

LD50 of each (or a component of each) as compared to several relatively non-toxic pesticides such as captan and simazine, effectively teaches the lesson that all pesticides are not "poisons".

Other Helpful Teaching Methods

The use of lecture outlines for individual topics, as well as an overall course syllabus, has been most helpful. Such an outline allows students to listen and think rather than trying to write down every word of the lecture. The first part of the outline consists of specific instructional objectives which enable the students to know what is expected of them. Testing according to these specific instructional objectives is a straightforward, above-board way of getting students to concentrate on the more important information and concepts.

Conclusion

There are many motivational aspects and instructional methods and materials that have been used by

individuals to improve the learning climate. However, instructors must proceed with caution as to the methods they adopt and the teachers they emulate in their specific teaching programs. My best advice to newer teachers is to adopt (and modify) only those methods, use only those materials, and emulate only those outstanding teachers when these are compatible with your goals and objectives, talents and abilities, teaching budgets, and individual personalities. Although most of us can identify certain wonderful teachers who influenced our lives, our careers, and our teaching methods, we should go only so far in "teaching our students like Dr. X taught us." Also, in this high-tech age, we may get the impression that we cannot function without all of the latest "teaching machines." Never fear! Technology will never replace the warm, caring classroom teachers who let **their own personalities shine** through in their classes.

Communication Improves The Learning Climate

John A. Kline

Good classroom communication improves the learning climate; good communication takes work and planning.

As is true in most activities, the quality of planning affects the quality of results. Successful executives and professional people know that the price of excellence is careful preparation. A lawyer spends hours planning a case before appearing in court. A minister does not ad-lib a sermon but plans days or weeks in advance. In anticipation of the big game, the coach spends hours planning the plays and watching the team execute them. Should we attempt such a complicated process as learning with less attention than is given to other important activities? The answer is obvious: of course not. The effective instructor devotes much time and energy in carefully planning and preparing each lesson, whether the lesson encompasses one or several periods of instruction.

To ensure the greatest probability of learning, we must carefully select and arrange activities that will produce the desired learning outcomes in our students. Only through careful planning can we be certain that we include all necessary information and have our lesson properly organized to achieve the lesson objective.

Presentation by Kline, staff member of the Air University, Maxwell AFB, AL 36112, before the 29th Annual NACTA Conference, Kansas State University, Manhattan, KS, June 12-15, 1983. It is based on an earlier essay he authored for Air Force Manual 50-62, Handbook for Air Force Instructors.



The complete cycle of lesson planning includes six steps:

1. Determine the objective.
2. Research the topic as defined by the objective.
3. Decide how to organize the lesson.
4. Choose appropriate support material.
5. Prepare the beginning and ending of the lesson.
6. Present the lesson.

Determining the Objective

Often we will begin our lesson planning with an objective or objectives clearly in mind. At other times the objective may be shaped by the research and additional planning we do. In other words, although the first step of the lesson planning process is to determine the objective, our objective may not fully evolve until after we have completed other steps of the process.

Objects need to be student-centered. We should not state them in terms of what we want to teach, but rather they should be stated in terms of what we want our students to learn. For instance, the objective of a lesson on developing a lesson plan might be for each student to know the six steps of effective lesson planning as listed in this paper. Of course the lesson might be taught at higher than the knowledge level. We might want each student to comprehend the six steps appropriate to effective lesson planning or even to be able to apply the six steps of lesson planning. But whatever the level, the student-centered objective should guide our subsequent planning. Without a clear objective, we won't know if we ever get there. Think about that statement.

Researching the Topic

After we have written or been provided with an instructional objective, we are ready to decide on the main points of the lesson and gather materials about the lesson topic. Normally we do not collect a mass of research materials and then develop an objective to match the findings. Not only is this latter approach inefficient, but it is also likely to be ineffective. It may well ignore the specific needs of the students and the instructor. The objective should determine the research that needs to be done. On the other hand, research may justify a decision to modify an objective or rearrange main points for greater accuracy or clarity.

Usefulness and appropriateness are two important criteria for selecting relevant material. To be appropriate, information should relate to the lesson objective and have a high possibility for student retention. To be useful, it should aid both the instructor and the students in the teaching-learning process. If the instructor selects material solely on the basis of its interest value, a lesson may be filled with interesting information of little learning value to the student. On the other hand, dry, uninteresting facts - even though they are very important - may also defeat the instructor's purpose. Students are more likely to grasp and retain facts and con-

cepts that are enriched with interesting support material and arranged in a way that enhances learning.

With the objective clearly in mind, we are now ready to gather actual material or do research on the subject. The sources for this material are our own experiences, the experience of others which we gain through conversation and interviews, and written or observed material. Instructors concerned with teaching a good lesson will often draw from all of these sources.

Self

The first step in researching a lesson topic is to see what we ourselves know about the subject. Our personal knowledge may suggest a tentative organization, but more important, it will point up gaps in our knowledge where we need further research.

Others

The second step in the research process is to draw on the experience of others. People who are interested in the topic may provide ideas during the course of conversation. The most fruitful source is the expert who may help us clarify our thinking, provide facts and testimony, and suggest sources for further research.

While personal experience, conversation, and interviews provide valuable content for lessons, we must usually do further research elsewhere. If we have properly narrowed our subject and kept the purpose in mind, our research task will be easier.

Library

Modern libraries provide us with an abundance of sources: books, newspapers, popular magazines, scholarly journals, abstracts, subject files, and microfilms. Quantity is no problem; quality is more difficult. We must always concern ourselves with the accuracy and relevance of the material we select. Using an article from 1950 to discuss atomic physics today might well lead to inaccurate, irrelevant conclusions.

The next step in the research process is to evaluate the material gathered. We will probably find that we have enough material for several lessons. We must now combine some ideas, eliminate others, and perhaps expand on what we found in the research materials. We will also want to give special attention to the types of support material we have selected (definitions, examples, comparisons, statistics, and testimony). Later in this paper, we will discuss types of support material in detail.

Sometimes we have an organizational pattern in mind before we start. If not, as we gather our material, we will probably see that the ideas are beginning to form into some type of pattern. Later in this paper, we will discuss ways of organizing the lesson.

During the research phase, the instructor is likely to find material that students should read to prepare for a given class session. If we keep this possibility in mind when we begin our research, we can prepare a suggested student reading list and save time in selecting student references. When deciding on supplementary

reading for the students, we should choose interesting and informative materials that reinforce or support the lesson objectives.

Organizing the Lesson

After we have researched the topic, we must decide how to organize the lesson. Every lesson needs an introduction, body, and conclusion. In most instances the body of the lesson should be prepared before the introduction or conclusion. After we prepare the body or main part of the lesson, we will be in a better position to begin or conclude the lesson. The first consideration in planning the body is how to organize the main points, but organization of subpoints is also important. Arrangement of the main points and subpoints of a lesson will help both the instructor and the students - the instructor in teaching it and the students in learning. Most lessons, regardless of their length, divide nicely into from two to five main points.

The typical ways of organizing main or sub points of a lesson are by the patterns of time, space, problem/solution, cause/effect, pro/con, or topic. Furthermore, certain strategies can be used with each pattern from known to unknown, for instance, or from simple to complex. How does an instructor decide which patterns and strategies to use? The lesson material will often organize itself more easily with one pattern and strategy than with another. Let us consider how various patterns and strategies can be used to organize the main points of a lesson.

Time

Our vocabularies are filled with words which refer to time: now, tomorrow, yesterday, today, sooner, later, earlier, last week, a month from now, four years ago, next time. We work, play, sleep, and eat at certain times. Major events in our lives are organized by time: births, engagements, marriages, deaths. Time or the chronological pattern of lesson organization is a natural way of arranging events in the sequence of order in which they happened, or in giving directions in the order to be followed in carrying them out. This kind of organization is sometimes called sequential organization. Certain processes, procedures, or historical movements and developments can often be explained best with a time sequence pattern.

The medical technician presenting a lesson on mouth-to-mouth resuscitation would probably use the time order for the main points: (1) preliminary steps - proper body position, mouth open, tongue and jaw forward, (2) the mouth-to-mouth process, (3) caring for the patient once breathing resumes. Time order is also a logical approach to lessons dealing with such subjects as "How to Pack a Parachute," "Development of the F-15 Fighter," or "How to Prepare a Speech."

Furthermore, any lesson on a subject with several phases lends itself well to the time pattern. For example, given an objective for students to know the three planned phases of the Common Market (where phase

one was to precede phase two, and phase two to precede phase three), a lesson might have these main points: (1) Phase one - a customs union where nations agreed to reduce duties, (2) Phase two - an economic union allowing laborers and goods to move freely across national borders, (3) Phase three - a political union with national representatives as members of a common parliament and using a common currency.

Of course, rather than looking forward in time from a given moment, the strategy might be to look backward from a point in time. In other words, the strategy might be to move from recent to earlier time rather than from early to late. Regardless of which strategy is used, the flow of lesson and the transitions should make the chronological relationships between main points clear to the students.

Space

A spatial or geographical pattern is effective in describing relationships. When using this pattern, the lesson material is developed according to some directional strategy such as east to west or north to south. For instance, if an instructor were describing the domino theory of guerrilla infiltration, a good strategy would make the main points of the lesson correspond to the geographical locations of various nations.

With lessons about certain objects, the strategy might be to arrange the main points from top to bottom or bottom to top. A fire extinguisher might be described from top to bottom, an organizational chart from the highest ranks to the lowest in the organization, a library according to the services found on the first floor, then the second, and finally those on the third.

Sometimes, the strategy is to organize the lesson from the center to the outside. For example, the control panel in an airplane might be discussed by describing first those instruments in the center most often used, then by moving out toward the surrounding instruments which are used least often.

In all lessons arranged spatially, we need to introduce each aspect or main point according to some strategy. Just as with a lesson organized by time, the subject matter and the transitions should include elaboration and clarification of how the main points relate to one another. A simple listing of the various objects or places without elaboration as to how they are related may confuse the students and make the points harder to remember.

Cause/Effect

A cause/effect pattern of organization is used in a lesson where one set of conditions is given as a cause for another set. In such lessons we may use one of two basic strategies to arrange our main points. With a cause/effect strategy, we begin with a given set of conditions and show that these will produce or have already produced certain results or effects. With an effect/cause strategy, we take a certain set of con-

ditions as the effects and allege that they resulted from certain causes.

The cause/effect strategy might be used in a lesson concerning the increasing number of women in the Air Force. The lesson might first discuss the fact that women are now assuming more responsible leadership roles in the Air Force. One effect of women assuming such roles might be that women are joining the Air Force with increasing frequency.

The effect/cause strategy might be used in a lesson on child abuse. The first point might explain the effects of child abuse upon the children themselves, the parents, and even on society. The second point might suggest that the causes are that parents themselves were abused as children or that they lack proper education on parenting.

Whichever strategy is used, two cautions must be observed: (1) **Beware of false causes.** Just because one event or circumstance precedes another does not mean that the former causes the latter. Many persons assume that "First A happened, and then B took place, so A must have caused B." (2) **Beware of single causes.** Few things result from a single cause. There may be several causes, and they may not act independently. Their effect may be greater or less than the sum of their parts. Lack of safety features on automobiles does not by itself cause most highway accidents, but this cause plus careless driving and unsafe highways may in combination account for many highway accidents.

Problem/Solution

This pattern, sometimes called the disease/remedy pattern or the need/satisfaction pattern, presents students with a problem and then proposes a way to solve it. With this pattern we must show that a problem exists and then offer a corrective action that is (1) practical, (2) desirable, (3) capable of being put into action, and (4) able to relieve the problem. It must also be one that does not introduce new and worse evils of its own. For example, the issue of controlling nuclear weapons has long been debated. Those against control argue that erosion of national sovereignty from arms control is more dangerous than no control.

There are different strategies we might employ when using the problem/solution method. If the students are aware of the problem and the possible solutions, we might discuss the problem briefly, mention the possible solutions, and then spend more time in showing why one solution is better than others. For instance, our objective is for students to comprehend that solar energy is the best solution to the energy crisis. Our main points might be (1) the world is caught in the grip of an energy crisis, (2) several solutions are possible, and (3) solar energy is the best long-term solution.

If the students are not aware of the problem or need, we may describe in detail the exact nature of the problem. Sometimes when students become aware of the problem, the solution becomes evident, and little

time is needed to develop the solution in the lesson. At other times we need to spend time developing both the problem and the solution.

Still another strategy is to alternate or stagger portions of the problem with portions of the solution. For example, the cost of a project may be seen as one problem, workability another, time to do the project as a third. Taking each in turn and providing solutions to cost, workability, and time as we present these aspects of the problem may be more satisfying to students than if we had discussed all of the problem and then its total solution.

Whatever strategy is used, with the problem/solution pattern students must become aware that a problem exists before a solution will be agreed upon.

Pro/Con

The pro/con pattern, sometimes called the for/against pattern or advantages/disadvantages pattern, is similar to a problem/solution pattern in that the lesson is usually planned so as to lead to a conclusion. A major difference, however, is that fairly even attention is usually directed toward both sides of an issue with a pro/con pattern.

There are various strategies to consider when using the pro/con pattern. One consideration is whether to present pro or con first. Another is whether to present both sides and let students draw their own conclusions or to present the material in such a way that students are led to accept the "school solution." For instance, with a lesson on the effects of jogging we have to decide whether to present the advantages or disadvantages first. Then we must decide whether to let students decide for themselves whether the advantages outweigh the disadvantages. Pro/con plus one is the label given to the organization used when we draw a final conclusion based on the two sides.

When deciding on the specific strategy to use with the pro/con pattern and determining how much time to spend on each, the following guidelines may be helpful: (1) giving both sides fairly even emphasis is most effective when the weight of evidence is clearly on the favored side; (2) presenting both sides is more effective when students may be initially opposed to the school solution; (3) presenting only the favored side is most effective when students already favor the school solution or conclusion; (4) presenting the favored side last is generally more favorable to its acceptance, especially if the side not favored is not shown in too strong a light.

Topical

A topical division of the main points of a lesson involves determining categories of the subject or lesson objective. This type of categorizing or classifying often springs directly from the subject itself. For instance, a lesson about a typical college population might be divided into topical divisions of freshmen, sophomores, juniors, and seniors, with each class division serving as a main point. Housing might be discussed in terms of

on-base and off-base housing. A lesson on the Minuteman Intercontinental Ballistic Missile might be arranged with the main points of warhead, guidance, and propulsion systems.

At times the material itself suggests certain strategies for ordering the main points. For instance, a lesson on levels of learning lesson planning would most likely begin with knowledge level planning as the first main point, since knowledge level lessons are generally simpler to understand. Then the lesson would move on through the hierarchy to comprehension, application, analysis, synthesis, and finally evaluation levels. In other words, our lesson would follow a simple to complex strategy in organizing the "topics" or levels of learning.

Other topically organized lessons might follow strategies of known to unknown, general to specific, or specific to general. The number of strategies for arranging topical main points is practically infinite. The important consideration, as with any pattern, is that we give thought to the strategy of arrangement in order to improve student understanding and learning.

Choosing Support Material

A major determining development of the lesson outline is the kind of support material we decide to use. While the organization of ideas forms the basic structure of any lesson, almost all ideas need some form of clarification or proof if the student is to learn.

Most students find it difficult to understand unsupported ideas or assertions. Suppose, for instance, we tell our students that it is important to organize a speech or a lesson according to one of several patterns of presentation. We then tell them that the most common patterns are time, space, cause, problem/solution, pro/con, and topic. Most likely, we will not have provided enough information so that our students can actually use these patterns of organization. We must go on to explain each of these patterns, as has been done in the preceding section of this paper.

The subject, the method, the ability of students, the size of the class, and similar factors will help determine the amount and kinds of support material we need.

Verbal support is needed either (1) to clarify or explain our points or (2) to prove our assertions. Definitions, examples, and comparisons are used primarily for clarification support. Their use as proof is limited. Statistics and testimony of experts can be used either for clarification or proof.

Definitions

Definitions are often needed to clarify or explain the meaning of a term, concept, or principle. But like so many words, the term **definition** can mean different things and function in different ways.

In some lessons we need to use words that are technical, complex, or strange to our students. With the increasing specialization, the output of words races

ahead of dictionaries. Words such as **emphysema** (medicine), **taxonomy** (education), **detente** (military strategy), or **groupthink** (group dynamics) might require literal definitions or restatement in simpler language.

At other times we need to define words that we frequently and loosely employ. Some words simply have different meanings for different people. Words such as **democracy**, **equal rights**, **security needs**, and **loyalty** can often be defined easily. For instance, **disseminate** can be defined very simply as "spread widely." At other times we might seek novel and memorable ways to define our terms. **Pragmatism** might be defined as "a fancy word to mean that the proof of the pudding is in the eating." Sometimes it takes a little longer to define fully what we mean by a certain term. A former POW might define the sacrifice of one prisoner for another:

When you see an American prisoner giving up his meager ration of fish just so another American who is sick can have a little more to eat, that is sacrifice. Because when you don't have anything, and you give it up, or you have very little and you give it up, then you're hurting yourself, and that is true sacrifice. That's what I saw in the prison camp.

Definitions should be used to explain the meanings of acronyms, that is, words formed from initials. For the preceding paragraph, an explanation that POW stands for prisoner of war might have been necessary for some audiences. When discussing PME at AU, we might have to explain that PME at AU means professional military education taught at Air University. Furthermore, we might go on to mention that PME includes AWC, ACSC, SOS, and SNCOA - that is, the Air War College, the Air Command and Staff College, the Squadron Officer School, and the Senior Non-commissioned Officer Academy.

Finally, at times an entire lesson may be needed to define or otherwise introduce students to a new term, concept, or principle. For example, when talking about the meaning of communication as transaction, it would probably be insufficient simply to say that the transactional approach means to consider the total communication process and the interaction of the various parts of the process on each other. Other forms of support material such as examples and comparisons might be needed to define fully what we mean.

Examples

Any time students ask us to give a "for instance," they are asking for an example to clarify the point we are trying to make. Sometimes the examples we use may be reasonably long. At other times a short example is sufficient. In some cases short examples are similar to definitions. The earlier definition of "sacrifice" given by the former POW might also be considered a short example. The fact that some support materials might

be classed either as definitions or examples should not be a major concern to us. As classroom instructors we are more interested in using effective support material than in classifying it.

Often short examples can be clustered together to help students gain a more complete understanding of the point. In a lesson on a barrier to effective communication, we might cluster examples of spoonerisms: "Is the bean dizzy?" (Is the dean busy?) "I'll have a coff of cuppee" (I'll have a cup of coffee); "A half-warmed fish within us" (A half-formed wish within us).

Several questions can be asked about examples used in lessons:

- Do they accurately represent the point?
- Will students clearly understand their meaning?
- Do they fit the content? (Avoid those that may confuse.)
- Do humorous ones add rather than detract from the lesson?
- Do they come from personal experience or can other examples be personalized in such a way as to seem real?
- Can anything be gained from clustering more than 3 or 4 examples? (Usually not.)
- Do long ones take too much time? (At times affective or attention-getting value of long examples may justify their use.)
- Are they interesting?

The appropriate answers to these questions should be obvious.

Comparisons

Description often becomes more graphic when we place an unknown or little understood item beside a similar but better known item. We might want to compare things that are unlike or things that are very much alike.

Metaphors such as Winston Churchill's "iron curtain" or similes (using the words **like** or **as**, such as Robert Burns' "My love is like a red, red rose," or the saying "strong as an ox") are comparisons of things that are unlike in most ways. We often use comparisons of unlike things in lessons. For instance, we might say, "the flow of knowledge is like the relentless and uncompromising flow of a river after the spring thaw as it imposes on us the requirement that we not only adjust but anticipate the future." Or we might show that being a member of a branch in an Air Force organization is like living in a family where we have intimate contact with each other. We might carry the analogy or comparison further by pointing out that in a unit as in a family, members can protect, help, or irritate one another.

Although **analogies** which compare things that are unlike serve as an excellent means of clarification, they have limited utility as proof. If we wish to prove an assertion we must compare "like" things. Comparison of Russian air power with U.S. air power or a mayor

and city council with a base commander and his staff are "like" comparisons. Arguing for a longer orientation session for students in NCO academy because it has improved academic performance at another would be comparing "like" phenomena - in this case, two NCO academies.

Contrast is a special form of comparison. For instance, showing how Air Force training differs from civilian training or how today's standard of living differs from that of a generation ago clarifies and explains a point by showing contrast or differences.

Obviously, any kind of comparison may be very brief like those given here or they may be quite long. We need to decide what will work best in a given situation. But whether long or short, comparisons are a valuable and generally underused method of verbal support.

Testimony

Words and thoughts of others become particularly useful when we wish to add strong proof support for assertions or points that we make. None of us is expected to be an expert on all subjects; often we must rely on what others have said. At times we use the testimony of others simply to clarify or explain an idea; often it is intended to provide proof for a claim.

A lesson dealing with managerial effectiveness in an organization may have as one of its main points the importance of effective downward communication. In other words, we want to stress how important it is for supervisors to keep their subordinates informed. We might quote from a recent "Air Force Policy Letter For Commanders," which says, "Commanders and supervisors have an increased responsibility to keep Air Force military and civilian members informed." We might also report the findings from a recent study by the International Association of Business Communicators which show that "face-to-face communication, including group meetings and one-on-one dialogue, proved the most effective means of communicating with employees."

Sometimes, we will use direct quotations as we have done here. At other times we will paraphrase what another has said. Whatever the case, there are two questions we will want to ask about the sources of testimony we plan to use: (1) Are the sources competent - do they know what they are talking about? and (2) Can they be trusted - are they free from bias? We might also consider whether the testimony is relevant, clear, and interesting and whether quotations are longer than necessary.

Statistics

Statistics are probably the most misused and misunderstood kind of verbal support. When properly collected and wisely used, statistics can help instructors clarify their ideas. Statistics are also the most powerful proof support we can use. Not all figures, however, are statistics; some are simply numbers. Statistics show

relationships (largeness or smallness, increases or decreases) or summarize large collections of facts or data. When we choose statistics to use in our lessons, there are some questions we should ask.

1. Are the statistics recent? Figures concerning the cost of living in 1960 would have limited usefulness for today's family planning its budget. When selecting statistics to use in our lessons, we should be on guard if no date is given or if the statistics are outdated.

2. Do the statistics indicated what they purport to? A single test score may not be a true measure of a student's ability. Comparing the simple number of planes may not indicate the comparative strength of two countries' air forces.

3. Do the statistics cover a long enough time to be reliable? The results of how one class responded to a new curriculum change would be less meaningful than how three or four classes responded to the change.

4. If the statistics are drawn from a sample, does the sample accurately represent the group to which we are generalizing? Public opinion surveys and experimental researchers are generally sensitive to the importance of obtaining a representative sample. Instructors also need to be sensitive to this need.

5. When statistics report differences, are the differences significant? Minor variations can often be attributed to chance. In other words, if we were to collect our statistics again, the results might differ.

6. When comparing things, are the same units of measure used to make the comparison? Failure in one course might have a different meaning from failure in another. If more students fail one course than another, we cannot necessarily conclude that the content of one course is more difficult. Perhaps the grading scale rather than the content was more difficult.

7. Do the statistics come from a reliable source? And is the source clearly indicated? It is more effective to state the source of the information than to say "recent surveys show."

8. Are the statistics presented to their best advantage to aid student understanding? Could visual aids be used to present the statistics in graphic or tabular form for easier understanding? Have figures been rounded off where possible? Students are more likely to remember nearly \$45,000 than \$44,871.24. Is the number of the statistics limited so that students are not overwhelmed by them? Could the significance of statistics be made more clear with meaningful comparisons? To say that World War II cost the United States 200 billion dollars would be more clearly perceived if the figures were converted to today's dollars or if they were compared to the cost of other wars using a standard measure.

Beginning and Ending the Lesson

So far we have selected the verbal and visual material that best supports our lesson and made

necessary changes in the original tentative outline. We are now ready to cast our lesson into a final content outline. Usually before we outline, however, we will want to consider how to begin and end the lesson. If the lesson is not the first in a block of instruction, we may have little to do in the way of beginning or introducing the lesson. If other lessons in the same block of instruction are to follow this lesson, we may not need an extensive conclusion. But especially if the lesson is to stand alone, we need to give some attention toward preparing an introduction and conclusion.

Introduction

The introduction to a lesson should serve several purposes: to establish a common ground between the instructor and students, to capture and hold attention, to outline the lesson and relate it to the overall course, to point out benefits to the student, and to lead the student into the lesson content. While humor may be appropriate, the introduction should be free of irrelevant stories, jokes, or incidents that distract from the lesson objective. It should not contain long or apologetic remarks that are likely to dampen student interest in the lesson. Educators often speak of three necessary elements in the introduction of a lesson: gain attention, motivate, and provide an overview of lesson material.

ATTENTION. To gain attention, the instructor may relate some incident that focuses on the subject and provides a background for the lesson. Another approach may be to make an unexpected or surprising statement or ask a question that relates the lesson to group needs. A rhetorical question (Have you ever. . . ? or Can you imagine. . . .?) may be effective. At other times, nothing more than a clear indication that the lesson has begun is sufficient. In all instances, the primary concern is to focus student attention on the subject.

MOTIVATION. The instructor should use the introduction to discuss specific reasons why the students need to learn whatever they are about to learn. In this motivational discussion, the instructor should make a personal appeal to students and reinforce their desire to learn. The appeal may relate the learning to career advancement or to some other need. But in every instance, the instructor should cite a specific application for student learning experiences. In many cases, the need for this lesson as a foundation for future lessons is strong motivation. This motivational appeal should continue through the lesson. If a brief mention of needs is made only in the introduction, the instructor is square-filling, not motivating.

OVERVIEW. For most instructional methods, the introduction should provide an overview of what is to be covered during the class period. An overview with a clear, concise presentation of the objective and key ideas serves as a road map for learning. Effective visual aids can be helpful at this point. A clear overview can contribute greatly to a lesson by removing doubts in the

minds of the learners about where the lesson is going and how they are going to get there. Students can be told what will be covered or left out and why. They can be informed about how the ideas have been organized. Research shows that students understand better and retain more when they know what to expect. The purpose of the overview is to prepare students to listen to the body of the lesson.

Conclusion

The conclusion of a lesson may stick with the students longer than anything else said. For this reason, we should give much care to its preparation. But the conclusion is also important in its own right. The conclusion of most lessons should accomplish three things: summarize, remotivate, and provide closure.

FINAL SUMMARY. Short or interim summaries may be appropriate at various places in a lesson, for example, after each main point has been made. But final summaries come after all main points of the lesson have been made. An effective knowledge summary retraces the important elements of the lesson. As the term suggests, a final summary reviews the main points in a concise manner. By reviewing the main points, it can aid students' retention of information and give them a chance to fill in missing information in their notes.

REMOTIVATION. The purpose of the remotivation is to instill in students a desire to retain and use what they have learned. Effective instructors provide motivation throughout the lesson. But the remotivation step is the instructor's last chance to let students know why the information presented in the lesson is so important to the student as an individual. Perhaps it is important because it provides the groundwork for future lessons or because it will help do their jobs more effectively. But whatever the reasons given, they should be ones that appeal directly to the students and show the importance to them of what was learned.

CLOSURE. For many instructors the closure presents the most difficult challenge in planning a lesson. Students need to be released from active participation. In lectures they need to be released from listening. In interaction methods they need to know that it is time for their verbal participation to cease. Sometimes instructors at a loss how to close say, "Well that's about all I have to say," or "I guess I don't have anything else." This type of closure is not very satisfying. There are much more effective ways of closing. Sometimes vocal inflection can signal that the lesson is ending. Quotations, stories, or humorous incidents can also provide effective closure. Sometimes when the lesson is to be followed by others in the same block of instruction, we might say something such as, "Next time, then, we will continue with our discussion of . . . Between now and then if you have any questions, come to my office and I'll see if I can answer them for you."

Presenting the Lesson

Although preparing a lesson can be laborious, for many instructors the hardest part is actual presentation of the lesson. Let's consider three areas that are important in actual classroom teaching.

Physical Behavior

Communication experts tell us that over half our meaning may be communicated nonverbally. Although some nonverbal meaning is communicated through vocal cues, much meaning is carried by eye contact, bodily movement, and gestures. As teachers we need to know how physical behavior can improve our lecturing skill and thus enhance learning.

1. Eye contact is one of the most important factors of nonverbal communication. Nothing will enhance your delivery more than effective eye contact with your students. Eye contact is important for three reasons. First, it lets the students know that you are interested in them. Most people like others to look at them when talking. Second, effective eye contact allows you to receive nonverbal feedback from your students. With good eye contact, you can gauge the effect of your remarks. You can determine if you are being understood and which points are making an impact and which are not. You will be able to detect signs of poor understanding and signs that the students are learning. Then you can adjust your rate of delivery or emphasis. You can rephrase or summarize certain points or add more supporting data. Third, effective eye contact enhances your credibility. Teachers with greater eye contact are judged by students as being more competent.

To achieve genuine eye contact, you must do more than merely look in the direction of your listeners. You must have an earnest desire to communicate with them. The old advice of looking over the tops of your listeners' heads or attempting to look at all parts of the class systematically simply does not describe effective eye contact. Furthermore, looking at only one part of the audience or directing attention only to those students who seem to give you positive feedback may cause you to ignore large parts of the audience. Make it evident to each person in a small class and each part of the audience in larger auditoriums that you are interested in them as individuals and eager to have them understand the ideas you are presenting. In this way you will establish mental as well as sensory contact with your listeners.

Effective eye contact can be described as **direct** and **impartial**. You look directly in to the eyes of your listeners, and you look impartially at all parts of the audience, not just at a chosen few.

2. Bodily movement is one of the important factors of dynamic and meaningful physical behavior. Good body movement is important because it catches the eye of the listener. It helps hold attention needed for learning to occur. But movement also represents a

marked departure or change in your delivery pattern. It is a convenient way of punctuating and paragraphing your message. Listeners will know that you are done with one idea or line of thought and ready to transition to the next. Finally, aside from its effects on the listeners, it helps you as a lecturer. Movement helps you work off excess energy that can promote nervousness. Movement puts you at ease.

How much movement is desirable? Some rare teachers never move yet are quite effective. Unless the formality of the situation or the need to use a fixed microphone keep you in one position, then you probably should move frequently when presenting a teaching lecture. Movement from behind the lectern can reduce the psychological distance between you and the students and place them more at ease. Some instructors feel that they need the lectern to hold their notes. But instruction is actually more effective if you carry your notes with you rather than have to look down at the lectern to see them. But whenever you look at your notes, remember to **bend your eyes not your head to the paper.**

Of course, some instructors move too much. Perhaps out of nervousness they pace back and forth in front of the class. Still others have awkward movement that does not aid communication. Some leave their notes on the lectern then move in and out from behind it like a hula dancer. Others plant their feet firmly in one place then rock from one side to the other in regular cadence.

Effective body movement can be described as **free and purposeful.** You should be free to move around the class. You should not feel restrained to stay behind the lectern, but should move with reason and purpose. Use your movement to punctuate, direct attention, and otherwise aid learnings.

3. Gestures may be used to clarify or emphasize ideas in the lecture. By gestures we mean the purposeful use of the hands, arms, shoulders, and head to reinforce what is being said. Fidgeting with a paper clip, rearranging and shuffling papers, and scratching your ear are not gestures. They are not purposeful and they distract from the verbal message. Placing both hands in your pockets, or behind your back, or in front of you in the fig leaf position severely limits their use for gesturing. Holding your shoulders and head in one position during the lecture will also rob you of an effective means of strengthening your communication.

Although gestures can be perfected through practice, they will be most effective if you make a conscious effort to relax your muscles before you speak, perhaps by taking a few short steps or unobtrusively arranging your notes. Effective gestures are complete and vigorous. Many speakers begin to gesture, but perhaps out of fear, they do not carry through and their gestures abort. Comedians get laughs from the audience by timing gestures improperly. A gesture that comes after the word or phrase is spoken appears

ludicrous. Good gestures should come exactly at the time or slightly before the point is made verbally. Poor timing results from attempting to "can" or preplan gestures. Finally, good gestures are versatile. A stereotyped gesture will not fit all subjects and situations. Furthermore, the larger the audience, the more pronounced the gestures will need to be. As with all aspects of communication, gestures must fit the transaction.

In emphasizing the importance of gestures we are not advising that you adopt a dynamic, forceful mode of delivery if by nature you are quiet and reserved. As with movement, gestures should spring from within. Effective gestures are both **natural** and **spontaneous.** Observe persons talking with each other in a small group. We should try to approximate the same naturalness and spontaneity of gestures when we are lecturing.

Use of the Voice.

A good lecturing voice has three important characteristics. It is reasonably pleasant, it is easily understood, and it expresses differences in meaning. Technically we might label these three properties as quality, intelligibility, and variety.

1. Quality refers to the overall impression a voice makes on others. Certainly a pleasing quality or tone is a basic component of a good speaking voice. Some persons have a full rich quality, others one that is shrill and nasal, and still others may have a breathy and muffled tone or quality. While basic aspects of quality may be difficult to change, your voice may become more breathy when you are excited, tense when suspense is involved, and resonant when reading solemn language. Students can often tell from the voice if the teacher is happy, angry, sad, fearful, or confident. Similarly vocal quality can convey sincerity and enthusiasm. Some teachers are over-concerned about the basic quality of their voices, but at the same time they pay too little attention to the effect of attitude and emotion on the voice. Most people have reasonably pleasant voices suitable for lecturing.

2. Intelligibility of your speech depends on several factors. Attention to articulation, pronunciation, volume, as well as avoidance of vocalized pauses, over-use of stock expressions, and substandard grammar can make your voice more intelligible.

• Articulation refers to the precision and clarity with which sounds of speech are uttered. A synonym for articulation is enunciation. Good articulation is chiefly the job of the jaw, tongue, and lips. Most articulation problems result from laziness of the tongue and lips or failing to open the mouth wide enough. You should over-articulate rather than under-articulate your speech sounds. What sounds like over-articulation to you will come out as crisp, understandable words and phrases to your students.

•Pronunciation refers to the traditional or customary way words sound. Standards of pronunciation differ, making it difficult at times to know what is acceptable. Dictionaries are useful, but since they become outdated, they should not be adhered to excessively. Generally, educated people in your community (as well as national radio and television announcers) provide a good standard for pronunciation. Common faults of pronunciation are to misplace the accent (saying **de-vice** instead of **de-vice**), to omit sounds (guh'mnt for government), to add sounds (athalete for athlete), and to sound silent letters (mortgage or often). Do not overcompensate to the point that you call attention to your speech, but remember that pronunciation acceptable in informal conversation may be substandard when presenting a formal lecture.

•Vocalized pause is the name we give to syllables "a," "uh," "um," and "ah" often at the beginning of sentence. While a few vocalized pauses are natural and do not distract, too many impede the communication and learning processes.

•Overuse of stock expressions, such as "OK," "like," and "you know," should be avoided. These expressions serve no positive role in communication and only convey a lack of originality by the speaker.

•Substandard grammar has no place in the teaching lecture. It only serves to reduce teacher credibility with some students. Research shows that even persons who have been using substandard grammar all of their lives can, with diligent practice, make significant gains in this area in a relatively short time.

3. Variety is the spice of speaking. Students tire rapidly listening to a teacher who doesn't vary delivery style or a teacher with a monotonous voice. A teacher's voice that is intelligible and of good quality may still not appeal to students. You may vary your voice and at the same time improve the communication by considering the vocal fundamentals of rate, volume, force, pitch, and emphasis.

•Most teachers speak at a rate of from 120 to 180 words a minute when presenting a lecture. In normal speech, however, we vary the rate often so that even within the 120 to 180 word constraints there is much change. The temperamentally excitable person may speak at a rapid rate all the time, and the stolid person generally talks in a slow drawl. The enthusiastic but confident individual, though, will vary the rate of delivery to emphasize ideas and feelings. A slower rate may be appropriate for presenting main points while a more rapid rate may lend itself to support material. The experienced lecturer also knows that an occasional pause punctuates thought and emphasizes ideas. A dramatic pause at the proper time may express feelings and ideas even more effectively than words.

•Volume is important to the lecturer. Always be certain that all the students can hear you. Nothing

hinders the effect of a lecture more than to have some students unable to hear. On the other hand, the lecture should not be too loud for a small room. A bombastic or overly loud speaker tires listeners out very quickly.

•Force or vocal energy is needed at times to emphasize and dramatize ideas. A drowsy audience will come to attention quickly if the teacher uses force effectively. At times a sudden reduction in force may be as effective as a rapid increase. By learning to control the force of your voice, you can help to add emphasis and improve communication.

•Pitch is the highness or lowness of the voice. All things being equal, a higher pitched voice carries better than a low pitched one. On the other hand, students will tend to tire faster when listening to the higher pitched voice. If your voice is within normal limits - neither too high or too low - work for variety as you speak. Try not to become firmly entrenched in your habitual pitch level.

•Emphasis obviously stems from all forms of vocal variety, and any change in rate, volume, force, or pitch will influence the emphasis. The greater or more sudden the change, the greater the emphasis will be. As a lecturer you will want to use emphasis wisely. Two things should be avoided: **over-emphasis** and **continual emphasis**. Be judicious. Emphasizing a point beyond its real value may cause you to lose credibility with your students.

Sincerity.

A lecturer certainly needs to prepare well and possess strong delivery skills to do an effective job in the classroom. But something more is needed. To be really effective a teacher must be sincere. So long as you obviously try to generate light and not merely heat, students will be amazingly tolerant of weaknesses in both preparation and delivery. But give them a chance to suspect your sincerity, and you lose effectiveness. And once lost, effectiveness is nearly impossible to regain. What is sincerity? Sincerity may be defined as a state of appearing to be without deceit, pretense, or hypocrisy - a state of honesty, truthfulness, and faithfulness.

Sincerity toward students is reflected in your eye contact, enthusiasm, and concern about students, both as individuals and as learners. Sincerity toward the subject is judged by whether or not you seem involved and interested in the subject of topic of the lecture. Lack of sincerity in any of these areas will almost certainly directly hinder learning.

Conclusion

Good communication, then, can improve the learning climate. You can improve your classroom communication and the learning climate by (1) determining the objective, (2) researching the topic, (3) organizing effectively, (4) using appropriate support material, (5) preparing a beginning and ending, and (6) giving thought to how you present the lesson.