gym _____
18. Swimming _____
19. Water and Soil Conservation _____
20. Sports _____

GOLD ARROW POINT _____
SILVER ARROW POINT _____
SILVER ARROW POINT _____

WEBELOS

ARROW OF LIGHT

1. Scout Oath, Law, motto, slogan, sign, salute, handclasp _____
2. Scout badge _____
3. Outdoor Code _____
4. Uniform _____
5. Flag ceremony _____
6. First aid _____
7. Three activity badges _____

BADGE AWARDED _____
GRADUATION CEREMONY HELD _____

ACTIVITY BADGES

1. Aquanaut _____
2. Artist _____
3. Athlete _____
4. Citizen _____
5. Craftsman _____
6. Engineer _____
7. Forester _____
8. Geologist _____
9. Naturalist _____
10. Outdoorsman _____
11. Scholar _____
12. Scientist _____
13. Showman _____
14. Sportsman _____
15. Traveler _____

LEADERSHIP

	FROM	TO
Denner		
Assistant denner		
Webelos denner		
Webelos asst. denner		

MEMBERSHIP

Became Cub Scout (registered) _____
Joined Webelos den _____
Became Scout (registered) _____

Transferred into pack _____
Transferred out of pack _____
Dropped from pack _____

Pretest

1. T or F If a student fails to perform a task correctly, it can be assumed he has not learned to perform the task.

2. T or F An example of a psychogenic need is the need for sufficient motor activity to promote healthy muscle tone and physical well being.

3. T or F Motivation is a construct which is needed to explain persistence of an individual toward mastery of a different task or achievement of a remote goal.

4. T or F Generally, if a student fails to perform a task correctly it can be assumed he was not sufficiently motivated to learn the correct performance in the first place.

5. A clinical instructor supervises fifteen students in on-the-job-training. He is friendly and close to the students. When they perform poorly on a task, he feels bad but tends to ignore the inadequate performance and not call it to the student's attention. He worries about students not liking or respecting him and generally assigns high grades whether or not they are earned. What inference can be made about this instructor's classroom climate?

   a. It is characterized by openness, trust, and a sense of well being.
   b. It is based upon the strong needs of the instructor to achieve.
   c. It is determined largely by the instructor's needs for power or control.
   d. It is determined largely by the instructor's needs for affiliation.

6. Upon graduation from medical laboratory technology, Ann turns down a good job in a hospital in a city 300 miles away. She keeps the job she had as a student working as a waitress in a burger stand. She explains her choice by saying, "I have many friends here. I don't know if I could do all that's expected of me in the new job. Maybe something will come up here." In terms of Maslow's needs theory, Ann can be described as:

   a. having a strong need for knowledge.
   b. being safety oriented.
   c. being indecisive.
   d. having a strong need for failure.

****

John likes his science courses, but has trouble doing his homework. Everytime he starts to study, if he hears some of his friends talking or getting ready to go out, he stops working and joins them. Al enjoys talking and going out too. However, once he has started his homework, Al cannot be lured away until he has finished the assignment. Answer the following questions.

7. T or F Al is more motivated than John.

8. T or F John's needs for affiliation are stronger than his needs for achievement.

9. T or F Al is probably more intelligent than John.

****

10. In any given class you teach or group you supervise, there are always individual differences in the academic ability and intelligence of the students. There are also differences in the professional and academic achievement of these students. How much of the observed variation in student academic and professional competence can be empirically explained by differences in intelligence and general academic ability among students?

    a. About 80%.
    b. About 50%.
    c. About 35%.
    d. Less than 25%.

11. An instructor teaching about cellular metabolism draws a diagram of a cell on the floor. Each student is handed a card with a molecular or iconic name on it. The instructor asks students to pretend they are an ion and/or molecule and to move into and out of the cell, breaking down, combining, etc., just as would happen in a real living cell. This teaching technique is an example of:

    a. an advance organizer.
    b. structure in teaching.
    c. enactive representation.
    d. need for dominance.

12. The activity for teaching aspects of cellular metabolism which is described above is an example of:

    a. a simple variation in the usual teaching routine which is likely to increase student arousal level.
    b. teaching through the use of a cognitive map.
    c. the proper use of all nine events of instruction.
    d. symbolic learning of conceptual relationships through reduction of affiliation and deference needs.

Feedback Sheet for the Pretest

The correct answer and a brief explanation is given for each item.

1. False. The student may have learned to perform the task, but not be motivated to do so or actually be motivated not to perform the task. An example is the physical therapy student who learned how to carry out debrisment of burn patients, but refuses to perform the task because he finds it so distasteful. See Figure 1, page 7 and pages 19-23.

2. False. Psychogenic needs are not physiological but emotional or cognitive in origin. See Table 2, page 13.

3. True. Motivation is the construct usually used to describe persistence and goal orientation. See pages 5 through 9.

4. False. A student may be highly motivated to learn to carry out a task or procedure, but still fail to learn to do so. Most tasks which are learned depend upon the prior learning of other skills and information. Failure to perform a task correctly can be due to either inadequate learning of prerequisites or inadequate motivation on the part of the learner. See Figure 1, page 7 and pages 5 - 9.

5. D. See Table 1, page 33. The instructor described is best characterized by strong needs for affiliation.

6. B. Ann is safety rather than growth oriented. She probably also has a greater need to avoid failure than a need to achieve. See Figure 3, page 14 and page 15 of the paper, "Theories of Individual Differences in Motives and their Implications."

7. False. Both Al and John are highly motivated, but in different directions. John's needs toward affiliation are stronger than his needs toward achievement. Thus he is motivated to socialize rather than study in a situation which demands a choice. See Table 1, page 33 and pages 12 through 26.

8. True. See the above explanation. The reverse is true for Al.

9. False. No inference can be made about the respective intelligences of John and Al from this information. Different motive orientations are not predictive of different general intelligence levels.

10. D. Intelligence and general academic ability empirically determine less than 25% of the variation in academic grades and performance. See page 6.

11. C. This is a good example of a technique which involves learning through enactive and iconic representation. See pages 43 throught 53.

12. A. The activity described is a good example of the simple type of variation in teaching that is excellent for gaining and controlling student attention and increasing general arousal level. See pages 43 through 53, 57 through 62, and 63 through 66.

Post-test

1. If you want to determine the type of classroom climate which exists in your own classes, what are some areas you should examine?

   a. How you deal with student conflict, how much responsibility you allow students, and the methods you use to reward and control student behavior.
   b. How you go about preparing for class, how often you test students, and how well your students do on standard tests.
   c. How many students are in your class, how often they are absent, and how old they are.
   d. How many males versus females are enrolled, what their majors are, and when they plan to graduate.

2. As an instructor, what can you do to insure students with a safety orientation participate in and learn all essential procedures?

   a. Keep accurate records of performance.
   b. Clearly describe all major competencies to be acquired by students.
   c. Treat all students in a completely impersonal manner, making no allowance for individual differences in needs or preferences.
   d. Both a & b but not c.

3. Students frequently object to autotutorial individualized learning systems. One reason for this objection is that such systems generally fail to meet:

   a. safety needs.
   b. esteem needs.
   c. achievement needs.
   d. affiliation needs.

4. T or F Generally, safety oriented persons have needs to succeed which are stronger than the need to avoid failure.

5. T or F The motives which direct a person's life choices and activities are highly stable and not influenced very much by immediate environmental events such as loss of a job, marriage, or birth of a child.

6. T or F There are many things happening everyday in our world that we could learn, but do not. Other things are learned very quickly. The main reason some things are learned and others are not depends upon how much time is spent in a situation.

7. Sometimes in a clinical setting certain students will hang back and avoid carrying out tasks which are difficult, dangerous, embarrassing, or painful for a patient. Students who consistently avoid such situations may be characterized as having:

   a. a safety orientation.
   b. less than average intelligence.
   c. inadequate academic backgrounds.
   d. strong needs to help others.

8. In teaching how to prepare a microscope section with a microtome the instructor first shows a group of five students how to prepare the tissue sample for slicing. Then she shows how to mount the tissue on the machine, operate the machine, slice the tissue, mount it on a slide, and stain it. Two students in the group watch but never actually perform the entire sequence. For these students which of the Gagné events of instruction have been omitted?

   a. providing feedback about performance.
   b. eliciting performance.
   c. presenting the stimulus material.
   d. all of these.

9. A professor who demands students sit up straight, regularly attend class, speak only when called upon and who marks down students' grades for disagreeing with him probably operates a classroom with a climate based upon

   a. need for power and coercive control.
   b. need for achievement and expert control.
   c. need for excellence and reward power.
   d. need for professionalism and referent power.

10. Which factor contributes most to the observed differences in the academic and professional performance of students who have different levels of intelligence and general academic ability?

   a. Intelligence and academic ability explain about 80% of the observed variation in performance.
   b. Motivational factors account for much more of the variation in performance than general academic ability or intelligence.
   c. General intelligence and motivational variables contribute about equally to observed variations in performance.
   d. The major contributor to student achievement is neither general intelligence or motivational factors, but the degree to which the teacher demands excellence.

11. One teacher of chemistry requires his students to memorize the periodic chart of the elements. Another teacher of chemistry spends three lectures explaining the logical organization behind the periodic table organization. He shows that each column consists of a family of elements with similar chemical properties, that metals, and nonmetals are grouped in two different areas of the chart, and that the sequence of elements is arranged in ascending order by atomic numbers. What can be said about these two teachers?

a. The first teacher is undoubtedly more achievement oriented than the second.
b. The second teacher is making better use of structure to aid learning than the first.
c. Students of either teacher can be expected to be equally motivated to learn the positions of elements in the periodic chart.
d. The second teacher is making use of mnemonic devices while the first is using reward power.

12. Which one is a general guide to producing appropriate novelty and variation in your day to day teaching in order to increase levels of student arousal, attention, and motivation?

a. Frequently dress in a bizarre manner when you come to class.
b. Tell wild stories and include many jokes in your lectures.
c. Change the loudness and pitch of your voice dramatically as you lecture, alternating between whispering and screaming.
d. Try to include something new and different in your classroom teaching routine fairly frequently.

Feedback Sheet for the Post-test

The correct answer and a brief explanation is given for each item.

1. A. The first option contains dimensions of classroom climate which are under direct instructor control. Some of the other options include somethings which are related to a dimension of classroom climate, but also include variables which are not under teacher control or directly related to classroom climate. See pages 28 through 35 and Table 1, page 33.

2. D. Both A and B are correct. C is incorrect. Simply treating everyone alike and not recognizing that some students need more direction, supervision, and assistance is unsound. In such a situation the student with strong safety needs may avoid completely, or participate minimally, in important tasks. Such a student often needs more supervision and instruction than other more growth oriented students. See pages 17 through 26.

3. D. Affiliation needs are concerned with being and working with other people. Often these needs are denied by automated and individualized learning systems which may meet achievement, safety and esteem needs very well. See Example 1 page 19 and page 22. See also pages 24 to 26.

4. False. Safety oriented people usually have needs to avoid failure which are stronger than needs to succeed. See page 15 in the paper "Theories of Individual Differences in Motives and Their Implications."

5. False. Although motive patterns are pervasive and tend to be stable over long periods of time, they are also greatly influenced by situational variables which often temporarily change motives and behavior. See pages 8 and 9.

6. False. It is not how much time which is spent in a situation which determines if relationships or skills are learned. Rather it is the motivation of the individual which directs his attention and behavior toward the mastery of specific relationships or skills in that situation. See page 6.

7. A. Students who consistently avoid difficult tasks or situations are generally safety oriented. They have strong needs to avoid failure. See pages 17 through 26.

8. D. All three of these events of instruction have been bypassed as well as two others. Showing someone else how to prepare a slide of a tissue is not the same as letting them do so. The stimulus material is the doing of the activity and the direct tactile, kinesthetic and cognitive feedback which results from the doing. The instructor also failed to elicit student performance, could not give feedback about adequacy of performance, and did not make provision for generalization, retention and transfer. See pages 55 through 62.

9. A. The instructor described probably has strong needs for power which shapes classroom climate and he obviously uses coercive, legitimate and reward power as means of control. See Table 1, page 33.

10. B. General academic ability and intelligence account for less than 25% of the variation in student achievement. The other 75% is accounted for by differences in motivational variables and degree of prior learned skills and information.

11. B. The second teacher is using the logical conceptual structure of the discipline area to teach the location of given elements in the periodic table of the elements. His students are much more likely to want to learn the material, more able to do so with less effort and to also retain the material longer. See pages 37 to 42.

12. D. The other three options are likely to be distracting or annoying. They also are very likely unrelated to the concepts which would be tuaght in most allied health classes. The last option is appropriate because it can be used to introduce novelty and variation while still dealing with the content and skills which are the main objective for teaching. See pages 43 through 50.

NOTES FOR MINI LECTURES

The notes included in this next section contain the main points of each didactic section of the workshop materials. They are presented here in primary type to make them suitable as overhead transparencies without re-typing. Used as an overhead transparency each chart provides the main sequence of ideas to aid the workshop leader's presentation of mini lectures. Students and the workshop leader should both read the full versions of the papers which the notes summarize. The notes are simply provided to assist instruction.

OBJECTIVES

UNDERSTAND AND APPLY BASIC CONCEPTS, THEORIES, AND PRINCIPLES TO EXPLAIN BEHAVIOR

ACQUIRE SOME PRACTICAL TECHNIQUES USEFUL IN DAY-TO-DAY TEACHING TO INCREASE STUDENT MOTIVATION AND ACHIEVEMENT

POSSESS A COMPLETE SET OF WORKSHOP MATERIALS WHICH WILL ALLOW YOU TO:

1) COMPLETE FOLLOW UP STUDY AFTER THE WORKSHOP
2) CONDUCT A WORKSHOP FOR YOUR COLLEAGUES

ORGANIZATION AND ACTIVITIES

A FAST PACED SERIES OF DIDACTIC AND EXPERIENTIAL ACTIVITIES

ACTIVITY 1 (D) BASIC CONCEPTS

MINI-LECTURE SETTING FORTH THE BASIC CONCEPTS AND NOMENCIATURE OF MOTIVATION THEORY

ACTIVITY 2 (E & D) MAJOR THEORIES

IDENTIFYING NEEDS AND MOTIVES
CATEGORIZING NEEDS AND MOTIVES
THEORIES OF NEEDS AND MOTIVES
APPLICATION OF THEORY TO EXPLAIN INDIVIDUAL DIFFERENCES IN STUDENT PERFORMANCE
GUIDELINES FOR RECOGNIZING AND DEALING WITH INDIIVIUAL DIFFERENCES IN NEEDS AND MOTIVES

ORGANIZATION AND ACTIVITIES (CONT.)

ACTIVITY 3 (E & D) PLANNING INSTRUCTION TO MAXIMIZE MOTIVATION AND ACHIEVEMENT

PROGRAM/CLASSROOM CLIMATE

INSTRUCTOR NEEDS AS ORIGIN OF CLIMATE

TEACHING TECHNIQUES FOR ENHANCING MOTIVATION AND ACHIEVEMENT

1) CONCEPTUAL STRUCTURE
2) CONCRETE EXPERIENCE
3) EVENTS OF INSTRUCTION
4) VARIETY, NOVELTY, CURIOSITY, DISCREPANT EVENTS, INCONGRUITY

ACTIVITY 4 (E & D) SUMMING UP

GUIDELINES FOR PRACTICE

EVALUATING THE WORKSHOP

EVALUATING PARTICIPANT LEARNING

BASIC CONCEPTS

LAY USE OF THE TERM MOTIVATION

MOTIVATION AS AN END IN ITSELF

MOTIVATION AS A MEANS TO ACHIEVEMENT

LEARNING DEFINED

RELATIONSHIP AMONG MOTIVATION, LEARNING AND PERFORMANCE (FIGURE 1, P.7)

MOTIVES DETERMINE WHAT EVENTS AND SITUATIONS ARE REINFORCERS AND INCENTIVES. THEREFORE, THEY DIRECT LEARNING AND PERFORMANCE TOWARD GOALS AND EXPLAIN PERSISTANCE.

MOTIVATIONAL RATHER THAN INTELLECTUAL VARIABLES ACCOUNT FOR 3/4 OF THE OBSERVED VARIATION IN STUDENT ACADEMIC ACHIEVEMENT

ORIGIN OF MOTIVE PATTERNS

MOTIVES ARE THEMSELVES LARGELY LEARNED

MOTIVES ARISE FROM NEEDS

A PERSONS LIFE ORIENTATION AND WORLD VIEW IS DETERMINED BY LEARNED MOTIVE PATTERNS.

BASIC CONCEPTS (CONT.)

MOTIVE PATTERNS ARE STABLE AND PERVASIVE

PERSONALITY AND MOTIVE SYSTEMS ARE LARGELY DETERMINED BY THE TYPE AND QUALITY OF NUTURANCE IN CHILDHOOD AND ADOLESENCE

TEACHERS OF ADULT STUDENTS CONTINUE TO INFLUENCE THE MOTIVE SYSTEMS OF THEIR STUDENTS - TEACHERS CAN HELP OR HURT!

SITUATIONAL ASPECTS OF MOTIVES -

BEING UP AND BEING DOWN -

EVENTS SUCH AS DEATH OF A LOVED ONE, MARRIAGE, FAILURE, INJURY, ACCIDENT, SUDDEN FAME OR ACHIEVEMENT, WAR, CHILDBIRTH OR FALLING IN LOVE TEMPORARILY ALTER STABLE MOTIVE SYSTEMS.

GROUP TASK

IDENTIFYING MOTIVES

INDIVIDUALLY COMPLETE ACTIVITY 2,
TASK 1 ON PAGE 10. (2 MIN.)

THEN TURN TO PAGE 11. DISCUSS
THE QUESTIONS IN ACTIVITY 2,
TASK 2 IN YOUR GROUP (8 MIN.)

MAJOR THEORIES

MURRAY'S PSYCHOGENIC NEEDS (FIGURE 2, P. 13)

INDIVIDUAL DIFFERENCES ARE EXPRESSED AS DIFFERENT NEED PROFILES FOR DIFFERENT PERSONS

LIFE ACTIVITIES AND CHOICES ARE BASED ON THE DOMINANT NEEDS OF THE INDIVIDUAL

MASLOW'S NEEDS HIERARCHY (FIGURE 3, P. 14)

BOTH PHYSIOLOGIC AND PSYCHOGENIC NEEDS ARE INCLUDED

HIGHER NEEDS ARE CAPABLE OF ~~MOTIVATING AND DIRECTING BEHAVIOR~~ ONLY AFTER LOWER NEEDS BECOME NON-PROBLEMATIC, MET ON A REGULAR BASIS

HIGHER NEEDS-MOTIVES ARE INTRINSIC, SELF AWARDED, SELF CONTROLLED

LOWER NEEDS-MOTIVES ARE EXTRINSIC AWARDED BY OTHERS OR THE ENVIRONMENT

MAJOR THEORIES (CONT.)

PERSONS TEND TO HAVE AN OVERALL ORIENTATION TOWARD EITHER THE LOWER OR HIGHER ORDER NEEDS-MOTIVES

SAFTEY VS. GROWTH (MASLOW)

EXTERNAL VS. INTERNAL LOCUS OF CONTROL (ROTTER)

$M_{(AF)} > M_{(S)}$ OR $M_{(S)} > M_{(AF)}$

ORIGIN VS. PAWN (DECHARMS)

DEFENDER VS. COPER (BRUNER)

GROUP TASK

TURN TO PAGE 18 PROBLEMS

WATCH THE LEADERS ROLE PLAY THE SITUATIONS (5 MIN.)

AFTER THE ROLE PLAYS, IN YOUR GROUPS DISCUSS AND INTERPRET THE SITUATIONS IN TERMS OF THE MURRAY AND MASLOW THEORIES. (5 MIN.)

PRESENT YOUR INTERPRETATIONS TO THE WHOLE GROUP (1 MIN. FOR EACH GROUP PRESENTATION) (4 MIN.)

SUMMARY OF GUIDELINES BY WORKSHOP LEADER (4 MIN.)

GROUP TASK

TURN TO P. 28, 29, & 30.

READ THE STORY ABOUT

- THE WICKED WITCH OF THE WEST
- THE FRIENDLY MUNCHKINS
- THE WIZARDS OF A.M.P.L.

DISCUSS THE QUESTIONS ON PAGE 31
IN YOUR GROUP

INSTRUCTOR NEEDS AND CLASSROOM CLIMATE

PROFESSORS AND ADMINISTRATORS HAVE STRONG NEEDS AND MOTIVE SYSTEMS AS DO ALL PERSONS.

THESE NEEDS - MOTIVES SHAPE PROGRAM/CLASSROOM CLIMATE.

CLIMATE INTERACTS WITH STUDENT NEEDS-MOTIVES TO INFLUENCE LEARNING AND ACHIEVEMENT, POSITIVELY OR NEGATIVELY.

PROGRAM/CLASSROOM CLIMATE IS DETERMINED BY SEVERAL DIMENSIONS (TABLE 1, P. 33).

THERE ARE THREE GENERAL TYPES OF CLIMATES WHICH ARE DETERMINED BY INSTRUCTOR/ADMINISTRATOR NEEDS.

WHICH CLIMATE IS BEST? (SEE PARA. TWO, P. 34)

WHAT IS YOUR PROGRAM/CLASSROOM CLIMATE?

GROUP TASK

COUNT OFF BY TWO'S IN YOUR GROUPS.

ONES GO TO _____

TWOS GO TO _____

STUDY THE LIST OF WORDS YOU WILL FIND.

YOU HAVE 1 1/2 MINUTES TO STUDY.

- TAKE NO NOTES
- DO NOT TALK
- WHEN THE TIME IS UP, RETURN TO YOUR TABLE, LEAVING THE WORD LIST IN THE OTHER ROOM.

LATER YOU WILL BE TESTED ON YOUR KNOWLEDGE OF THE WORD LIST

GROUP TASK

DENTAL HYGIENE LESSON

TAKE A TOOTH CARD

PRETEND YOU ARE THAT TOOTH

ASSUME YOUR RIGHTFUL POSITION IN THE PROPER DENTAL ARCH

CARRY OUT THE ORDERS OF THE INSTRUCTOR (5 MIN.)

PHYSICAL THERAPY LESSON ON CENTER OF GRAVITY AND COUNTER-BALANCE (3 MIN.)

PRECISE COMMUNICATION ACTIVITY (5 MIN.)

AFTER PARTICIPATING IN THESE ACTIVITIES DISCUSS THE QUESTIONS ON PAGE 53 IN YOUR GROUP. (5 MIN.)

CONCRETE EXPERIENCES AS MEDIATORS AND MOTIVATORS

BRUNER'S MODES OF REPRESENTATION

ENACTIVE (PHYSICAL DOING)

ICONIC (DOING BY IMAGES AND SENSATIONS)

SYMBOLIC (DOING BY SYMBOLS AND THINKING)

LEARNING ALWAYS INVOLVES ALL 3 MODES

EXAMPLE: USE OF MICROTOME, SHAKING HANDS

ACADEMIC COURSES OFTEN STRESS THE SYMBOLIC MODE TO THE EXCLUSION OF THE OTHERS, EXPECIALLY THE ENACTIVE.

LABORATORY AND CLINICAL INSTRUCTION USES ALL THREE MODES. STUDENTS ENJOY AND LEARN MUCH FROM THESE.

USE OF ALL THREE MODES IS MORE MOTIVATING TO STUDENTS AND RESULTS IN MORE THOROUGH AND STABLE LEARNING.

MANY OPPORTUNITIES EXIST TO PRESENT COMPLEX MATERIAL IN ENACTIVE AND ICONIC MODES IN TEACHING ANY SUBJECT.

WHEN AND HOW OFTEN SHOULD SUCH ACTIVITIES BE USED? (SEE P. 49-50).

GROUP TASK

FIRST AID LESSON

TURN TO PAGE 54.

WATCH AND PARTICIPATE IN THE DEMONSTRATION LESSONS (5 MIN.)

WHEN THE DEMONSTRATIONS ARE COMPLETE, DISCUSS THE QUESTIONS ON PAGE 54. REFER TO PAGES 57-62 TO ANSWER QUESTION 3.

SEE TABLE 2, PAGE 58. (5 MIN.)

COMMENTS BY WORKSHOP LEADER (2 MIN.)

GROUP TASK

LISTEN TO THE TALL TALES TOLD
BY THE GROUP LEADERS (4 MIN.)

AFTER THE TALES ARE TOLD,
DISCUSS THE QUESTIONS ON
PAGE 64 IN YOUR GROUP.
READ PAGES 64-65. (6 MIN.)

GROUP TASK

SUMMING UP - TURN TO PAGE 67.

EVALUATING THE WORKSHOP -
COMPLETE THE FORM AND HAND IN.

FOR TOMORROW MORNING

WHEN YOU GET UP OR AT BREAKFAST, TRY TO WRITE YOUR LIST OF TWENTY WORDS, BY YOURSELF, WITH NO ADDITIONAL STUDY.

WHEN YOU HAVE FINISHED LOOK AT PAGES 38-39 TO SEE WHAT THE OTHER GROUP STUDIED.

CORRECT YOUR OWN PAPER.

READ PAGES 40-41 AND DISCUSS THE QUESTIONS ON PAGE 42 WITH A FRIEND.

COMPLETE THE POST-TEST, HAND THE TEST IN, AND READ THE FEEDBACK SHEET.

CONCEPTUAL STRUCTURE

QUICKLY WRITE DOWN THE LIST OF TWENTY WORDS YOU STUDIED EARLIER.

THEN LOOK AT PAGES 38 AND 39.

READ PAGES 40 - 41.

DISCUSS THE QUESTIONS ON PAGE 42 IN YOUR GROUP.