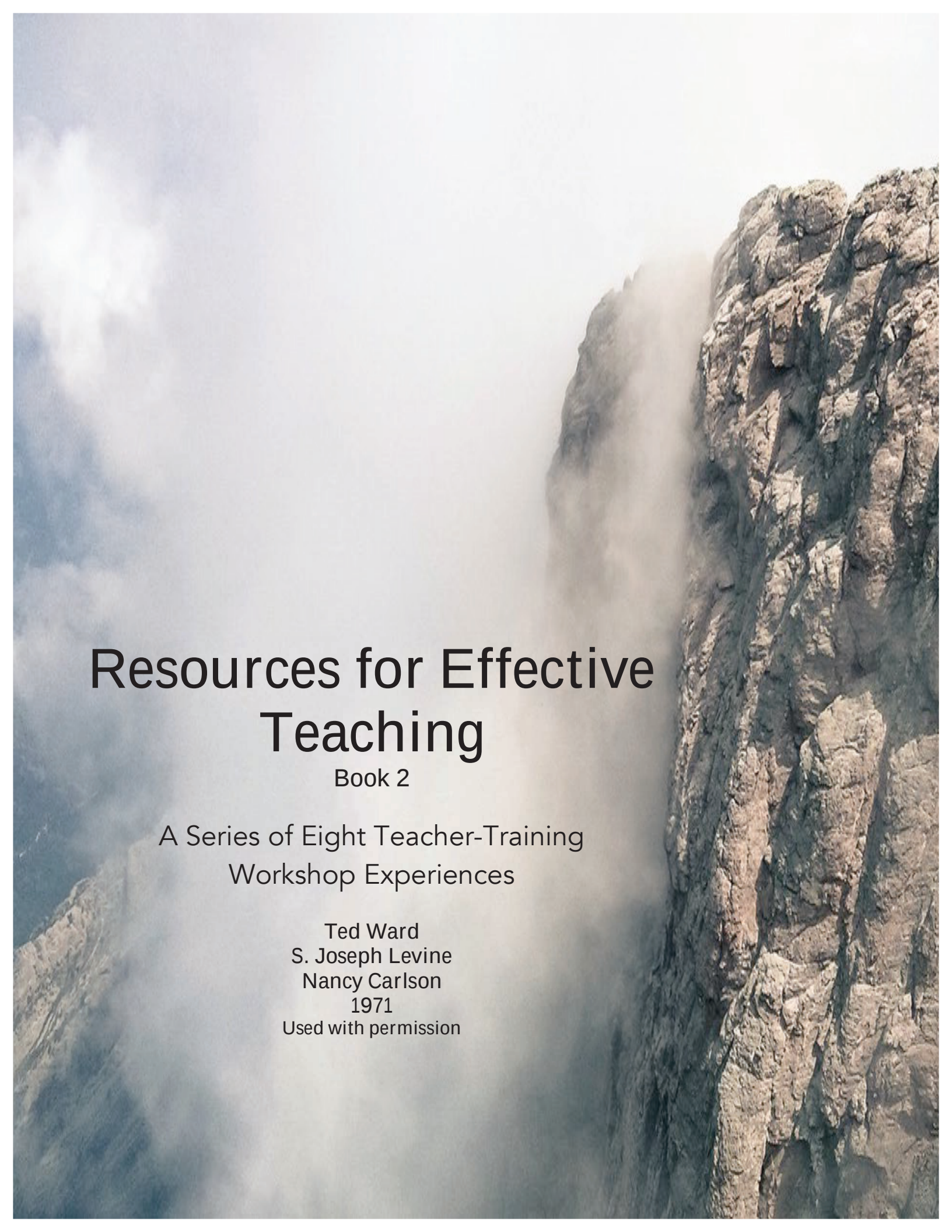




Resources for Effective Teaching

Book 2

A Series of Eight Teacher-Training
Workshop Experiences

Ted Ward
S. Joseph Levine
Nancy Carlson
1971
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During the late 1960s/early 1970s Ted Ward was the Associate Director of a federally funded project at Michigan State University that dealt with providing in-service education to Special Education teachers in Michigan, Indiana and Ohio. A team of three: Ted, Joe Levine, and Nancy Carlson worked together on the development of in-service education materials that were self-contained and easily replicated in teacher education workshops throughout the region. Though designed primarily for special education teachers, the workshop training materials, for the most part, were applicable to a variety of different contexts. Three sets of materials were created through this project: Experience Teaches! (1970), Resources for Effective Teaching (1971), and Workshop Training Kits (1973). The following pages are the set of materials from 1971 – Resources for Effective Teaching.

The work presented herein was performed pursuant to a Grant from the U.S. Office of Education, Department of Health, Education and Welfare. However, the opinions expressed herein do not necessarily reflect the position or policy of the U.S. Office of Education, and no official endorsement by the U.S. Office of Education should be inferred.

Introduction

In June of 1971, forty teachers and administrators of special education met in Lansing to test the preliminary versions of a special series of new in-service teacher training workshop materials. Under support from the U.S. Office of Education, Bureau of Education for the Handicapped, these people were selected and assembled in a special study institute. The best of these materials are now being disseminated by the Michigan Department of Education so that groups of teachers across the state might benefit.

Participants at the institute received training in effective procedures for training groups of teachers. Included in the training was a set of seven self-contained kits to be used by the participants for local training sessions. The focus for the kits was on the use of experience as the base for the effective teaching.

The following pages are a compilation of the print materials for all seven of the kits. In some of the kits, however, artifacts are needed to run the workshop experience. Specific artifacts are noted within the instructions for conducting each kit. In those instances where prerecorded audio is needed, a script is provided.

The authors of this series of kits are Ted Ward and S. Joseph Levine. Both are members of the staff of the Regional Instructional Materials Center for Special Education and faculty members at Michigan State University. They have been responsible for the MSU SEIMC's development of materials for in-service training of teachers of handicapped children and have worked together to provide many new instructional materials for teachers and for children. The "Experience Teaches!" series is a product of their efforts to disseminate in-service education materials throughout the region served by the Regional IMC at East Lansing.

A dramatic landscape photograph of a steep, rocky mountain peak. The rock face is rugged and textured, with various shades of brown and grey. A soft, ethereal light emanates from behind the peak, creating a misty or smoky atmosphere. A faint rainbow is visible in the lower part of the mist. The sky is a pale, hazy blue.

Workshop Kit #1
Designing an Instructional Game
S. Joseph Levine

Workshop Kit #1

Designing an Instructional Game

S. Joseph Levine

Objective

“Designing an Instructional Game”¹ provides a vehicle for interaction and cooperation in the design of an instructional game. The structure of the activity forces the participants to carefully think through the design of their game in much the same manner as you should think through the design of *any* instruction. At the conclusion of the activity the participants should have achieved the following:

- An understanding of basic design considerations for building instructional games.
- First hand knowledge of creatively dealing with a common object for new purposes.
- Insights into the evaluation of instruction.
- New ideas to try out in their own classroom situation.

Materials Needed

Provided in kit:

Visual Page 1

You will need:

Playing cards (2 decks)

Extra playing cards (1 per group if more than 2 groups)

Media projector

Projection screen

Copies of instructions (Duplicator Pages 1-3)

Pencils

Procedure

1. Divide the group into teams of four to six participants
2. Seat each team around a worktable.
3. Provide each team with: a) Directions, b) Game Instruction Sheet, c) Game Feedback Sheet.
4. Provide each team with a deck of ordinary playing cards.
5. Instruct each team to read the Directions, paying careful attention to the time schedule at the bottom.
6. Begin the activity (keep track of the time schedule.)

¹ This training kit was developed for a Special Study Institute held in June of 1971. The Institute was

7. Have teams switch completed games and play the game developed by the other team.
8. Complete the feedback sheet and return it along with the game to the team that designed it.
9. Discussion (see discussion guide).

Discussion Guide

The following questions are meant as suggestions for conducting a discussion at the end of this activity. They are not designed as “hard-and-fast” questions, but rather general types of questions that might be asked of the group. These questions do *not* have to be asked in any specific order. Obviously, other questions will develop during the discussion. A visual is provided for question #5.

1. It's interesting to note how we all identify with our own game!
When we spend time together as a team working on a common task, our involvement influences our views of others' developments. We tend to think our game is the best! How can we be involved in what we are doing and at the same time be open to interaction and stimulation from what others are doing?
2. To what extent did you find that your “Rules of Play” were clear to your own group, yet not clear to the group that had to play your game?
In general, teaching does not call for written instructions but rather an internalized or second-nature form of pacing our instruction. By forcing us to write out the instructions clearly, though, we have an opportunity to examine our ability to clearly state and specify the sequence of instruction. It often helps to look at the job of specifying instructions and instruction from both the view of teacher *and* learner. If we had been more concerned with our learner in our task of designing an instructional game we might have been clearer in specifying the instructions.
3. How many groups designed a game using the playing cards that was *not* like a “typical” card game?
We are often limited by our past experience when it comes to designing new materials. In the case of playing cards, we all *know* what the game should look like. We *know* that card games call for players to have some cards in their hand, that there be a “supply” deck of cards and a discard deck. There was no specification in our instructions that said we must be limited to such a game. Our task might have been easier if we had been using blank pieces of paper without the suggestion of a playing card. Teachers and learners alike come into a learning situation with pre-determined ideas. Sometimes it is very hard to shake ourselves from these prior conceptions.
4. What were the dynamics that occurred within your own group?
How easy was it to decide on a common direction for your game? In what ways did some members of your group exert themselves more than other members? To what extent were some members of the group willing to let others do the work? What do you now know about other members of your group, through the interaction of the game that you would not have otherwise known?
5. During this activity, we have followed a basic model for the design of instruction (see Visual Page 1).
There are five separate stages in the design of instruction:
 - 1) Identify learners
 - 2) Specify instructional objectives
 - 3) Design instruction

- 4) Use instruction
- 5) Evaluate instruction

If we examine our activity we can see how each of these five stages was dealt with. *First*, the learners were already identified. We had to deal with educable mentally disadvantaged children. On our Game Instruction Sheet we could further specify exactly who this learner would be. *Second*, the objective of our instruction, a number concept, was also specified. However we had opportunity to further specify exactly what we wanted the game to teach. *Third*, we designed our game. *Fourth*, we tried our game by trading it with another group. *Fifth*, we received an evaluation, in the form of feedback, from the group that tried our game. Once we understand this basic model for the design of instruction we will be able to implement it with all aspects of our teaching.

6. What did your game really teach?

You might gain insights into what your game was really teaching by examining the behavior of your group as it played the game. Chances are if it excited your own group, it did something more than teach a basic number concept. When we design instruction we sometimes cloud the real issue (the learners) by inserting our own needs in place of their needs. We must truly understand learners and their reactions to what we are attempting to teach.

7. What have we learned about experience-based learning from this activity?

Experience-based learning begins with an experience and then bases later discussion *on* the experience. All of the learners, in an experience-based learning situation, have a common base from which they can operate. In this activity, the common base was provided during the actual game design activity. This activity, then, has set the stage for discussion and consequently the transfer of the message to our own teaching setting.

Use the space below to write other questions that you feel are important for a discussion session.

Designing an Instructional Game

Directions

Designing an instructional game is a timed activity. It is important that you stay within the allotted times for each phase of the activity.

You and the other members of your group are an instructional design team. Your task is to design a new instructional game. Your game will be used with educable mentally disadvantaged children to teach a number concept. Your primary artifact for this game will be a deck of ordinary playing cards. You may also incorporate in your game anything else that you happen to have with you.

At the conclusion of this task another design team will play your game. Your team will not be allowed to provide any verbal instructions to the other team. So . . . you will have to write out specific instructions that will relate the playing procedure to the other team.

The following specifications *must* be included in your game:

- a) You must use the playing cards that are provided. (You don't have to use all 54.)
- b) You must write out a clear set of instructions with no more than *5 steps*.
- c) Your game must teach a number concept(s).
- d) Your game must be playable with at least 2 persons.
- e) Your game must be playable with educable mentally disadvantaged children.

Time Schedule

20 Minutes—Decide on the *design* of your game. You may select any number concept(s) to focus on. You can presume any degree of prior learning on the part of the learner.

10 Minutes—Write a *description* of your game on the Game Instruction Sheet. Be explicit yet concise. You will not be allowed to answer questions regarding your game when it is played by another team. No more than 5 steps are allowed in your instructions.

20 Minutes—Switch Game Instruction Sheet with another design team. Play the other team's game. Fill out the Game Instruction Sheet.

10 Minutes—Return the Game Instruction Sheet that your team has filled out. Discuss within your group the Game Instruction Sheet that your team has received.

Discussion

Designing An Instructional Game Game Instruction Sheet

Name of game: _____

Equipment needed:

Rules for play:

a)

b)

c)

d)

e)

This game is designed to teach:

This game is designed to be used with the following type of learner:

Developed by:

Date:

**Designing an Instructional Game
Game Feedback Sheet**

Name of game: _____

To what extent does the game make effective use of the cards?

In what ways does the game provide feedback to the players? (Do *they* know if they're right?)

How clear are the "Rules for Play"?

What should be added to the "Rules for Play" to make them clearer?

Does the game have a unique aspect? If so, what is it?

What changes would you suggest?

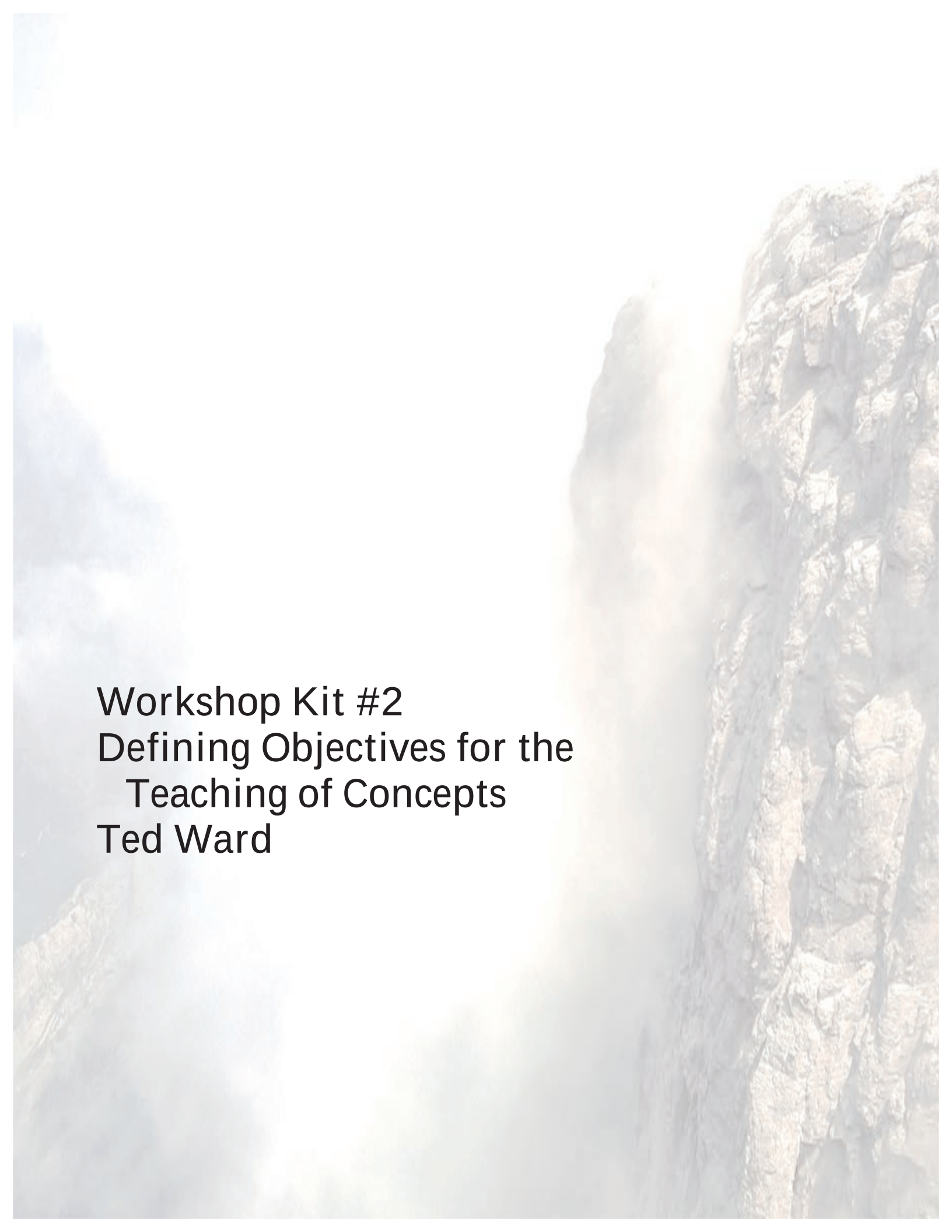
1. Identify Learners

2. Specify Instructional Objectives

3. Design Instruction

4. Use Instruction

5. Evaluate Instruction

A dramatic landscape photograph of a mountain peak. The sky is filled with soft, white clouds, and a faint rainbow is visible in the center. The mountain's rocky, brownish-grey surface is prominent on the right side of the frame. The overall mood is serene and majestic.

Workshop Kit #2

Defining Objectives for the Teaching of Concepts

Ted Ward

Workshop Kit #2

Defining Objectives for the Teaching of Concepts

Ted Ward

Defining Objectives for the Teaching of Concepts² in behavioral terms is a skill that can contribute to effective teaching. Based upon a problem-solving application of two concepts, the exercise following has been designed to give teachers experience in defining objectives that relate to the learning of concepts. The more common exercises for teaching the writing of objectives are typically concerned more with lower levels of learning, such as cognitive recall. In order to provide this exercise at the conceptual level it is necessary to be more “complicated” and thorough in the presentation of the problems. Thus, it is important to study the introductory paragraphs carefully.

Objectives

- To specify in behavioral terms an instructional objective concerned with the learning of a concept.
- To describe the interrelationships among the plan for teaching, the objectives, the entry behaviors, and the evaluative criterion.

Procedure

1. Divide the group into teams of two people each.
2. Hand out one copy of Duplicator Pages 1-11 to each team. Five of these pages are text with problems (Duplicator Pages 1-5). Six are sets of illustration cards (Duplicator Pages 6-11).
3. Ask each pair of participants (called hereafter a “team”) to cut up its set of 22 different illustration cards. (These are lettered in the upper left, “a” through “v”.) This can be done in advance if you wish, and each set can be packaged in a separate envelope.
4. Read aloud the introductory paragraph and objectives above.
5. Begin activity, each team working independently and at its own rate, following steps indicated on the pages of text.

Time required: Approximately two hours, including discussion.

Visuals Page 1 should be used to structure the discussion.

² This training kit was developed for a Special Study Institute held in June of 1971. The Institute was conducted under the auspices of the Michigan Department of Education, Special Education Division under support from the U.S. Office of Education, Bureau of Education for the Handicapped. The opinions expressed herein do not necessarily reflect the position or policies of the Michigan Department of Education or the U.S. Office of Education and no official endorsement should be inferred

Defining Objectives for the Teaching of Concepts Ted Ward

The Concepts to be Taught

Certain basic concepts of order, progression, and quantitative worth are basic to human thought. By definition, these are basic to being “educated.” All educable children can learn the concepts of *sequence* and *equivalence*. Many puzzles, games, and numerical activities are based upon the concepts of sequence and equivalence.

The learning tasks involved in dealing with various number bases include the concept of *equivalence* and the concept of *sequence*.

Equivalence can be described as the relationship between two sets in which one set is said to be “equivalent” or *worth the same* as the other because of an inherent or an arbitrary condition. In number-base relationships the equivalence is arbitrary, even though we may have come to think that the relationship of “ten is equivalent to one” is inherent!

In the arithmetic of the decimal system, ten *units* is said to be equivalent to one *ten*. Thus, in base ten (the decimal system), the numeral *nine* in a given column of addition becomes a zero when *one* is added, since the combined ten units is *equivalent* to one set of tens. We say we “carry” the one (representing the equivalence) to the next column (left hand).

$$\begin{array}{r} 9 \\ +1 \\ \hline 10 \end{array}$$

In “base two” (the binary system) one plus one becomes zero, preceded by a one in the column to the left. In “base two” the largest possible numeral is *one*, because two ones are equivalent to one in the column to the left.

$$\begin{array}{r} 1 \\ +1 \\ \hline 10 \end{array}$$

In the more familiar *base ten*, the largest allowable numeral is *nine*. (Ten is not a numeral!)

Thus, *equivalence* is the concept that two things or two ways of expressing a quantity *are* (or represent) the same.

For example: one *ten* is equivalent to ten *ones*.

The concept of *sequence* is more easily defined. Sequence is an orderly progression according to some design or pattern. Following is a sequence:

1, 2, 3, 4

The next number in this sequence would be 5.

In the following sequence what would be the number at the blank?

2, 4, 6, __, 10

The concept of sequence allows you to determine 8 to be the missing number.

If you have the concept of sequence you can seek out the rule that underlies a sequence and, having found it, you can supply missing numbers or items in the sequence. You can also extend the list in proper sequence.

Fill in the blanks following: 1, 3, 5, __, 9, 11, __, __, __.

You easily recognized this as a “sequence of odd numbers beginning with *One*.”

Putting the concept of sequence together with the concept of equivalence, you can solve problems such as the two examples following:

(a) ☐ ☐
☐ ☐ ☐
☐ ☐ ☐ ☐
? _____ ? (Fill in the blanks between the question marks)

(b) ☐
☐ ☐
*
* ☐
* ☐ ☐
? _____ ?

In the first problem (a), the *equivalence* is involved, in that the spots are recognizable as arithmetic units, and are then searchable for sequence. The solution is, of course, five spots, representing one more step in the progression. (If you are really “with it” perhaps you used X or Y or some other symbol as a response, to indicate an equivalent of five spots.

In the second problem (b) the *sequence* is again progressive, adding the value of one unit each line. *Equivalence* is involved since the third line shows one star rather than three spots, suggesting an equivalence that can be verified by following through the balance of the sequence. The final line would be two stars.

The Exercise

After you have studied the paragraphs above, work with your partner to sort through the 22 cards and respond to the items following:

1. Which cards represent *only* the concept of *sequence*?

2. Which cards represent *only* the concept of *equivalence*?

3. Which card (or cards) represents the most comprehensive test of the application of both concepts together? _____

4. Do you think it would be appropriate to teach both concepts at the same time?

Yes _____

No _____

If yes, how would you do it? _____

If no, which concept would be more appropriate to teach first?

_____ equivalence

_____ sequence

Why? _____

5. Exactly what should a student be able to do to show that he or she has learned to apply the concept of *sequence*?

6. Exactly what should a student be able to do to show that she or he has learned to apply the concept of *equivalence*?

7. Organize a set of three to six of the cards that would provide good whiteboard illustrations for a teaching activity (lesson) concerned with *equivalence*. (To use this set of cards to teach equivalence, students must already have the concept of sequence. Do you need to go back to revise your responses to item 4?)

- (a) List, in order, the cards you have selected:

- (b) What must the learner already know (and know how to do) in order to learn the concept in the lesson that you have planned? (This is called the “required entry behavior.”)

- (c) What response can you ask students to make to the whiteboard illustrations?

- (d) Select another card for use as a *test* (or design an original test on a blank card). The test must be able to determine whether or not the pupil is able to apply the concept. Be very sure it tests the *concept* that your lesson teaches!

- (e) What does this test item ask the pupil to do?

- (f) *Specify the instructional objective* that best clarifies the teaching activity. (Suggestion: statement of an instructional objective can begin with a statement of the nature of the task, for example, “When given a series of symbols in which each symbol indicates one more unit than the line it follows that . . .” The task can be followed with a description of the consequent activity which will show that the pupil has learned the concept; “. . . the pupil will identify the relationship indicated by the sequence and will draw a figure representing the next step in the sequence.”)

8. When you have finished all the steps above (in writing!) . . .

(a) Exchange papers with another pair of participants and check each other's work against the following criteria:

- 1) Objective as stated is concerned with *equivalence*
- 2) Crucial entry behaviors are all cited
- 3) Writing is clear enough for communication among teachers
- 4) Cards indicating the illustrations for the lesson are all well chosen
- 5) Cards are in the most understandable sequence

NO	YES	
	Fair	Good

(b) Suggest ideas for implementing the other pair's planned lesson (7a, b, c):

9. Join forces with the other pair and discuss Item 8.

10. Re-state the objectives for each of the two lessons, if possible, improving the precision of the statements. Remember the three elements of the description suggested by Robert Mager:

- (a) Under what conditions will the specified student learning be elicited? (What will be the exact nature of the problem, task or stimulus?)
- (b) Exactly what will the learner *do* when he or she is demonstrating this learning? (When confronted with the problem, task, or stimulus the learner will do what (e.g., write, say, identify, list, and so on)?)
- (c) How often, and at what level of accuracy, must this response be made by the student in order to satisfy you that it has been learned? (Would you settle for four out of five times?)

Discussion by the total group will follow.

a.

$$* * \square = 7$$

$$* = ?$$

c.

$$* = 10$$

$$\square = 1$$

$$* \square = 11$$

$$* * \square = ?$$

b.

$$\square$$

$$\square \square$$

$$\square \square \square$$

$$*$$

$$* \square$$

$$* \square \square$$

$$* \square \square \square$$

$$* *$$

$$* = ?$$

d.

$$\square$$

$$*$$

$$\square \square \square$$

$$* *$$

$$\square \square \square \square \square$$

$$* = ?$$

e.

☐ ☐

☐ ☐ ☐ ☐

_____?

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

f.

☐

☐ ☐

☐ ☐ ☐

? _____?

g.

☐

☐ ☐

*

* ☐

* ☐ ☐

* *

* = ?

h.

☐

*

* ☐

* *

* = ?

i.

☐

☐ ☐

*

☐ ☐ ☐ ☐

☐ ☐ ☐ ☐ ☐

? _____ ?

j.

☐

☐ ☐

☐ ☐ ☐

*

? _____ ?

k.

*

* *

* * *

☐

☐ *

☐ * *

? _____ ?

l.

* ☐ = 3

* = ?

m.



? _____ ?



n.



? _____ ?

o.

*

* □

* *

* * □

* * *

* = ?

p.

* □

* □ □

* □ □ □

* *

* = ?

q. * * * * * * * * = ?	r. * * * * * * * = ?
s. * * * * * * * * * * = ?	t. * ? _____ ? * * * * * * = ?

u.

☐

☐ ☐

☐ ☐ ☐

☐ ☐ ☐ ☐

☐ ☐ ☐ ☐ ☐

?

☐ ☐ ☐ ☐ ☐ ☐

☐ ☐ ☐ ☐ ☐ ☐ ☐

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

*

* = ?

v.

* = ☐ ☐

* * = ☐ ☐ ☐ ☐

* * * = _____

Suggested discussion problems:

1. Specifying objectives for concepts is more valuable than specifying objectives for every little bit of cognitive learning. Why?
2. Why is a concept so hard to express in manageable terms?
3. The designers of this exercise assume that you have to be saturated with the ideas and operations involved in a concept before you can specify it as an instructional objective. In what ways did this opinion show through in the exercises?
4. Cite other concepts that must be taught, and suggest a way to express each of them as an instructional objective.

A dramatic landscape photograph of a rocky mountain peak. The rock face is rugged and textured, with vertical fissures and ledges. A soft, ethereal light emanates from behind the peak, creating a misty or smoky atmosphere. A faint rainbow is visible in the mist, arching across the scene. The sky is a pale, hazy blue.

Workshop Kit #3
Designing Criterion Measures
S. Joseph Levine

Workshop Kit #3

Designing Criterion Measures

S. Joseph Levine

Instructions to Coordinator:

“Designing Criterion Measures”³ is a self-paced activity. Participants are divided in groups of 3-7 members. Each group is provided an audio recorder, recording tape, and five envelopes. Groups proceed through the activity at their own rate. Your role will be:

- a) Organizing materials prior to workshop
- b) Assigning participants to groups
- c) Starting activity
- d) Ending activity
- e) Leading discussion

Materials Needed:

- a) Audio Recorders (one for each group)
- b) Audio tapes (one for each group)
- c) Envelopes (five for each group)
- d) Worksheets—Duplicator Pages 1-5
- e) Tables (one for each group)

Label each envelope with a number (#1, #2, #3, #4, and #5). Make copies of the worksheets so that there is one for each envelope. (Worksheets are labeled at the top). Insert one worksheet in each envelope.

Set up tables with all materials, (envelopes, tape, recorder) prior to arrival of participants.

Discussion questions are included in this manual.

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Discussion Questions:

The following questions are included to assist in stimulating discussion following the activity. These questions are representative of the general type that can be used. They are not meant to be inclusive of all possible questions.

- 1) In what ways did you find that your group tried to specify the criterion measure in greater detail than was needed?
The statement of criterion measure should be succinct and to the point. It should be a realistic process of measurement that can actually be carried out by the teacher. If the measurement process is too complex it won't be carried out!
- 2) What do you feel is the value of criterion measurement?
 - Systematic process
 - Allows us to assess progress of the learner
 - Provides visible means of examining our own instruction
 - Gives us a starting point for modifying our instruction
- 3) Is it necessary to specify the criterion measure in writing?
No. The important thing is that we have a definite procedure for establishing whether the student has achieved our instructional objective. It can be informal or very structured.
- 4) How did your group function?
 - Did the activity stimulate discussion?
 - Did the group members contribute?
 - Was this form of activity effective?
 - What problems did the group have?
- 5) In what ways can this form of activity (recording and work sheets) be used in your own instructional setting?

Audio Recording Script

Designing Criterion Measures

Narrator: The criterion measure provides us a means of knowing when an objective has been met. This activity is concerned with designing a criterion measure that can be utilized in conjunction with an instructional objective. First, though, let's see what a criterion measure is.

Joe: "Hey, Rob, see the can over there?"

Roberta: "Yeah, what about it?"

Joe: "I bet you can't hit it with this rock."

Roberta: "I bet I can. Give me the rock."

Joe: "Okay, go ahead and try."

Narrator: Before Rob tries let's see what's going on in terms of objectives and criterion measures. The objective in this situation is to hit the can. The criterion measure will be if she actually does hit it. We should be able to hear if she meets the criterion. If she misses, she has not met the criterion and consequently has not met the objective. By examining behavior in terms of a criterion we know if the objective has been met.

Joe: "Okay, Rob, I'm waiting!"

Roberta: "Well, here goes." (Sound of rock hitting can)

Narrator: Well, Roberta came through with flying colors. Let's back up, though, and make some modifications in the criterion measure. Our objective, hitting the can, will be the same. Just the criterion measure will be changed.

Joe: "Hey, Rob, bet you can't hit that can."

Roberta: "Well, it does look pretty far away."

Joe: "Okay, I'll bet you can't hit the can once in three tries."

Narrator: There it is—the new criterion measure. Roberta will meet the criterion and therefore, she will meet the objective if she hits the can once in three throws.

Roberta: "Okay, here goes." (Throws and misses)

Joe: "Hah, you missed."

Roberta: "Well, here's my next throw." (Throws and misses)

Joe: "Hah, you missed again. Last try!"

Roberta: "I'm going to get it this time." (Throws and hits)

Narrator: Well, enough of Roberta and rock throwing. We've tried to demonstrate what a criterion measure is. It is a procedure for deciding if a specified objective has been met. Without the criterion measure we would not know if the objective has been met. In teaching, we would not know if we are effective.

Now, in the case of Roberta, it is quite easy to make our decision. Objectives that deal with psychomotor tasks are easy to measure. It is not nearly as easy to measure objectives of a cognitive or affective nature. Most of our daily teaching is concerned with cognitive and affective objectives.

To measure an objective (to find out if it has been met) the learner must demonstrate his or her ability in some tangible manner. We cannot measure learning that is not demonstrated.

If I ask you to *think* about what I have said, it would be impossible to determine whether you were thinking or not. If instead I asked you to *remember* what I have said, I could find out by administering a short test. I would decide what score is passing on my test and I'd have my criterion measure. You can *demonstrate* to me your ability to remember. You can't demonstrate whether or not you were thinking! If I select the appropriate objective I can measure your attainment of it.

Here's an example of demonstrated behavior. I'm going to ask Roberta to spell a word. She will meet my criterion and thereby demonstrate her ability if she spells the word with no mistakes. "Roberta, spell the word *demonstrate*."

Roberta: D – E – M – O – N – S – T – R – A – E – T

Narrator: Roberta did not meet my criterion. She, therefore, did not meet my instructional objective. Now, I must decide whether to give her more training, or change my criterion—allow her one mistake. Now I think that my criterion measure is appropriate. I think she should be able to spell the word "demonstrate." So in this instance, I'll have to spend a bit more time in instructing her on spelling.

Now, it's time for you to do some work. On your table you will find an envelope marked #1. Open the envelope and take out the sheet of paper. (*Pause*) On this paper is an instructional objective. Read the objective and then write a criterion measure—some way in which your group will decide whether the student has met the objective. When you finish writing the criterion measure, restart the player. At this point stop the recording.

Stop Recording

Narrator: Okay, you should have written out your criterion measure. Your criterion measure will be a measuring stick to let you know if the student has met the objective that has been set. Now all we need is some demonstration on the part of the student. You will find a copy of the student's work in the envelope marked #2. Open the envelope and examine the student's work. Find out if the student has met the objective according to the criterion measure that your group has written. At this point, stop the recording.

Stop Recording

Narrator: How did your group do? The criterion measure allowed your group to decide what was passing or at what level Johnny had to perform to show if he had achieved the objective. Without the criterion measure there would have been a difference of opinion within your group regarding whether Johnny had met the objective. Rob, give the group another teaching objective that you might use with a learner such as Johnny.

Roberta: “Okay, I’d like Johnny to be able to follow a set of directions. I’ll ask him to perform something for me that he can do. He, however, will be relying on his listening ability. I’ll ask him to say his name and then hit the drum three times, then two times, then four times. He must listen to the entire sequence before responding. Up until now he’s been able to do three step commands—I know he’s ready for four step commands.”

Narrator: Open envelope #3. On the paper list the criterion measure that will allow Roberta to know if Johnny has met the objectives. After you’ve written the criterion measure start the recording to find out how Johnny did. At this point stop the recording.

Stop Recording

Roberta: “Okay, Johnny, I’m going to give you some directions. I’ll only be able to say them once, so listen carefully. Say your name, hit the drum three times, then two times, then four times. Okay, Johnny begin.”

Johnny: “Huh? Can you repeat it?”

Roberta: “Go ahead and do it, Johnny.”

Johnny: Three drum beats, then two drum beats, then four drum beats.

Narrator: How did Johnny do? Did he pass the criterion measure that your group set? Did he meet Roberta’s instructional objective? Take a few minutes to discuss this within your group. Stop the recording at this time.

Stop Recording

Narrator: For any instructional objective there can be many different criterion measures. It depends upon the teacher and the level of proficiency that the teacher would like the learner to demonstrate. As a final exercise you will find an envelope #4, a set of different instructional objectives. For each, develop a criterion measure that could be utilized by a teacher to assess whether a learner has gotten the instructional objective. When you’re finished writing the criterion measures, open envelope #5 and check what your group has developed against possible criterion measures. At this point stop the recording.

Stop Recording

Envelope #1

Background

Johnny has been a so-so speller. Sometimes he does well, and sometimes he doesn't. We visited a dairy last week and he seemed quite interested. Hoping that he'd learned something from his experience, I've prepared the following spelling test for him. (See Duplicator Page 2 for the test spellings.)

Spelling Test

- | | |
|------------|------------|
| 1. dairy | 6. carton |
| 2. machine | 7. bottle |
| 3. milk | 8. manager |
| 4. cream | 9. deliver |
| 5. cow | 10. Truck |

Instructional Objective

To have Johnny demonstrate through the use of a spelling test that he has learned to spell words associated with a dairy.

Criterion Measure

I will know if Johnny has met the objective if:

Johnny

Envelope #2

- 1 dairy
- 2 masine
- 3 milk
- 4 craem
5. cow
6. cartin
7. bottle
8. manager
9. deliver
10. truk

Envelope #3

The teacher would like Johnny to be able to carry out a four-step command in sequence. She feels that Johnny should be able to do it.

Criterion measure:

Johnny will (be specific):

*Restart the recording ***

Did Johnny meet criterion?

Yes _____ No _____

Envelope #4

For each of the objectives below, write a possible criterion measure.

- 1) The student will demonstrate proficiency on the balance beam.

Criterion Measure:

- 2) The student will know the Dolch Basic Word List.⁴

Criterion Measure:

- 3) The student will know the capitals of the States.

Criterion Measure:

- 4) The student will understand the natural resources of the United States.

Criterion Measure:

⁴ [See www.english-zone.com/reading/dolch.html]

Possible criterion measures:

- 1) The student will walk from one end of the balance beam to the other without falling.

The student will take 4 steps on the balance beam, turn around, and take 4 steps back without falling.

The student will be able to take 6 steps on the balance beam with his or her eyes closed.

- 2) The student will use at least 10 of the Dolch words in an essay on safety.

The student will be able to recognize 15 out of 20 words that are presented on flash cards.

- 3) Given a list of States the student will be able to write the corresponding capitals for 43 of them.

Given a list of capitals the student will be able to write the corresponding States for 40 of them.

The student will be able to write, from memory, all 50 State capitals.

- 4) The student will be able to write 10 different natural resources of the United States.

The student will be able to state the natural resources of Montana, California, and Oklahoma.

Workshop Kit #4
Learners' Approaches to Learning
Ted Ward

Workshop Kit #4

Learners' Approaches to Learning

Ted Ward

Instructions for the Coordinator

“Learners’ Approaches to Learning”⁵ is a large group activity designed to illustrate the relation between the learner’s approach to an instructional problem and the design of the instructional experience.

Objectives

- To increase the teacher’s awareness of (and skill in observing) the approach a learner brings to a given instructional experience.
- To involve the teacher in creatively modifying an instructional material in order to better relate it to the learner’s approach.

Materials Needed

A separate copy of each of the eight pages (plus optional ninth if time allows) for each participant. Duplicator pages 1-9 are provided. Pages are to be distributed one at a time.

Procedure

1. Prepare by arranging a sequence of stacks of the eight or nine pages, face down. Be sure to have enough copies. Everyone will need an individual copy of each. Watch the timing as indicated on the Timetable. Your participation as total-group leader is needed at end of duplicator pages 6, 8, and 9.
2. Lead the discussion (see Duplicator Page 6):

⁵ This training kit was developed for a Special Study Institute held in June of 1971. The Institute was conducted under the auspices of the Michigan Department of Education, Special Education Division under support from the U.S. Office of Education, Bureau of Education for the Handicapped. The opinions expressed herein do not necessarily reflect the position or policies of the Michigan Department of Education or the U.S. Office of Education and no official endorsement should be inferred.

- a) Ask for one spokesperson for each group, in turn, to describe *one* approach represented in the group. (Suggest that each group try to add a different approach rather than to repeat one that has already been cited by another group.)
 - b) Usually you will carry on this discussion until all groups have been represented and three to six different approaches have been described.
3. Leading the discussion (Duplicator Page 8):
- a) Ask for self-examining comments; for example,
 - What did you learn about yourself?
 - In what ways is your learning style unique to you?
 - What did you observe in your group that surprised you?
 - b) Ask questions or ask for comments that help establish that transfer of the experience to teaching experience?
 - Would you expect children to be more alike or more different in their approaches to learning?
 - How can you use observation skill to get a better understanding of the child's approaches to learning?

Minimum time required: 1 hour, 20 minutes.

Time required for entire exercise including the optional page 9: 1 hour, 40 minutes.

Timetable

Minutes	0	Begin page 1 (time not critical)
	5	Begin page 2 (and 3). Allow 10 timed minutes.
	15	Begin page 4 (time not critical)
	20	Begin page 5. Call time on the test at end of 3 minutes. Allow time for checking and changing seats.
	25	Begin page 6 (item not critical)
	40	Discuss page 6 (time not critical)
	50	Begin page 7. Allow 10 timed minutes.
	60	Announce time to end the organizing and begin the five-minute "learning period".
	65	Begin page 8. Call time on the test at end of 3 minutes. Allow time for checking.
	70	Discuss page 8 as time allows (about 5 to 10 minutes).
	80	Begin optional exercise. (See detailed notes on leadership for the optional exercise.) (The optional exercise can last from 20 to 30 minutes.)

Learners' Approaches to Learning Coordinator's Notes For The Optional Exercise

1. Allow time for reading Duplicator Page 9.
2. Stand at the whiteboard and ask for nominations for a subject and level to begin the grouping.
3. Write the first nomination on the board, e.g., "lower el. arith.," and immediately ask for a show of hands for those who wish to be in this group.
 - If there are more than 5 hands, indicate that two groups will be formed on this topic; if more than 10, three groups, and so on.
 - If there are less than 3 hands, erase the nominated heading and ask for another.
4. Repeat the process until enough groups are formed to accommodate all the participants. (Don't take time to list the names of people who will be in each group.)
5. If you have a straggler or two ask them to join any one of the designated groups. (No group should be smaller than 3 people.)

To lead the total-group discussion at the end of Duplicator Page 9:

1. Coordinator should read aloud the paragraph ('a' and 'b') at "Third."
2. Ask one spokesperson from each group to describe the common and the alternative approach for the learning task discussed by the group.
3. Insist that the contrast be made between what is usually successful versus what certain children (or a *certain* child) needs. The emphasis should not be on what way is best, but what are the ways that relate best to the learning approach of a certain child.

Relating to Learners' Approaches to Learning

Ted Ward and S. Joseph Levine

Please Read This Page

Materials required: Separate copy of each of the eight pages (plus optional ninth if time allows) for each participant. Pages are to be distributed one at a time.

Purpose: To illustrate the relation between the learner's approach and the design of the instructional experience.

Objectives: 1) To increase the teacher's awareness of (and skill in observing) the approach a learner brings to a given instructional experience; 2) to involve the teacher in creatively modifying an instructional material in order to better relate it to the learner's approach.

Introduction

Effective learning depends, to a large extent, on the attunement between the instructional approach and the learner's characteristics. Even a "good" instructional material may not be attuned to every learner's approach to learning. A teacher needs to be sensitive to the differences among learners' approaches to a learning task and should make reasonable efforts to modify the instructional approach to the student's approach to learning.

The difference among children's approaches to learning is somewhat similar to the difference in their approaches to play. Give each of three children a particular toy and watch them; one will use the toy the way it was intended, one will find some alternative way, and the third will prefer to play with the box!

Each learner brings his or her own unique experience and ways of working to bear on a learning task. The teacher must develop an observational skill; it is possible to learn about the learner by watching the approach he or she makes to a given learning task.

Instructions: Indicate that you have read this page carefully by turning it face down on your desk or table. Other pages will be presented to you, one at a time, in sequence. Please follow the instructions given on each of them.

Distribute page 3 (Worksheet A) at the same time.

Have you ever asked a child to learn a list of names? How did you organize the instructional experience?

Following is an instructional experience with very little organization. Make the best of it in your own way. This task isn't any more remote from you than many of the learning tasks are from the children who must learn them! These are real countries and cities and they are correctly associated. No tricks here. *Please learn the name of the capital of each country. You have ten minutes!* (The test for this learning will be for you to recall the names of the capitals when you are given a list of the countries.) Use the worksheet in any way you wish.

<u>Country</u>	<u>Capital</u>
Dominican Republic	Santo Domingo
Liechtenstein	Vaduz
North Korea	Pyongyang
French Guiana	Cayenne
Gabon	Libreville
Uganda	Kampala
Upper Volta	Ouagadougou
Mongolia	Ulan Bator
Rwanda	Kigali
Zambia	Lusaka

Worksheet A

When time is called, please put this page and all other materials face down and out of sight.

Please Describe Your Approach To This Learning Task

1. What did you do in order to learn the list of capitals? _____

2. In what way(s) is the approach that you used one that you have found helpful in other similar tasks?

3. Describe a similar learning task that you have encountered in the past.

When completed, turn this paper over. All papers and writing should now be out of sight.

TEST

First: Write the name of the capital of each country:

(Limit: 3 minutes)

Uganda	_____
Mongolia	_____
Upper Volta	_____
Rwanda	_____
Zambia	_____
North Korea	_____
French Guiana	_____
Gabon	_____
Dominican Republic	_____
Liechtenstein	_____

Second: Mark (X) on the errors by comparing this test with duplicator page 2.

(No penalty for spelling errors)

Third: Rearrange your seating to form groups of five or six people each.

(Basis of the grouping is unimportant)

- A. Now that you are seated in a group with four or five others, take turns describing the approach you used to learn the list of word associations. *Discuss* them with each other. What are the various approaches each of you took to this learning task? For example, did you copy down the list? Why? Did you rearrange it? Did you start with the harder ones or the easier ones? (For you, what looked like the harder ones?) Did you all use the same approach? What were the variations?
- B. After you have each taken a turn summarize as follows: (You may discuss this as you write. Write individually or collectively, as you prefer.)
1. How many approaches with major differences were reflected in your group? _____
 2. Describe the approach that reflects the most unusual learning style represented in your group:

 3. Describe the approach that was the most common in your group:

- C. Again, take a few minutes to *discuss*: how could the instructional task have been best presented or organized in order to make it even more effective for a person who uses the approach described at '2', above. Also, discuss how it could have been presented most effectively for a person using the approach described in '3', above.

Designate one spokesperson to report to the whole group if called upon—particularly regarding the discussion at 'C'.

Please Return To Individual Seating

Following is another list of ten countries and their capitals:

Gambia	Bathurst
Nepal	Katmandu
Guadeloupe	Basse-Terre
Togo	Lomo
Angola	Luanda
Papua	Port Moresby
Afghanistan	Kabul
Malaysia	Kuala Lumpur
Niger	Niamey
Sarawak	Kuching

Important: In the space below, reorganize the instructional approach to better accommodate your own learning style. In other words, assume that you are designing an instructional approach and/or an instructional device to teach these capital cities to a person who uses *your* approach to learn such a list of associated words. Indicate the steps that the learner is to take. You have ten minutes to organize the instructional approach. (Hint! Recall the approach you used for the first learning task. Reorganize, underline, alphabetize, write your list of associational clues or whatever it takes to make this list easier for you to learn. Never mind whether others would learn it more easily this way—the issue is not the “best way” to learn the list, but your way to learn the list!)

You have five additional minutes to learn the list using your instructional approach. Then remove all papers again.

TEST

First: Write the name of the capital of each country:

(Limit: 3 minutes)

Guadeloupe	_____
Togo	_____
Papua	_____
Sarawak	_____
Niger	_____
Malaya	_____
Gambia	_____
Nepal	_____
Afghanistan	_____
Angola	_____

Second: Please Mark (X) on the errors by comparing this test with duplicator page 7.

(No penalty for spelling errors)

The two lists of capital cities were each randomly selected from a larger list of infrequently cited national and territorial capital cities. For various reasons, including the small size of the sample and the differences in times of exposure to the two lists, this is not a valid experiment. It has, however, provided you an experience illustrating the difference that results from designing an instructional approach that is more attuned to the learner's approach to the task. In this case, you were both the teacher and the learner!

The difference was a matter of how appropriate for your learning approach the instruction had become. How easily you learn something is not always a matter of whether or not it was learned or a field trip! More often the difference lies in the organization of the instructional materials!

Prepare to discuss the meaning of this exercise and its practical applications for your teaching.

Curricular Application

First: Reorganize into teams of 3 to 6 people each, in terms of the interest in working together on a common curricular and learner level.

For example, groups could be formed in relation to the following:

Science, upper elementary
Health, upper elementary
Safety, lower elementary
Arithmetic, lower elementary
and so on

What is your group's curricular and learner emphasis? _____

Second: Each group selects for itself a *particular single learning task* that falls within the group's curricular emphasis. (For example, introduction of the "take-away" concept of subtraction.) The learning task must be *highly specific*, not a general classification of learning tasks.

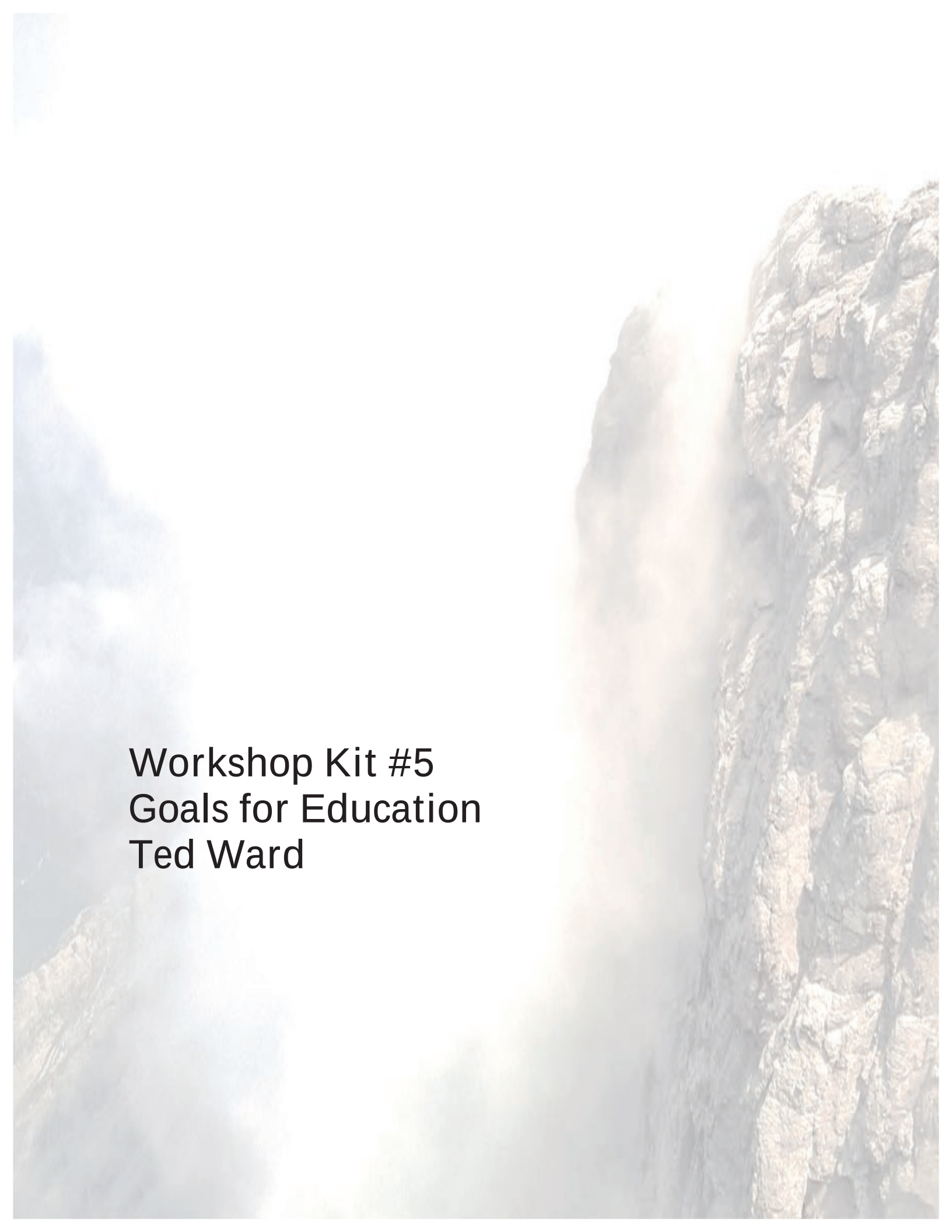
What is your group's curricular learning task? _____

Third: a) Describe and discuss the ordinary or most commonly successful instructional approach to this learning task.

b) Plan and design one alternative to the approach (in a) that would better relate to a particularly different learner approach of which you are aware. Avoid the tendency to generalize about "all learners," or "the *best* way to teach this is . . ."

Fourth: Prepare to summarize your discussion in "Third," above, for the benefit of the total group.

Identify a spokesperson for your group.

A dramatic landscape photograph of a rocky mountain peak. The rock face is rugged and textured, with a warm, golden-brown hue. A soft, ethereal rainbow is visible in the misty air, arching across the scene. The sky is a pale, hazy blue, and the overall atmosphere is serene and majestic.

Workshop Kit #5 Goals for Education Ted Ward

Workshop Kit #5

Goals for Education

Ted Ward

“Goals for Education”⁶ is a group exercise for collectively and individually confronting the problem of identifying and relating the underlying goals for which a given educational operation exists.

Objectives:

- To identify goals of educational operations as having to do with *knowing*, *doing* and *being*.
- To associate and relate functions of *knowing* with appropriate goals of *doing* and *being*.

Procedure:

- 1) Introductory tape and an introductory transparency (transparency page 1) set the scene for Kit 5 and for the two kits that follow in this series (Kit 6 & Kit 7).
- 2) The leader is to conduct a structured exercise, described in the manual.
- 3) Discussion following is assisted by transparency pages 2 and 3.

Included in This Kit:

Leader's Manual

Three visuals (If a projector is not available, the material on the visuals should be copied onto a whiteboard or posted for display when indicated).

You will need:

- Three copies of six-page document on “Instructional Objectives” (Duplicator Pages 1-6)
- A large whiteboard. Large poster-boards can be substituted. A projector (or prepared posters) is also needed.
- Seating should be convenient for *writing*, followed by informal discussion. Time needed for this session: 1-1/2 hours.

For The Leader: The main objective of this session is for participants to examine the goals of their teaching and of their institution. Emphasis on goals often helps educators become more objective and more willing to be critical of traditional and unchallenged ways of educating.

⁶ This training kit was developed for a Special Study Institute held in June of 1971. The Institute was conducted under the auspices of the Michigan Department of Education, Special Education Division under support from the U.S. Office of Education, Bureau of Education for the Handicapped. The opinions expressed herein do not necessarily reflect the position or policies of the Michigan Department of Education or the U.S. Office of Education and no official endorsement should be inferred.

Participant Activity:

The most important part of this session is an exercise that will take about an hour. Begin the exercise by reading or paraphrasing the following instructions:

- Each of you will need to work independently for this exercise.
- You will need one or two blank pages of paper and a pencil or pen.
- Please consider the following proposition: (Read this aloud)
“Your school, college, educational or communication program is assumed to be important because it accomplishes something. You are willing to be in the position, role, or job that you have because it allows you to contribute to the fulfillment of the institution’s purposes. Although these purposes may be only vaguely stated, your own view of what is important is likely fairly clear. What are the goals that *you* think are important? What do you believe you are accomplishing? On the paper in front of you, each one of you is to write down the completions of these statements:”

I want my students to learn _____

“Those of you not now engaged in teaching can modify the statement to read:”

Our institution exists so that people will learn _____

“I will write this at the top of the whiteboard, and you will please write it at the top of your paper—only once. Then complete the statement in as many different ways as you can think of. Each completion should represent a specific thing you would like your students to learn. You may begin to write.” (Now you should write at the top of the whiteboard, not very large:

I want my students to learn _____

After about three minutes interrupt the group:

“Are you started? Let’s see if we are going about this correctly. Someone please read for us one of your statements:

I want my students to learn _____

Yes, thank you. Another example? _____

Yes, another? _____

Satisfy yourself that the participants all have the idea and are not wasting their time in recopying the stem phrase each time. Encourage the participants to make their lists as long as possible.

If someone asks whether you prefer the goals of his course or rather the goals of the school as a whole, indicate that you want *both*.

Allow about twenty minutes, or until almost everyone seems to have quit writing.

Data Collection:

Then begin the data collection phase. Following is the heading structure for making a *three-column list* of the responses reported. *Don’t put the headings on the three columns until after the lists have grown quite long.* Use a “someone give me another” approach while you write on the board. (Don’t single out one

person at a time to give you his whole list.) Don't put the same item on the board twice unless the wording is substantially different or unless it is stated in such a way as to put it in another column.

Study the following examples very carefully as part of your own preparation for conducting this exercise.

I Want My Students To Learn . . .

. . . to know . . .

Health principles
Safety rules
How to take care of
themselves.
How to spell
How to make a bank
deposit.

. . . to do . . .

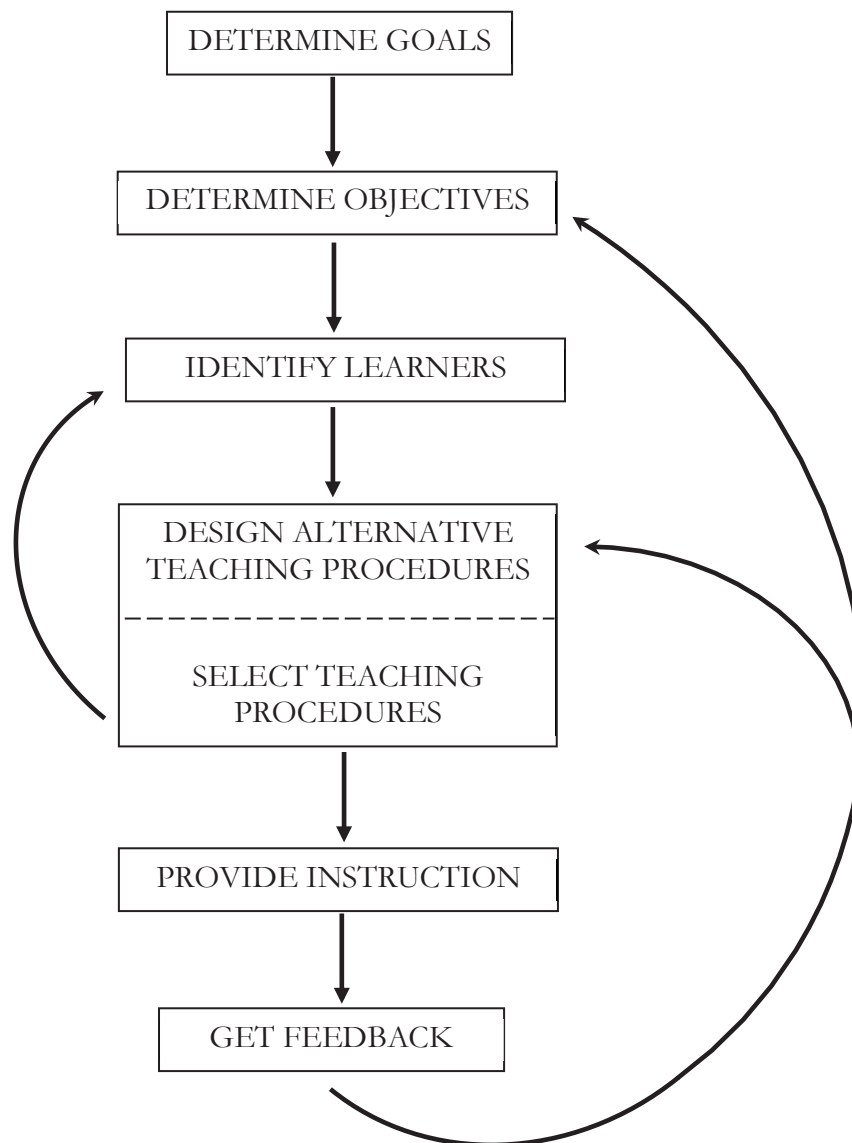
Get along with other
people.
Read
Write
Enunciate clearly
Tie their own shoes
Cross the street carefully

. . . to be . . .

Self-supporting citizens
able to continue learning
beyond school.

Discussion:

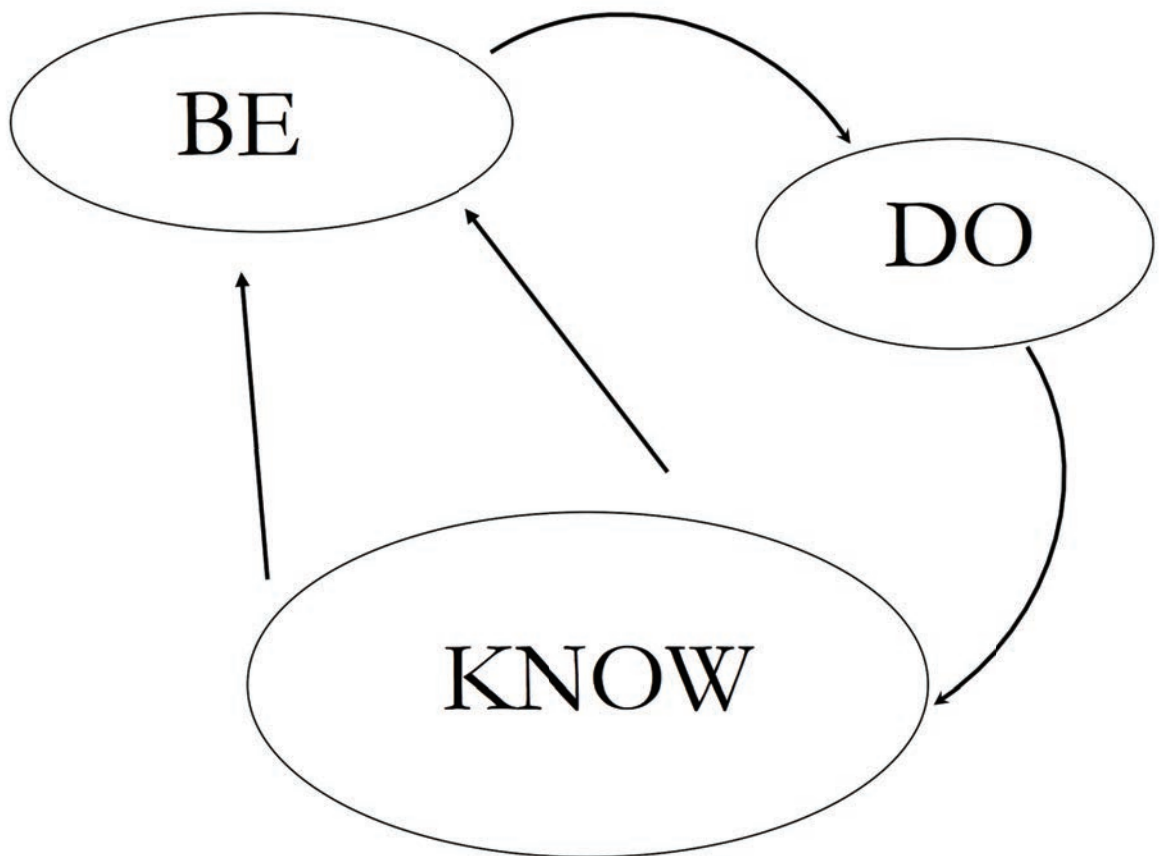
1. What does this set of lists suggest about the relative emphasis or value of the three lists?
2. Which is the most important set of goals? (Is this a fair question?)
3. Take any item in any column and ask how it can be justified. Call attention to the fact that most justifications require reference to items in *other* columns.
4. Generate more items for the "know" column by examining items in the "do" column.



1. Institutions have goals
2. Teachers have goals
3. Goals are usually stated in terms of what the students are to *know*, to *do* and to *be*
4. *Knowing* is basic to *being*
5. Being is shown through *doing*



Do these goals agree?



Learning Theory and the Teacher

III. Defining Instructional Objectives

These *Memos* move from one topic to another but our trademark—the learning curve—stands firm. Despite all that is being said about teaching, student participation, academic neutrality, unionism, and academic freedom, etc., a student must learn something. Determining what knowledge is worth knowing is not the exclusive bailiwick of the teacher; but whether by the faculty as a whole, the curriculum committee, the teacher, or the student, what is to be learned must first be identified. This is the crux of the whole education process; the critical step that determines the organization of the subject matter and how it will be taught.

Pedagogical serendipity has its place, but teaching that is organized around a sequence of goals makes the most efficient use of students' talents for learning. Intellectual browsing is important, but eventually the process of learning should become goal directed. Humanistic attitudes toward students, the use of modern media, low teacher/student ratios, high salaries, and large libraries are unimportant educational advantages if the substantive content of the curriculum is obsolete, irrelevant, or provincial, or if it is mismanaged.

Teachers don't ordinarily resist the idea of defining their course objectives as long as objectives can be easily written and as long as accountability rests with the student. It remains for the student "to appreciate the historical origins of Western democracy" or "to learn how to think artistically" or "to grasp the significance of chemistry." These are some of the purr words of academia; the instructional vagaries that need to be shaped into a more explicit expression of course objectives.

AUTHORITY AND RESPONSIBILITY

The teacher, as subject-matter authority, is responsible for prescribing what knowledge, abilities, and attitudes he believes his student should acquire. Discussion with students and further teaching experience may, and indeed should, alter his objectives; such reconsiderations are more likely to enhance than to demean his authority. Making value judgments about instructional means and ends is part of the teacher's job and such judgments are rarely static and inviolate.

Clear and valid statements of curricular objectives require the very best talent, if not the prophetic power, of a teacher. Defining these goals is a more demanding professional task than simply teaching larger and larger classes, or being a "good teacher" in the narrow, information-giving sense. "Telling things to students" is hardly more than an incidental aspect of learning. Prior to preparing the lecture or the examination, the teacher

Memo to the Faculty

**From the Center
for Research on
Teaching and
Learning**

**University of
Michigan**

**No. 43
December 1970**

should ask this question: at what time in the future will the relevance of a given fact or procedure, concept or attitude pass its inflection point and start downhill toward obsolescence? His answer should indicate whether or not such information is worth lecturing about or testing.

Performance Criteria

Teachers are shifting from the traditional exposure approach to instruction (the sunburn theory) to an approach that emphasizes demonstrated achievement of specific educational objectives. The teacher sets a standard of achievement in advance and each student continues in the course of study until he achieves the agreed upon criterion level of performance. The course must therefore have more specific focus than simply presenting a panoramic view of an area of knowledge. Logically, this type of declaration of objectives by the teacher is the necessary first step leading to new grading arrangements such as pass/fail; pass/incomplete; or credit/no entry.

Committees, Teachers, and Students

The second major ramification of the shift from exposure to achievement of present objectives is that the teacher himself must have considerable leeway in specifying the instructional goals for his students. Yet, the curriculum committee, which is often the locus of power in such decisions, is a well-known site for power politics and the hidden agenda of these group meetings is heavily loaded with personal, departmental, and discipline-bound suspicions and educational vagaries.

Under these conditions it is extremely difficult to bring about neat, well-focused curricular changes. Committees are even more remote than the teacher from the educational purposes which the individual student professes and its reviews tend to compromise the sparkle and zing of the individual teacher's best judgment about instructional objectives. The teacher and the student both deserve considerable elbow room within which to reshape the objectives most pertinent to their goals.

Objectives are difficult to define for most college-level offerings. How, for example, can a teacher help students to achieve the subtleties of: critical thinking, value judgment, favorable attitudes toward the discipline, ability to organize relevant information, to utilize concepts, to define and solve important rather than transient problems? The base-line for classroom learning is the teacher's definition of what his course of study is all about, and what it is intended to do for his students.

Teachers appreciate the growth rate of new knowledge and are discriminating and selective with respect to what content stays in a course, what drops out, and what is added. But despite the teacher's authoritative position, his instructional objectives must be sufficiently flexible to enable each student to adapt and shape a course of study to meet his personal educational purposes. The instructional objectives defined by the teacher and the learning objectives sought by the student are not necessarily congruent. This is particularly true in the liberal arts fields, and here student participation often helps the teacher to arrange his course to take maximum advantage of student

interests. In professional fields where emphasis is on the development of skills and mastery of a core of technical knowledge, such a procedure makes less sense. What is the point of a debate between teacher and students over the technical aspects of surgery, electrical engineering, or survey sampling?

The teacher has the obligation to set forth his instructional goals early in the course. The educational quality of an offering depends on: (1) the relevance of these objectives, (2) how accurately they are understood, (3) the student's motivation to achieve them, and finally, (4) how appropriately and adequately the teacher's instructional resources are used to obtain these objectives. Knowing this, the student can select what to him is a course of study that offers the conditions most likely to support his highest level of performance.

The emphasis on defining objectives does not presume that classroom learning is the one and only means for education. Other campus settings also influence a student's intellectual and personal development. It is not likely, however, that these extra-curricular influences will be educationally worthwhile in a dreary academic atmosphere of complacent professors, compulsive administrators, and conforming students. The excitement and the challenge in the dialogue of the classroom is not achieved in isolation from the academic climate of the campus.

TAXONOMY FOR INSTRUCTIONAL OBJECTIVES

The most widely referenced taxonomy in the "cognitive domain" (Bloom, ed. 1956) divides types of examination questions into six categories, all relating to the recall or recognition of knowledge and the development of intellectual abilities: (1) knowledge, (2) comprehension, (3) application, (4) analysis, (5) synthesis, (6) evaluation. The lowest order objective would consist of straight recall or recognition of knowledge (i.e., the student shows that he can repeat facts, use terminology, follow a sequence, define criteria, state

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principles, generalizations, or theories). While specific learning is important, few would claim this level of learning as the most important dimension of academic achievement. Unfortunately, these lower order achievements are easier to frame in terms of specific instructional objectives and to measure via the examination.

Confirming the student's ability to *evaluate knowledge* is a particularly difficult objective because it requires agreement on the criteria involved in making a "good" evaluation. These complex objectives, and such others as *analysis* and *synthesis* often tend to be "assumed." Because these are highly desirable educational achievements, the time and the distress it takes to set them forth as legitimate and first priority performance objectives are well worthwhile.

Bloom and his associates published a second taxonomy (1958) covering the "affective domain," that is objectives dealing with interests, attitudes, and values and the development of appreciations and adequate personal adjustment. It is, of course, difficult to assess the progress of students along these dimensions but they are nevertheless significant and valid educational objectives. Along this line, the Ford Foundation recently announced (1970) grants to the University of California at Santa Barbara and the University of Massachusetts to train teachers to fuse emotional factors with intellectual subjects in a new approach to learning called humanistic or confluent education.

Course planning is demanding and frustrating and often leads teachers to nurse comforting escape mechanisms such as "it is my job to see to it that the students learn what's in the textbook." But the textbook is a precarious crutch and the teacher who depends on it is headed toward obsolescence. Most textbook content is already from three- to five-years-old and the illustrative material is too often canned, mechanical, and shopworn.

The following descriptive categories are widely used in learning research and can serve as a basis for sorting and organizing course material. They are

nontechnical and "commonsense" and sufficiently general to be applicable to most academic departments.

Verbal Learning of Factual Information

College teachers are placing increasingly less emphasis on the rote memorizing of factual data because "facts" have a disconcerting way of becoming "non-facts" in a very short time. However facts are prerequisite to understanding concepts, principles, and generalizations and each student must necessarily construct his hierarchy of knowledge on a factual foundation.

From his experience as a scientist and teacher Albert Szent-Gyorgyi (1964), the Nobel laureate in biology, makes an effort to relate fact and generalized statements:

Science tends to generalize, and generalization means simplification. My own science, biology, is today not only very much richer than it was in my student days, but is simpler too. Then it was horribly complex, being fragmented into a great number of isolated principles. Today these are all fused into one single complex with the atomic model in its center . . . We, in our teaching, should place more emphasis on generalizations than on details. Of course, details and generalizations must be in a proper balance; generalizations can be reached only from details, while it is the generalization which gives value and interest in the detail.

Meaningless is the key variable in learning. Only those rote items that acquire meaning remain in memory and serve the student over time and as he moves from place to place and from problem to problem. In order to achieve meaningfulness, which is personal and subjective, the student must actively participate in the process of learning what the facts mean. Writing a term paper, conducting a special project, or discussing an idea in

a group contributes to this process.

Concept Formation

The ability to grasp and to manipulate ideas is a more distinctive talent than the ability to memorize information. The correlation between intelligence and the memorizing capacity in college students is barely higher than zero. Most U-M courses, if they were consistent with the special intellectual resources of U-M students, would be centered on the understanding of principles, generalizations, and conceptual thinking.

Identification and labeling of concepts, principles, and generalizations are significant first steps toward the definition of course objectives. Good instruction, however, calls for more than isolating abstract ideas if students are to do more than memorize labels.

Method, Process, and Problem-Solving

Considerably more is known about teaching substantive material, whether facts or concepts, than about teaching problem-solving procedures and research methodology. The *methods* of scholarly research and criticism and the *methods* of science are complex and intellectually demanding; they cannot be "taught" as side effects of a laborious study of literature, an exhaustive analysis of historical documents, or a dutiful performance of exacting laboratory procedures.

It is easier to teach the facts of merit badge biology than the concepts and theories of biological science. More demanding yet is successful instruction in the methods used by scientists and scholars to solve problems, answer questions, and conduct research. Being competent in research methodology means being able to define problems, generate hypotheses, test theories, and draw inferences from data, design experiments, formulate generalizations; the competent investigator also knows when to continue or to alter his tack and when to admit failure. Closely related is the problem of how best to help students in professional training to develop self-renewing procedures that will, eventually, enable them to avoid informational obsolescence.

Changing Attitudes and Values

The forgetting curve is steep for most of the information that students learn. Fortunately, the attitude changes that emerge from the study of content specifics may remain with students for many years. Affective learning—that is, attitude change, the formation of values, and the acquisition of new and stronger educational motives, ambitions, and aspirations—has greater staying power for students and is more readily transferred to situations outside of the classroom than is substantive information. Changes in attitudes and values cannot, however, be taught in the usual direct, perceptive way. Students are probably more influenced toward these objectives by the example the instructor sets than by his platform “sermons.”

The teacher should by no means bypass the sensitive task of explicitly stating the attitudes and values he would like to see demonstrated by his students. The lines between instruction, indoctrination, propaganda, and brainwashing are sometimes blurred; *all the more reason, then, to keep this matter on top of the table via the statement of objectives.* Open dialogue about emotionally toned objectives is the one best protection against false accusations of “thought control.”

PERSONAL DEVELOPMENT

Promoting the personal development (self-identity, self-actualization) of each student is a legitimate instructional objective. It deserves special treatment as an objective although it does not have its roots in learning theory or learning research in general. It is a “dangerous” objective because it easily becomes an excuse for educational permissiveness, intellectual and emotional wandering, and miscellaneous palliatives designed to keep students satisfied.

Robert MacLeod (1964), a psychologist at Cornell University, believes that a course of study should contribute to the growth of the individual as a person:

... if by growth we mean the actualization of potential, then the content of the study becomes all important. The student grows as a new world is opened up to him, a world which invites him to observe and question and evaluate, and the extent of his growth will be measured by the depth and the intensity of his engagement. The teaching that stimulates this kind of growth is unashamedly content centered...

The means and the ends of self-identity were stated somewhat differently by the humanist-psychologist Abraham Maslow (1968):

What do we mean by the discovery of identity? We mean finding out what your real desires and characteristics are, and being able to live in a way that expresses them. You learn to be authentic, to be honest in the sense of allowing your behavior and your speech to be the true and spontaneous expression of your inner feelings. Most of us have learned to avoid authenticity...

One of the goals of education should be to teach that life is precious. If there were no joy in life, it would not be worth living. Unfortunately many people never experience joy, those all-too-few moments of total life-affirmation which we call peak-experiences...

Existential-humanistic philosophy is a strong influence among students on campus. Maslow spoke of humanism as the “third force” in education and certainly self-actualization and its variations are among the values that students live by. Total educational freedom is not the answer—but neither is coercion.

Erik Erikson (1963) considers self-identity as emerging from the harmonious balance between the influences of one’s parents, teachers, and other important people during the course of reaching for personal maturity. Ernest Hilgard (1963) points up a consequent dilemma for the college teacher:

If we are really helpful in this growth process we find ourselves in the ethical dilemma of either enforcing parental values, and thus playing safe, or taking the risks of permitting experimentation with life experiences through which the new identity will emerge. If our teaching is effective it cannot avoid the awkwardness of being caught in a crossfire at this point, for we can be neither fully on the side of the parents nor fully on the side of the defiant youth.

Students are aware of this dilemma and watch to see how it is resolved by different teachers. The student is not, of course, a formless lump of clay waiting to be molded by his modelers. He already has a self-concept, but it is incomplete and he knows it. Despite the general display of defiance and alienation, students are looking for new models with which to identify. Hopefully, observing the diversity of faculty roles will give the student a choice.

THE TECHNOLOGY OF INSTRUCTIONAL OBJECTIVES

The “big push” to define instructional objectives in terms of student performance came with the technology of programmed learning developed by B.F. Skinner (1954) and his followers. Programmed instruction is a useful *model* for achieving an explicit level of educational performance. As a *technology*, programmed instruction is vulnerable to the same criticism as objective testing—curricular material

(continued on page 5)

THE GREENING OF THE CLASSROOM

Last term my students peppered me with reports, polemics, and protestations about academic authoritarianism, instructional coercion, categorical grading, and restraints on freedom to seek the counterculture. Teachers all over the campus meet these pressures. The force of student feelings is more clearly given than their specifications of how they should be redressed. Liberation doesn't lend itself to well-ordered instructional objectives within the cognitive domain. It is relatively easy to proclaim personal development and self-actualization as instructional objectives, but it is difficult to implement idiosyncratic goals. The responsibility rests with the student, but only after the teacher relaxes his authority and gives the student room to achieve his personal purposes.

The Greening of America by Charles A. Reich presents this emerging value in the following context:

Consciousness I is the traditional outlook of the American farmer, small businessman, and worker who is trying to get ahead. Consciousness II represents the values of an organizational society. Consciousness III is the new generation. (p. 16)

Consciousness III starts with self. In contrast to Consciousness II, which accepts society, the public interest and institutions as the primary reality, III declares that the individual self is the only true reality . . . The first commandment is: thou shalt not do violence to thyself. It is a crime to allow oneself to become an instrumental being, a projectile designed to accomplish some extrinsic end, a part of an organization or a machine. It is a crime to be alienated from oneself, to be a divided or schizophrenic being, to defer meaning to the future. One must live completely at each moment, not with the frenzied "nowness" of advertising, but with the utter wholeness that Heidegger expresses. The commandment is: be true to oneself. (p. 225)

Consciousness III rejects the whole concept of excellence and comparative merit that is so central to Consciousness II. III refuses to evaluate people by general standards, it refuses to classify people, or analyze them. Each person has his own individuality, not to be compared to that of anyone else. Someone may be a brilliant thinker, but he is not "better" at thinking than anyone else, he simply possesses his own excellence. (pp. 226-27.)

Consciousness I nourished the elite school. Consciousness II broadened the base for mass education. Consciousness III strives to recognize the individual rather than the grade point average. Conventional testing and grading are going to be more difficult to "sell" each year.—SCE

that lends itself most easily to programming (or objective testing) often fails to deal with the essential learning tasks desirable in college-level education.

A good mathematics teacher must have been the original instructional programmer. The professor starts the class hour at the upper left hand corner of the blackboard, and when the bell rings he has completed the proof in the lower right hand corner. The student is expected to learn and to understand the logical sequence from the first expression through the successive derivations to the final proof. It seems irrelevant to ask this teacher what "terminal behavior" he expects of his

students. He can reply, and without apology to the programming model, that students must be able to understand, reproduce and extend this sample of mathematical logic.

A similar argument could be used for most college courses. The *sequential ordering* of information is itself an instructional objective, and it is picayune, if not redundant, to restate this objective in the language of terminal behaviors. Bright students have been acquiring facts and procedures and understanding concepts from poorly written textbooks for a long time (the extra strain required to understand what is written may be a good condition for learning) and have

been able to retrieve and utilize this information when necessary after the course is over. The learning model requires that objectives be stated either in terms of the sequential ordering of information or of discrete changes in performance achieved by the end of the course.

It is to the advantage of both teacher and student to know the criteria for defining achievement. The teacher may be the first to recognize that a particular or long-standing objective may now amount to a rather unimportant segment of the course. He will also be aware of the sudden emergence of unanticipated outcomes. The former should be weeded out, the latter incorporated into the formal statement of objectives.

The teacher who seeks to avoid accountability for the performance of his students may resist the task of defining achievement because of the rather obvious *evaluation consequences*. Furthermore, a poorly prepared teacher may not be sufficiently knowledgeable to make the subtle discriminations required for setting down a differentiated list of objectives. As long as the goals of a course remain vague, the teacher remains relatively free from the pressures of accountability. To place the blame on students for their failure to achieve is to camouflage the need for change in the instructional system. If, for example, a teacher can attribute student failure to deficiencies in the student himself (poor motivation, background, or study habits), then the teacher and the institution can shrug off demands for change and justify the system-as-it-is.

Normally, the organization and planning of course objectives involve four main steps:

(1) *The teacher views his course in its broader perspective, with special attention to the attitudes, knowledge and skill required to perform satisfactorily beyond the limits of the classroom. This is the transfer of learning criterion (see Memo #34, 1969). A good task analysis (inventory) includes requirements determined to be currently important as well as those realistically projected to become relevant to the student's future performance.*

(2) *The teacher projects the likely strengths and weaknesses of students entering his course. Formal course prerequisites are unreliable indicators of the entering level of achievement. As high school curricula become more diversified, it is almost mandatory that the "sectioning" of freshman students be based on explicit achievement. Experienced teachers usually know what corrective action must be taken at the beginning of a course to adjust for gaps in prerequisite preparation as well as to reduce redundancy—if students have already mastered material, they are moved on to new content topics. Boredom bred of repetition can serve as a legitimate base for student resistance and agitation.*

(3) *The teacher considers what different skills and abilities are required to master the subject: memorizing, rapid reading, concept formation, perceptual-motor skills, inter-personal sensitivity, deductive analysis of value judgments, etc. Problem-solving, for example,*

may not be particularly important in a modern language course, but it is central to a science offering. The analysis of these skills is not complete until they are put into an integrated, hierarchical order. Memorizing, for example, precedes concept formation which supports problem-solving and the consequent changes in attitudes and value judgments. This third step is the difficult one and the teacher has few guidelines except at a rather high level of abstraction.

(4) *The final step is the formal coalescence of plans and instructional resources. By what instructional arrangements will these objectives be reached and how will their achievement be evaluated? Ideally, and to a large extent in actuality, a well-organized course can almost teach itself. That is, the students know the sequence of goals to be attained, the resources and conditions for learning have been established, and now it is a matter of getting at it.*

The final step is not complete unless teacher-defined objectives have been adopted in view of each student's objectives. In a small class the problem is not particularly difficult; but in a large course the resolution of the differences between teacher-made objectives and student-made objectives is, for practical purposes, limited to the mode of evaluation. A department-wide comprehensive examination, for example, gives the student very little freedom with respect to his learning objectives. As an alternate procedure, various options might be made available: test taking, carrying out a special project, writing one or more papers, or even selecting certain categories of questions on which his achievement would be evaluated. By whatever means, it is important that the teacher not view the process of defining his objectives as unilateral; as independent of the educational purposes of the individual student.

Memo No. 43

The Center for Research on Learning and Teaching

The University of Michigan
1315 Hill Street
Ann Arbor, Michigan 48104

Workshop Kit #6
Designing Objectives-Oriented
Instruction
Ted Ward

Workshop Kit #6

Designing Objectives-Oriented Instruction

Ted Ward

“Designing Objectives-Oriented Instruction”⁷ is an exercise, in the form of a cooperative game, through which teachers can gain experience in translating an objective into a specific plan for instruction.

Objectives

- To define two instructional objectives and to spell out the design of two alternative instructional procedures for accomplishing each of them;
- To assess the probable effectiveness of each of three instructional designs for accomplishing a given instructional objective.

Procedure

Divide the group into teams of two people each

Project the visual of objectives

Give each team a supply of forms:

1. “Instruction/E” Form (Duplicator Page 1)
2. “ABC” Forms (Duplicator Page 2)
3. “D” Forms (Duplicator Page 3)

Time required: Approximately 90 minutes, including discussion.

Visuals Page 2 should be used to structure the discussion.

⁷This training kit was developed for a Special Study Institute held in June of 1971. The Institute was conducted under the auspices of the Michigan Department of Education, Special Education Division under support from the U.S. Office of Education, Bureau of Education for the Handicapped. The opinions expressed herein do not necessarily reflect the position or policies of the Michigan Department of Education or the U.S. Office of Education and no official endorsement should be inferred.

**THE ABC's (and D's and E's) of
Designing Objectives-Oriented Instruction
An Instructional Game Exercise**
Ted Ward

Each team of two people: (Distribute one per team.)

You are to be given:

One Instruction/E Form

Two ABC Forms

Five D Forms

1. Prepare *two* objectives. Work together with your partner. Use an ABC Form for each objective.
2. For *each* objective, plan *two* different possible learning activities. (Use four D Forms.) Each activity should be designed so it could stand alone as an instructional experience adequate to accomplish the objective.
3. Exchange *both of your ABC Forms* with one other team (*hold your own D Forms*).
4. Select the best ABC Form from the other team that is easiest to understand.
5. Write a D Form for this ABC Form from the other team.
6. Combine with the team with whom you exchanged papers. Move your chairs so you can talk together.
7. Use the *E Form* to assess all three of the D Forms written for the objectives selected in Step 4. (Work together as a group of four people on this step.)

The last step in the exercise is E, below

Assessment of Learning Activities

E Objective # _____ as written by Group _____

FACTORS

Rate each factor "Best," "Good," "Fair."

	OPTIONS		
	D- _____	D- _____	D- _____
Relation to Objective			
Clarity of Focus			
Efficiency (in terms of use of time and resources)			
Likely to Teach the Specified Learning			

Description of an Objective

Distribute two per team

Group _____ Objective # _____

A What do you want the pupil to learn?

I want the student to learn to _____

B How will you know the pupil has learned it?

When the student has learned it, he will be able to _____

(Active verb)

Select One {
when confronted with _____
when asked to _____
when given _____

C What must the student have *already* learned in order to be able to learn A?

1. _____

2. _____

3. _____

4. _____

and so on.

Distribute five D Forms per team.

D Group _____ Objective # _____
Option _____

Description of the activity:

Prepared by Group _____

cut here

D Group _____ Objective # _____
Option _____

Description of the activity:

Prepared by Group _____

Learning Activity

Individual/group/class

Independent/teacher-led

Time required: _____

Equipment required: _____

Previous learning or physical skills required* in order for the student to participate:

1. _____

2. _____

3. _____

*In addition to those indicated on C.

Learning Activity

Individual/group/class

Independent/teacher-led

Time required: _____

Equipment required: _____

Previous learning or physical skills re-required* in order for the student to participate:

1. _____

2. _____

3. _____

* In addition to those indicated on C.

At the end of this exercise you should be able . . .

- . . . to suggest two or more instructional experiences that relate to the accomplishment of a given instructional objective;
- . . . to list three or more factors that should be considered in selecting an objective-oriented instructional experience;
- . . . to judge comparatively among three proposed instructional experiences in order to select the one most clearly objective-oriented.

1. What is the most creative (or potentially creative) part of the series of operations?

- A, B, C or D -
2. What were your sources of ideas for D?
3. How can you increase your creative potential for doing D?
4. What criteria, other than those listed on the E Form, did you use in judging the D's?

Workshop Kit #7
Focus on Feedback
S. Joseph Levine

Workshop Kit #7

Focus on Feedback

S. Joseph Levine

“Focus on Feedback”⁸ is a small group activity that is designed to provide the participants an opportunity to explore the many different instructional procedures that can yield feedback and also the many types of feedback messages that learners can “send” to us.

Objectives

- To increase the participant’s awareness of the many different instructional procedures that can be used to yield feedback from the learner.
- To increase the participant’s awareness of the many different feedback messages the learner can “send” to the teacher.
- To provide the participants an opportunity to utilize their own feedback in the completion of a task.

Procedure and Overview

Participants are seated around tables in groups of 3-6 members. Each group is given a set of four envelopes. They are instructed at different times during the activity to move from one envelope to the next. The task sheets in the envelopes call for group interaction in the development of a list of procedures that will yield feedback and a list of learner feedback responses. They are also asked to re-examine their own work and modify according to their intra-group feedback.

The structured segment of the activity is designed to take 35 minutes. This is followed by a short discussion period.

Time Schedule

5 minutes	Introduction	Show visual
10 minutes	Envelope #1	Group develops list of instructional procedures that can generate feedback.

⁸ This training kit was developed for a Special Study Institute held in June of 1971. The Institute was conducted under the auspices of the Michigan Department of Education, Special Education Division under support from the U.S. Office of Education, Bureau of Education for the Handicapped. The opinions expressed herein do not necessarily reflect the position or policies of the Michigan Department of Education or the U.S. Office of Education and no official endorsement should be inferred.

10 minutes	Envelope #2	Group develops list of feedback messages that learners can “send” to the teacher.
10 minutes	Envelope #3	Group selects the five most important from Envelope #2.
5 minutes	Envelope #4	Group develops five more feedback messages that should have been included in Envelope #2.
15-30 minutes		Discussion

List of Equipment

Provided in the Kit:

Duplicator Pages 1-4
Visual Page 1

You will need:

Envelopes (4 per group)
Pencils

Space Requirements

Seating and tables so that 3-6 participants are seated at each table. This activity may be run with any number of groups.

Instructions for Conducting the Activity

Prior to the activity, make copies of each Duplicator Page so that each group will have a single copy of each. Place each individual page in a separate envelope. Clearly label the outside of the envelope with a large number that corresponds with the page number. Each group will be given one each of the four different envelopes.

Instruct the groups that this activity will be run on a rigid time schedule. You will inform them when the time is up and they must move on to the next activity. Keep close track of time. Do not allow the groups to spend more than the allotted time for any phase of the activity. Inform them that all instructions are contained within the envelopes so there should be no questions. You will, however, be available if clarification is needed. They should open envelopes *only* as they are instructed to open them. Provide an opportunity for questions and then begin the activity. **Note:** At the completion of Envelope #1 and #2, instruct the groups to draw a line under their last entry. This eliminates the opportunity to add to their list at a later time.

Discussion Questions

The following questions are provided as a general guide to the types of questions that can be used to stimulate discussion at the end of the activity. They are not meant to be an inclusive listing of all possible questions.

- 1) What instructional procedures can yield feedback?
 - Just about every conceivable instructional procedure can yield feedback if the teacher is aware of it.

- It is interesting to have different groups read their Envelope #1 list and make comparisons (a projector or whiteboard is helpful for this).
- 2) What forms of feedback (messages from learners) provide the most pay-off?
 - This is dependent upon the particular instructional objective.
 - Using Envelope #3 sheet, ask groups to read aloud their five high pay-off forms of feedback. Compare between groups to see what types of feedback they *all* felt had high pay-off.
 - Try and get participants to be specific about how they selected the high pay-off forms of feedback. “Because it’s important” is a very general sort of response. “Because it tells us if the learner is remembering” is more specific.
 - 3) What items were selected for inclusion in Envelope #4?

Was this an easy or hard task? Chances are the group interaction on Envelope #3 brought to mind other items for envelope #2 that had been omitted. If Envelope #4 was an easy task, the group was utilizing feedback from their interaction.
 - 4) How did you feel about this form of activity?
 - Allowing learners an experience-based situation often makes learning more meaningful.
 - Through structured tasks of this nature the learners are able to clarify in their own minds the concerns that they have. It is an opportunity to organize their biases and understandings.
 - 5) Can we develop similar activities (experience-based learning) for our own students? How?
 - Provide an actual or simulated experience or exercise *before* we discuss the topic.
 - Allow learners a chance to try out the topic before they have to react to it at a cognitive level.

Focus on Feedback Envelope #1

Distribute one per team

Good instruction relies heavily on feedback. In an instructional setting we utilize many different procedures that will yield feedback from the learner. A written test, a homework assignment, or a question in class are some of the many procedures that we can use to stimulate feedback.

As a group, enter in the spaces below as many different instructional procedures as you can think of that can be used to provide us with feedback. You have only *10 minutes*, so don't waste any time.

- | | |
|------------------------|-----|
| 1. Written test | 18. |
| 2. Homework assignment | 19. |
| 3. Oral question | 20. |
| 4. | 21. |
| 5. | 22. |
| 6. | 23. |
| 7. | 24. |
| 8. | 25. |
| 9. | 26. |
| 10. | 27. |
| 11. | 28. |
| 12. | 29. |
| 13. | 30. |
| 14. | 31. |
| 15. | 32. |
| 16. | 33. |
| 17. | 34. |

Focus on Feedback Envelope #2

Distribute one per team

Feedback can tell us a lot about our instruction. There are many different messages that an instructional setting can “send” to us in the form of feedback. Some of these messages relate directly to the learner’s thinking ability (cognitive) and some relate more closely to the learner’s feelings (affective).

As a group, enter in the spaces under each column as many different feedback messages as you can think of that a learner might “send” to us. You have only *10 minutes*, so don’t waste any time.

Cognitive Messages

The instruction is . . .

1. Poorly sequenced
2. Too difficult
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.
- 11.
- 12.
- 13.
- 14.
- 15.
- 16.

Affective Messages

The instruction is . . .

1. Annoying
2. Frustrating
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.
- 11.
- 12.
- 13.
- 14.
- 15.
- 16.

Focus on Feedback Envelope #3

Distribute one per team

We tend to be aware of some forms of feedback more than others. Typically, we concern ourselves with those types of feedback that provide us with the most useful information regarding the effectiveness of our instruction.

In the spaces below, write in five feedback messages from your list in Envelope #2 that you feel have the highest pay-off* for your teaching. To the right of each high pay-off feedback message write a possible option that would be available for improving your instruction. Base these options on the particular feedback message.

All five feedback messages and their options *must* have group consensus. You have *10 minutes* for this task.

High Pay-off Feedback Messages

Options Available for Improving Instruction

1.

2.

3.

4.

5.

* “Pay-off” is defined as the use of feedback to make appropriate improvements or adjustments in the instructional experience for a learner. It is concerned with those unambiguous messages that allow you to clearly perceive the success or failure of the instruction.

Focus on Feedback Envelope #4

Distribute one per team

To make effective use of feedback we must examine the message *we* are sending to our learners and modify or change it on the basis of the feedback we have received. In some instances the feedback tells us that our message is okay and we don't have to change it. In other instances our learners tell us through feedback that the message isn't coming through and it must be changed.

No doubt this exercise has stimulated feedback among members of your group. Examine the sheet in Envelope #2. On the basis of the interaction that has occurred within your group during this exercise, write five feedback messages that you *now* feel should have been included on the sheet yet were omitted at the time. In other words, how has feedback within your group altered your list in Envelope #2? You have *5 minutes* for this task.

1.

2.

3.

4.

5.

At the end of this exercise you should be able . . .

- To identify four or more forms of feedback from learners;
- To describe the ways that four or more forms of feedback can be used to modify the design of instructional experiences.

A dramatic landscape photograph of a steep, rocky mountain peak. The rock face is rugged and textured, with a vertical crack running down the right side. A vibrant rainbow is visible in the misty air, arching from the bottom left towards the center. The sky is bright and hazy, with soft clouds. The overall mood is majestic and serene.

Workshop Kit #8
Building a Perceptual-Motor
Experience
Nancy Carlson

Workshop Kit #8

Building a Perceptual-Motor Experience

Nancy Carlson

Overview:

“Designing A Perceptual-Motor Experience”⁹ is a small group activity designed to provide teachers with an opportunity to design, produce and evaluate developmentally-ordered experiences focusing on gross motor activities. Materials used are those generally found in an educational or home environment, but perhaps not identified as useful for such activities. The medium used is the portable recorder. Additional experience is provided during this activity in utilizing an audio recorder to instruct.

Materials:

Provided in Kit:

- Duplicator Page 1—Developmental Activities Summary (one for each group)
- Duplicator Page 2—Evaluation form (one for each person)
- Duplicator Page 3—Instruction Sheet (one for each person)
- Visual Page 1

You will need:

Commonly found materials (one or more for each group); collect materials prior to workshop. Examples of possible materials:

Frisbees	balls (all sizes)	rope (jump rope)	mats (gym type)
large cardboard boxes	ping pong	templates, (shapes, letters)	plastic bottles
used tires	golf	chalkboard	sawhorse
chalk	baseball	empty coffee cans	bean bags
masking tape	beach	butcher paper	rings & ring toss
			hoops

Audiotapes—one per group
Portable audio recorders—one per group
Pencils

⁹ This training kit was developed for a Special Study Institute held in June of 1971. The Institute was conducted under the auspices of the Michigan Department of Education, Special Education Division under support from the U.S. Office of Education, Bureau of Education for the Handicapped. The opinions expressed herein do not necessarily reflect the position or policies of the Michigan Department of Education or the U.S. Office of Education and no official endorsement should be inferred.

Space Requirements:

Seating and tables so that 5-8 participants are seated at each table. If one room is used, it should be a large room such as a gym or cafeteria; otherwise, three small rooms could be used. There must be at least two groups, with no more than eight to a group.

The materials for use should be placed near the tables with sufficient room for participants to move around and experiment with the movement activities.

Prior to the Activity:

Make enough copies of Duplicator Pages 1-3 for distribution. Evaluation Forms must be cut in thirds with one form for each person.

Instructions for Conducting the Activity:Part I (Approximately 45 minutes)

1. Divide participants into groups of 5-8 people seated around a table with one recorder for each group.
2. Each group reads instructions and develops a series of movement activities on the form provided. When they have completed their list they are to record their instructions for each activity.
3. When each person has recorded instructions for his or her individual perceptual-motor activity, the group is finished with Part I.

When all groups have finished Part I, (you may need to nudge them along), proceed to Part II, after a short break if needed.

Part II (Approximately 25 minutes)

1. Have groups move to another table to use the other group's recorded instructions and their material.
2. Each individual is to follow the recorded instructions for one of the activities in the series. Immediately following this individual experience, he or she is to evaluate the particular activity using the Evaluation Form provided.
3. Each group member is to continue until the entire series has been completed.
4. Return Evaluation Forms to original group, allow a few minutes for a review of the Evaluation Forms by the original group.

Part III

Large group discussion. Use Visual Page 1 to structure the discussion.

Designing a Perceptual-Motor Experience

Nancy Carlson
Distribute one per person

Introduction

Perceptual-motor activities often involve large muscle groups. Running, kicking, and jumping, use large muscle groups. In other words, activities that are *not* done at a desk and chair. Large muscle groups are utilized early in the developmental life of a child and remain as a foundation for all of their movement activities throughout later life. You, for instance, may play golf, swim, ski, ride a bicycle, climb stairs or even take out the trash cans. The balance and smooth movement that you show in these activities is *learned*. For most of us, new tasks are easily learned, but for some, learning is difficult and requires a great deal of structure.

Most motor skills are complex tasks. In learning a complex task, it is often necessary to break down the task into its basic component parts and then arrange them in a logical order (sequence) that can be learned. In the case of a motor skill, that order is usually based on many skills previously learned at earlier chronological or developmental stages in life. The previously learned skills in skipping, for instance, are balance on both feet, balance on alternate feet, hopping on one foot, hopping on alternate feet, step-hop on each foot, and finally integrating all of the above skills into skipping. This skill usually develops between the ages of 5 and 7 years.

When dealing with perceptual-motor skills we can categorize or group them according to their level of difficulty or degree of dependence upon previously learned skills. A helpful way of categorizing activities is to describe them as a *simple* activity, an *intermediate* activity, or a *complex* activity.

Instructions to Group

Distribute one per group

Part I:

Using the material provided, your group is to design a *series* of movement activities so that each one of you has a chance to work out one *movement activity*. Assume that the children for whom you are designing are between 3 and 15 years of age. They are clumsy, awkward, have difficulty moving, climbing, jumping, and so on. The activities should range from simple to complex.

For example, if you were given a number of large building blocks, you could ask the youngest and most concrete-oriented child to *carry* one of the blocks to the window or to *place* one block on top of another. On the other hand, you could ask a much older child to *construct* a structure that was twice as high as it was wide, but was two blocks deep. The level of the latter activity is quite abstract, but is still a movement-oriented activity.

In your group, take time now—you have 20 minutes—to decide on a *series* of movement-oriented activities that could be asked of children. Use the Developmental Activities Summary (Duplicator Page 4) to arrange them in developmental order from simple to complex. When you have finished designing and ordering your series of activities, take out your recorder. One by one, each of you is to record instructions so that another person can actually perform the activity. At the beginning of each activity say, “Activity number _____.”

At the end of each activity say, “Now, turn off the recorder.” You will have as many recorded sets of instructions as you have individual activities in your series. Bear in mind, however, that you have only 15-20 minutes to record, which probably means less than two minutes for any one activity in the series.

When you have finished recording, prepare the audio device and materials to be given to another group.

Switch tape and materials with another group

Distribute one per group

Part II

Using the other group's material and recorded instructions, have each member of your group perform one of the activities directed by the recording. After an individual member performs the activity he or she should complete one of the Evaluation Forms.

When you have evaluated the entire series, return the material, recording, and evaluation forms to the original group.

Discuss the evaluations your group has received.

Part III

Large group discussion will follow.

Developmental Activities Summary

Distribute one per group

In the spaces below, enter a brief description of each of the perceptual-motor activities in your series. Provide one entry (activity) for each member in your group. Order the activities with the simplest first and the most complex last.

HINT: Simple activity = very concrete, specific instructions, minimal skills, student should *not* have to think through before doing.
Intermediate activity = still concrete, specific instructions, some abstracts concepts (left, right, up, down, under, and so on.)
Complex activity = abstract, not concrete, involved instructions (concepts), student must think through the activity *before* doing (motor planning).

- | | | | |
|----|------------------------------|--------------------|------------------------|
| 1. | _____ Simple
Description: | _____ Intermediate | _____ Complex Activity |
| 2. | _____ Simple
Description: | _____ Intermediate | _____ Complex Activity |
| 3. | _____ Simple
Description: | _____ Intermediate | _____ Complex Activity |
| 4. | _____ Simple
Description: | _____ Intermediate | _____ Complex Activity |
| 5. | _____ Simple
Description: | _____ Intermediate | _____ Complex Activity |
| 6. | _____ Simple
Description: | _____ Intermediate | _____ Complex Activity |
| 7. | _____ Simple
Description: | _____ Intermediate | _____ Complex Activity |
| 8. | _____ Simple
Description: | _____ Intermediate | _____ Complex Activity |

Evaluation—Perceptual-Motor Activity
Distribute one per group

Activity # _____

- A. Was level appropriate? Why?
- B. Were instructions clear? _____ Yes _____ No
If no, how should instructions be changed?
- C. What changes would you suggest for the activity?
(How can activity be extended, modified, simplified, etc.?)

cut here

Evaluation—Perceptual-Motor Activity # _____

- A. Was level appropriate? Why?
- B. Were instructions clear? _____ Yes _____ No
If no, how should instructions be changed?
- C. What changes would you suggest for the activity?
(How can activity be extended, modified, simplified, etc.?)

cut here

Evaluation—Perceptual-Motor Activity # _____

- A. Was level appropriate? Why?
- B. Were instructions clear? _____ Yes _____ No
If no, how should instructions be changed?
- C. What changes would you suggest for the activity?
(How can activity be extended, modified, simplified, and so on?)

Discussion topics:

1. How easy was it to categorize the complexity level of the activity?
2. What is the value of sequentially ordering motor skills?
3. How can motor skills be emphasized in the school program?
4. How does motor skill training relate to academic achievement?
5. To what extent were the recorded instructions clear?
6. How can audio recorders be used to instruct?