We have seen extensive use made of motion pictures and television where other less expensive media should have been used.

It may be of value for faculty members to consider and decide what is best for their audiences. They should not rely on film producers to make those decisions. Film makers are usually willing to produce films which satisfy instructional demands.

As with still cameras, there are inexpensive simplified Super 8 motion picture cameras available to create locally produced motion pictures. If one follows the basic instructions and guidelines presented in booklets such as "Movies With a Purpose" available from Eastman Kodak Company, extremely valuable films can be produced by the instructor, students, or support staff.

Introductory ventures should always employ the "KISS" technique. "Keep It Simple Sam." In other words, do not attempt a Hollywood movie during your exposure to film production.

Motion pictures can contribute to the learning of concepts, skills, and attitudes.

If motion is essential to the procedure, process, or activity presented, the film or television will usually make their most valuable contributions.

A family of technology which has become increasingly more vital to the instructional program is television.

Audio plus still-visual	6. TELEVISION still picture television	Telecommunications and Electronic playback*
Audio plus "moving line" visual	telewriting	
Audio plus motion-visual	video television	*when using recorded source

With the portability of the lightweight "power pac" units which can be utilized "on site" and "in the field", the quality of color obtained, and the ease with which excellent instructional programs can be created by the instructor, television with video tape cassette format is becoming a fairly common instructional presentation medium.

Much of what has been presented during the discussion of motion pictures is applicable to television usage. An additional advantage, or a unique contribution, of the video cassette is its instantaneous playback capability which is not available with motion picture film at the present time.

Haney and Ullmer write, "Educational technology is not a thing to replace or downgrade the teacher; it is a tool to be used by the teacher. It is a potentially powerful tool and so it must be applied with care and sensitivity. To put it simply, educational technology helps teachers do more so students can learn more.

Regardless of the media or methods used it is the responsibility of the instructor to make the modes of instruction satisfy the needs of the class.

The instructor is the orchestrator of the media, the resources, and the total learning environment available.

The performance and its lasting impressions depend on the teacher's ability to select and utilize the media and methods of instruction.

As the instructor carefully selects and utilizes instructional technology he or she will remember that "Accountability" includes both the "U" and "I".

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1. John B. Haney and Eldon J. Ullmer, *Educational Communications and Technology. An Introduction for Teachers*, Second Edition (Dubuque, Iowa: Wm. C. Brown Company Publishers, 1975), p. 23.

Instructional Planning

The Future Ain't What It Use To Be

Jerrold E. Kemp

We all probably agree that the future of a university rests on how well it meets the needs of both its students and the society in which it exists. As society and the needs and interests of students change, so must the programs of a university or department be revised. Many institutions have been remiss and have neither identified changes as they occur nor reacted positively to the ones they perceive. As a result, curricula may be outdated, and course content and instructional methods can be based more on tradition than on a realistic appraisal of students' needs, their learning styles, and use of the best resources.

Dr. Kemp is coordinator of Instructional Development Services, San Jose State University. This presentation was the focus of the fourth general session at the 1975 NACTA Convention.

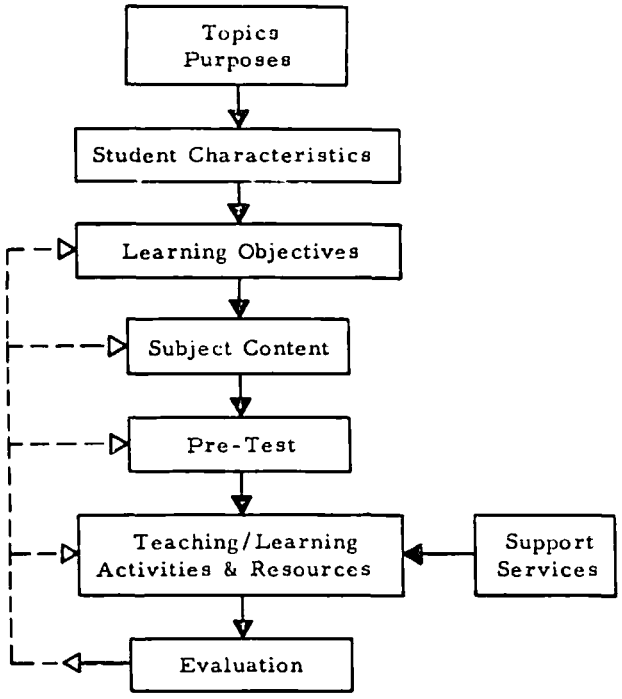
Successful Instruction Is Planned

Although academic innovation is never easy, it is possible. But such change cannot be mandated by an administrator. Nor can it be left to chance. Successful instructional projects are, almost without exception, the result of hard work and careful planning by concerned instructors, operating within an administrative climate that is both supportive and facilitative.

If you accept these premises, then you are ready for what follows. Even if you question these contentions, the new directions we are about to treat may themselves make the importance and value of this approach evident to you.

Figure 1 depicts one plan which can guide instructional planning in a systematic, all-inclusive way in keeping with recent demands and newer emphases. The plan

Figure 1 A Plan for the Systematic Design of Instruction



includes eight elements — not necessarily applied in the set order shown. It must be flexible so an instructor can start at any point and treat the steps in any order comfortable or necessary to him. This flexibility will become more apparent as we consider the steps. Learning objectives, activities with resources, and evaluation comprise the key elements. The other parts extend or support these three. You might presently be limiting yourself to only the three key steps, but let's examine each of the eight elements.

Planning generally starts with the selection of topics and setting goals or purposes to be accomplished. Purposes set the stage for the planning that will take place and give direction to it. Terms like I want my students to *know* or to *understand* about a topic or concept are indications of instructor purposes.

Which of the following are stated as General Purposes?
_____a. Be aware of the evolutionary processes that developed our soils
_____b. To measure the pH of four types of soil
_____c. Irrigation methods
_____d. To acquaint the student with crops and varieties grown in California

Do you agree that **a** and **d** are general purpose statements? They indicate what you, the instructor, wants to accomplish with students. Purposes expressed for students will be expanded as objectives. Answer **b** is a direct student objective, whereas **c** is a topic heading. So, we say that instructional planning generally starts with topics and general purposes.

As instructional programs shift toward more individualized learning activities for students in preference to conventional lecture or instructor-directed lab and field teaching, we need to know more about our students — their capabilities and needs, interests, and so forth. What are some specific facts you might want to gather data on concerning your own students as you start to plan a new program?

A variety of student characteristics may be important for you to know. They may include — student grade point average, reading levels, general academic background, courses completed in his major field, vocational interests, study habits, and so forth. They all can give you a better understanding of the nature of your students and help you in planning your course, the kinds of activities you select for learning experiences, and being able to assign students at appropriate places to start a new program.

Of all phases of instructional planning, the subject matter is the one we are most familiar with. After selecting topics in a course, a consideration of subject content frequently follows. Here we select and organize the details, facts, concepts, and principles that relate to the general purposes for the topic. The following might be part of the outline of content for a unit on weed control. These facts become the basis for the objectives that will be developed.

Controlling weeds
A. Mechanical or physical
1. Hand weeding or hoeing
2. Mechanical cultivation
3. Burning
B. Cultural practices
1. Crop rotation
2. Mowing pastures
3. Delayed planting
etc...
C. Biological control
1. Insects with specific host
2. Parasites
D. Chemical control
1. Contact herbicides
2. Systematic herbicides
etc...

Writing learning objectives is one of the key elements of any new approach to instructional planning. It is only after stating learning objectives that the instructor knows what students specifically should be responsible to know, what learning experiences can be selected, and what suitable means to evaluate the outcomes can be decided upon. Also, we now make available to students these statements of objectives so they are aware of what they must learn. Some people tell us that objectives should be carefully stated early in planning. Most of us cannot do this satisfactorily as a first step. It is often easier to start by listing subject content and then to develop objectives from the content.

Which of the following would you accept for properly stated learning objectives?
_____a. To identify livestock parasites
_____b. To classify five samples of sheep according to wool types with 80% accuracy

_____c. To demonstrate the use of a selective contact herbicide on sample plot containing both broad leaf and narrow leaf weeds

_____d. To understand the basic elements of the physical, chemical and organic nature of soils

_____e. To plan a simple balanced ration for livestock using the table of nutrients on page 252 in the text

Let's consider what should be included in an objective. I like to call it a learning objective because it is stated as a learning outcome for students. There are two essential parts of an objective. First, an action verb which indicates the kind of specific activity that is required and can be measured. Four of the statements above you have measurable action verbs. Identify, classify, demonstrate, and plan are words that denote observable behavior. To understand, as in **d**, leads to a general purpose statement rather than to an objective. We said the action verb is one essential part of an objective. The other part is reference to the content being treated. Each of these statements has a content reference. In **a**, it is livestock parasites; in **b**, sheep according to wool type; and so on. To make a learning objective as useful as possible, we often include two other parts. One is any conditions that should be considered, like the reference to the sample plot in **c**, or the inclusion of the table of nutrients in **e**. These additions tell the student some of the limitations or factors he should be prepared to consider or use. Also, we may include a measurement standard or criterion. Objective **b** mentions 5 samples with 80% accuracy. The student must get 4 right answers to be correct. Statement **A**, I feel, should include some conditions or standards. It is too broad. Are we talking about external or internal parasites, how many should the student have to identify, and so on. These points, and maybe others, should be included so the students will know specifically what is expected: specificity is one of the main features of learning objectives.

In summary, **b**, **c**, and **e** are properly stated objectives. **A** is weak and **d** is a broad general purpose. I've gone into some detail on objectives because, as I mentioned, they are a key element of instructional planning. Their development requires a high degree of intellectual activity, which isn't always easy. It takes time and many dead-ends to be able to write good objectives.

Let's also recognize that not everything you treat in your courses can become measurable learning objectives. Attitudes and values, what we call the affective domain of learning, are often difficult or even impossible to spell out in measurable terms.

The next element is the pre-test. If you are concerned about how well prepared students may be for your course or specific topics in the course, then use a pre-test. It can serve two purposes. First, for you to find out if the student has suitable background preparation for the course or to study the topic. If not, remedial work may be necessary. A student is going to have real difficulty if he can't add or subtract in an agriculture financing unit. But, this is probably not true of your students. And, second, to determine if a student is already competent in some aspects of the course or topic so he might, as in an individualized learning program, skip some parts and move ahead more rapidly.

Which teaching/learning pattern would be most appropriate for each need?

_____a. To motivate students with a desire to study a new topic

_____b. To recognize individual differences among students

_____c. To provide multiple paths or options of student study

_____d. To present special applications of a topic by a noted authority

_____e. To present project reports by student committees

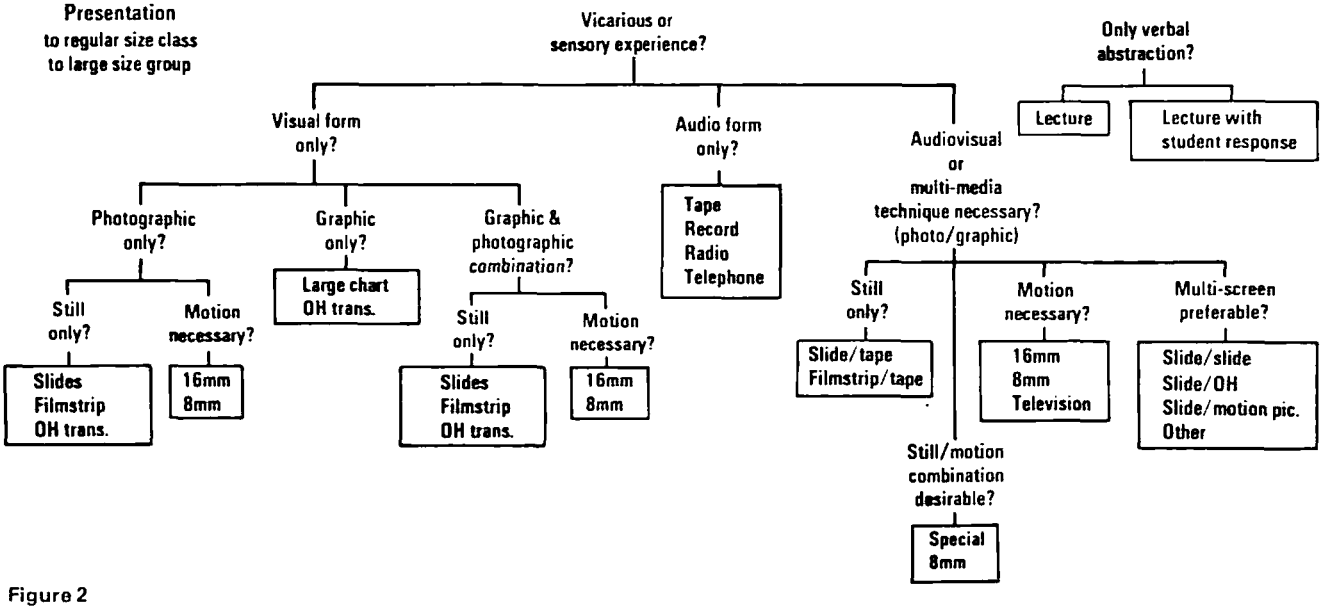


Figure 2

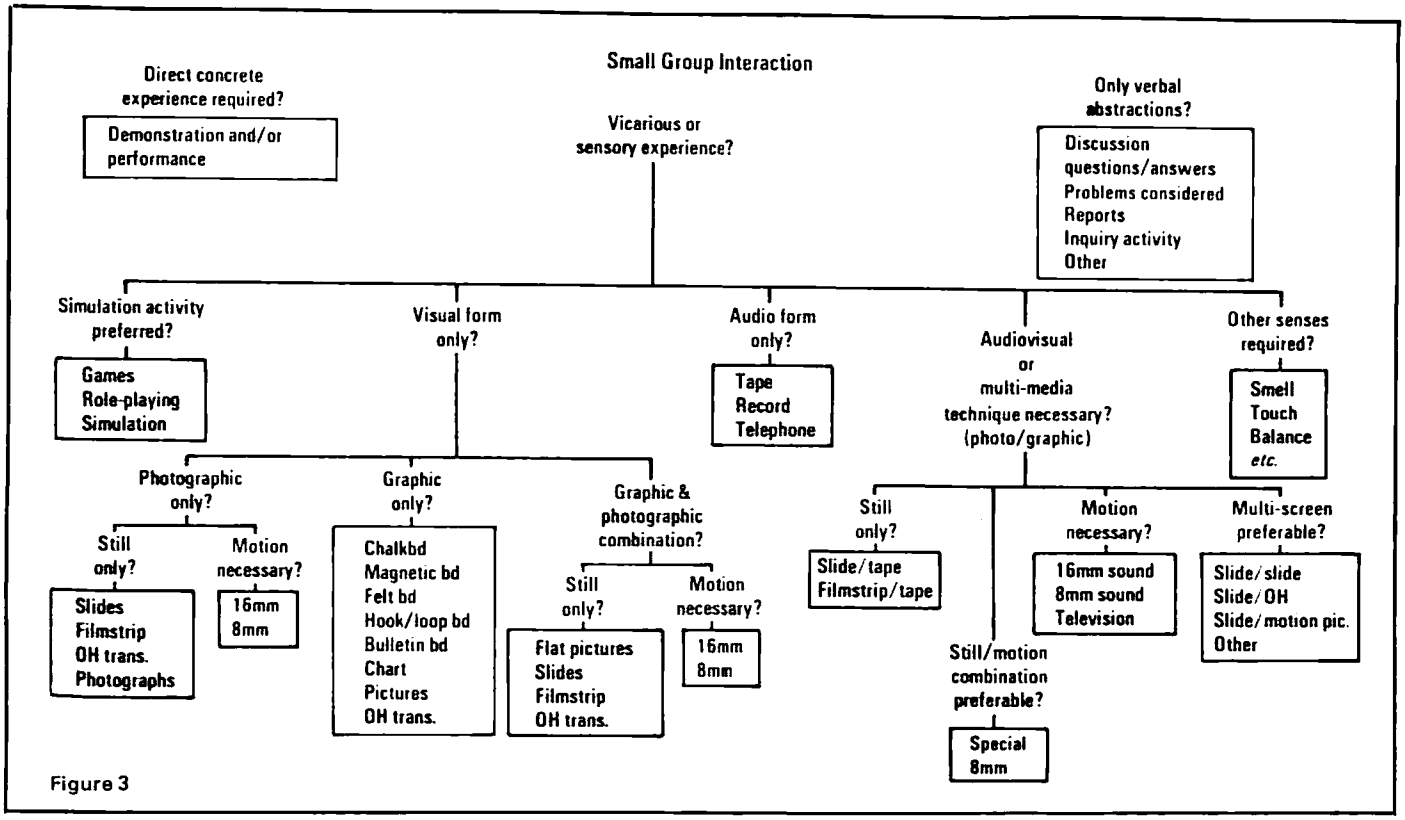


Figure 3

Another key phase of instructional planning is teaching/learning activities and resources. The three teaching/learning patterns are group presentation, individualized learning, and small group interaction. Decisions must be made as to which objectives can best be accomplished by which teaching/learning pattern and with which resources. Try your hand at deciding on the teaching/learning pattern in the following cases:

A and **d** are the kinds of things that can best and most efficiently be done through group presentation in a course. **B** and **c** are more suitable for individualized learning or student independent study. **E** is an interaction activity. Your answers may be somewhat different and also correct, but these are some of the kinds of activities that can best be served by the different teaching/learning patterns.

When we come to instructional resources, and particularly the audiovisual materials, with which I am most familiar, there are some generalizations that can guide you in making choices and decisions. They have been included in the following diagrams for each of the teaching/learning patterns. The questions asked are based on the requirements of the objectives being served. First, does the objective need only verbal explanation, direct activity, or is somekind of sensory experience more appropriate. Make a decision; then, if media are indicated, move to the next level. Find the "yes" answer here and eventually arrive at the appropriate media group. Learning is the same for any of the media in the box. The final selection, say among still picture materials like photographs, slides, or filmstrips, is based on what is available to you, costs, preference, and other important factors. These charts can be helpful to you in making your own media decisions.

Closely associated with the methods and materials for instruction should be what I call support services. These are the logistical and other matters relating to the teaching and learning that may make for success or failure of a new program. My list includes budgetary support for the project; facilities needed, especially for independent study activities; possibly instructional equipment for the materials that will be used; personnel necessary, including instructors, technicians, clerks, student assistants; and so forth. Too often one or more of these support matters are ignored or forgotten about until the course or new program is almost ready for use or even until it is too late. Each of these areas bears on the potential success of any new instructional program being systematically developed.

The last element of our instructional design plan is evaluation. Evaluation has two meanings for us. First, there are the tests, student performances, and other methods employed for measuring learning in terms of the objectives. The emphasis here is the close tie-in between exam questions and the objectives for which students are responsible. With the shift toward student learning as the recognized outcome of instruction, we are becoming more concerned with trying to provide for mastery of learning by students. This is different from the conventional test scoring or grading on a normal curve with a set percentage of students destined to fail. We try now to give students a number of opportunities to accomplish objectives and thus satisfactorily achieve learning.

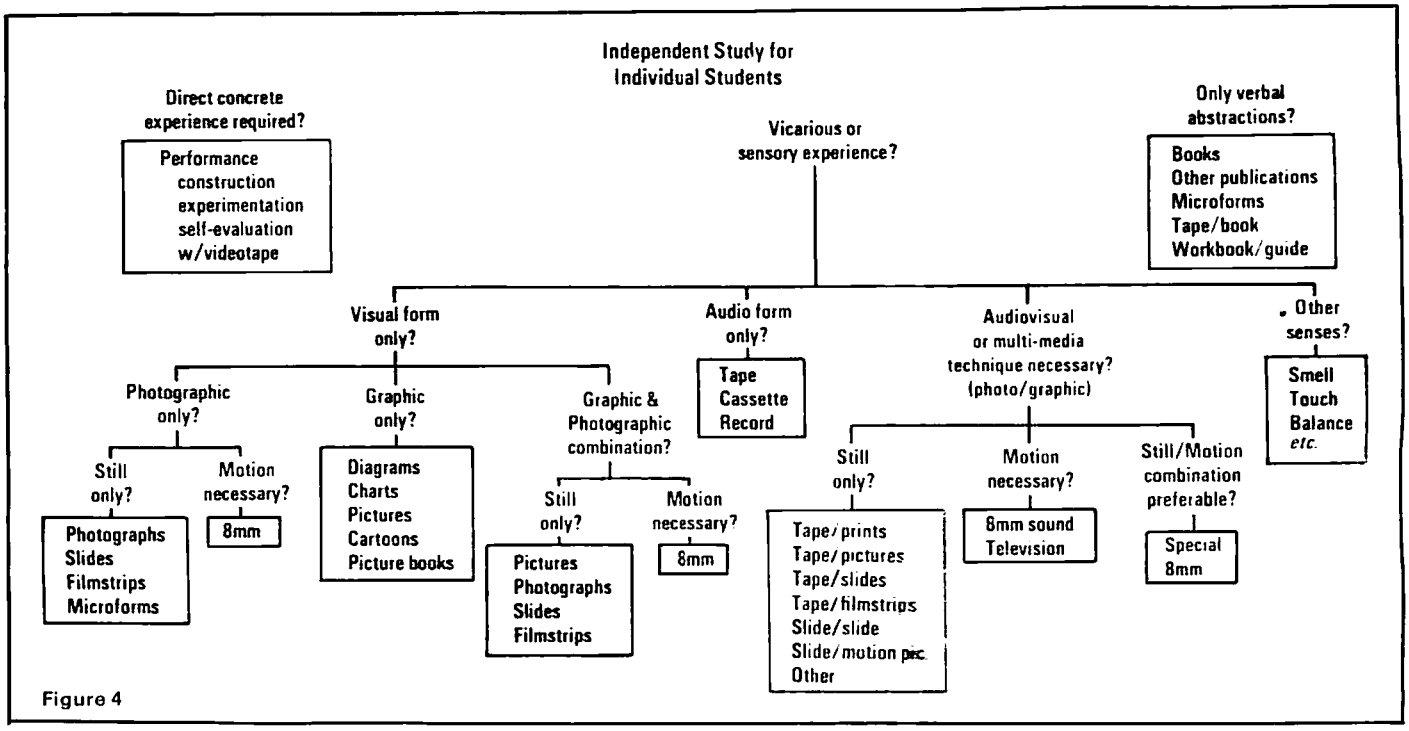


Figure 4

The second purpose for evaluation is to determine the effectiveness of the program itself. How many objectives were satisfactorily accomplished by the students? This relates to the accountability of a program. If the results are short of anticipation, then revisions in the program are necessary. That's the purpose for the dotted lines in the diagram depicting the plan. Evaluation can also mean gathering data on student reactions and opinions about the new program, as well as those of instructors and other staff participants. Evaluation is the third key element in instructional planning, and I hope you have a broader understanding of its many intents.

While this approach emphasizes attention to the eight elements, it recognizes that each of us might approach planning in different ways. So, you might start anywhere in the plan, gradually developing those steps that are useful and important to you. Other approaches to systematic instructional planning also have been developed and will be found in the bibliography.

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LETTERS TO THE EDITOR

Dr. Jack C. Everly, Editor
NACTA Journal
608 W. Vermont
Urbana, Ill. 61801

Re: "Grade Inflation" — NACTA XIX - June 1975, p. 49

I sure appreciated Eldridges letter. At the meeting of the Western Director's of Resident Instruction at Davis last March, Bill Thomas of Colorado State University dealt with this subject of grade inflation. Several of this group were alarmed. My reaction was very similar to Eldridges and I am glad to see that I have some company! By clearly establishing our objectives, both for the benefit of the instructor and the instructed, there should be fewer failures and near failures. There is a philosophy that failures indicate that the professor failed rather than the student. I don't believe this is always correct, but it has some merit.

Secondly, we are accepting devices whereby withdrawals, etc. eliminate from the record a number of those who were earlier marked as "failures". Another very important factor is the use of mini courses with a whole new grading concept. Some of us object to the idea that one should proceed with the learning of a mini course until one gets 100% in it; nevertheless the whole thing is designed in such a way that time is not a factor and a reasonable grade is expected. This also tends to up the grades.

I personally feel it would be bad to lose all distinction from grades. On the other hand there has been a tyranny of grades over the years that many of us have resented. When I went through school, I figured that I must get 90 or above regardless of whether what I put down on the paper was right in fact, but right in the eyes of the instructor. Along came my son and he thought otherwise. Grades were still important; but not everything.

Sincerely yours,

B. R. Bertramson,
Director of Resident Instruction
College of Agriculture
Washington State University