DOCUMENT RESUME

ED 100 923 SP 008 853

AUTHOR Wilkins, Phelps; And Others
TITLE Developing Tools for Accountability: Shaping and Writing Performance Objectives from the Perspective of a Needs Assessment.
INSTITUTION Mesa Public Schools, Ariz.
PUB DATE Mar 71
NOTE 33p.

EDRS PRICE MF-$0.75 HC-$1.85 PLUS POSTAGE
DESCRIPTORS *Educational Accountability; *Educational Objectives; *Learning Activities; *Performance Based Teacher Education; Performance Criteria; *Teacher Education
IDENTIFIERS *Learning Modules

ABSTRACT

This packet is concerned with the problem of choosing and writing educational goals and objectives and the determination of goal achievement with emphasis on: (a) the determining valid goals and objectives; (b) stating goals and objectives in terms that are measurable; and (c) measuring the achievement of goals and objectives. Section one reviews making an assessment of needs and selecting those needs relevant to the school. Section two aids in classifying educational objectives and stating them in measurable terms, while section three reviews relating content, objectives, and test items and selecting evaluative instruments. (MJM)

MESA PUBLIC SCHOOLS

DEVELOPING TOOLS FOR ACCOUNTABILITY: SHAPING AND WRITING PERFORMANCE OBJECTIVES FROM THE PERSPECTIVE OF A NEEDS ASSESSMENT

by
Phelps Wilkins
Holmes Elementary School

In cooperation with:

George N. Smith, Superintendent
Mesa Public Schools

James Zaharis, Director
Center for Educational Advancement

Fenwick English, Director
Arizona-Mesa Differentiated Staffing Consortium

March 12-13, 1971

TABLE OF CONTENTS

INTRODUCTION

Accountability implies:

1. Predetermined goals (accountability for what?),
2. Delegation of responsibility (who is accountable?),
3. Determination of goal achievement (evaluation).

The purpose of this packet is to assist educators in developing goals and objectives within their schools that will improve education for students. This packet is primarily concerned with the problem of choosing and writing educational goals and objectives and with the determination of goal achievement with emphasis on the following questions:

1. How do we determine valid goals and objectives?
2. How do we state goals and objectives in terms that are measurable?
3. How do we measure the achievement of goals and objectives?

SELECTING GOALS AND OBJECTIVES

I. Making A Needs Assessment

Education is attempting to meet the needs of society, needs of learners, and needs of educators and to be responsive to requirements placed upon us by those we strive to serve. A need here is defined as the discrepancy between what is and what is required - a definition that indicates that a need is a measurable difference or distance between a present state or condition and what is required to be accomplished.*

*Definition of needs by Roger Kaufman, United States International University, San Diego, California.

Example

A. What is:

On January 1, 1971, 50 per cent of the students at Jones School were reading more than a year below grade level as measured by the Gates-McGintee reading test.

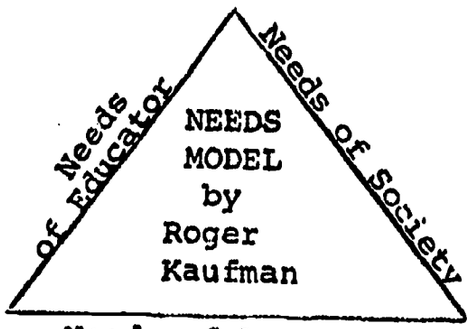
B. What is required:

Eighty per cent of the students at Jones School reading within one year of grade level as measured by the Gates-McGintee reading test.

C. Measurable Discrepancy:

Thirty per cent of students at Jones school scored outside tolerances.

As stated above, a valid needs assessment must include the needs of learners, needs of educators and the needs of society. The exclusion of any of these would lead to warped interpretation of needs.



Needs may be identified through a process called need assessment wherein all discrepancies are identified relative to a given area (such as within a specified school district or a community) and priorities placed on each of the needs relative to one another. This need assessment procedure will increase the probability of obtaining valid needs and thus relevant problems

which will allow the educators to reduce or eliminate the "true needs. (Kaufman)

In order to complete a needs assessment it is imperative that a systematic approach be used. Some educators have found system analysis to be a useful tool. A system may be defined as the "sum total of separate parts working independently and in interaction to achieve previously specified objectives". (Kaufman) Education may be viewed as a system; some of the components being: teaching and instruction, management and administration, facilities and support, community and learners. Each of these parts, when considered alone, may be classified as individual systems.

An important part of system analysis is the mission profile. The path getting from what is to what is required is called the mission profile. Each problem will have a different mission profile depending on what is and what is required. The mission profile is usually arranged in a functional flow block diagram such as shown on page 5.

The first step in preparing the mission profile is to state the mission objective. The mission objective is a statement of where we are going and how we know when we have arrived; that is, the requirements for satisfactory completion of the mission.

Example

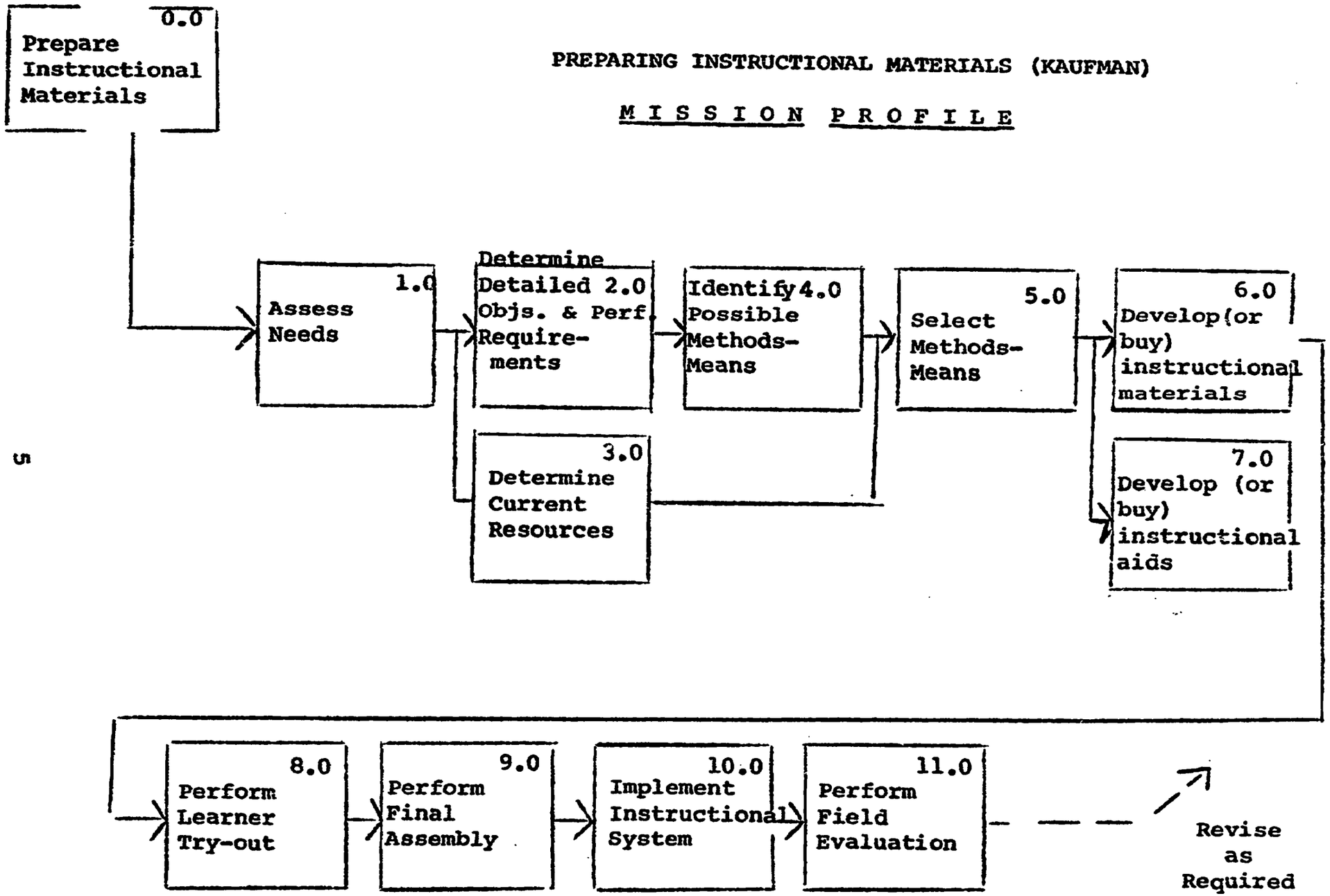
Mission Objective; 0.0

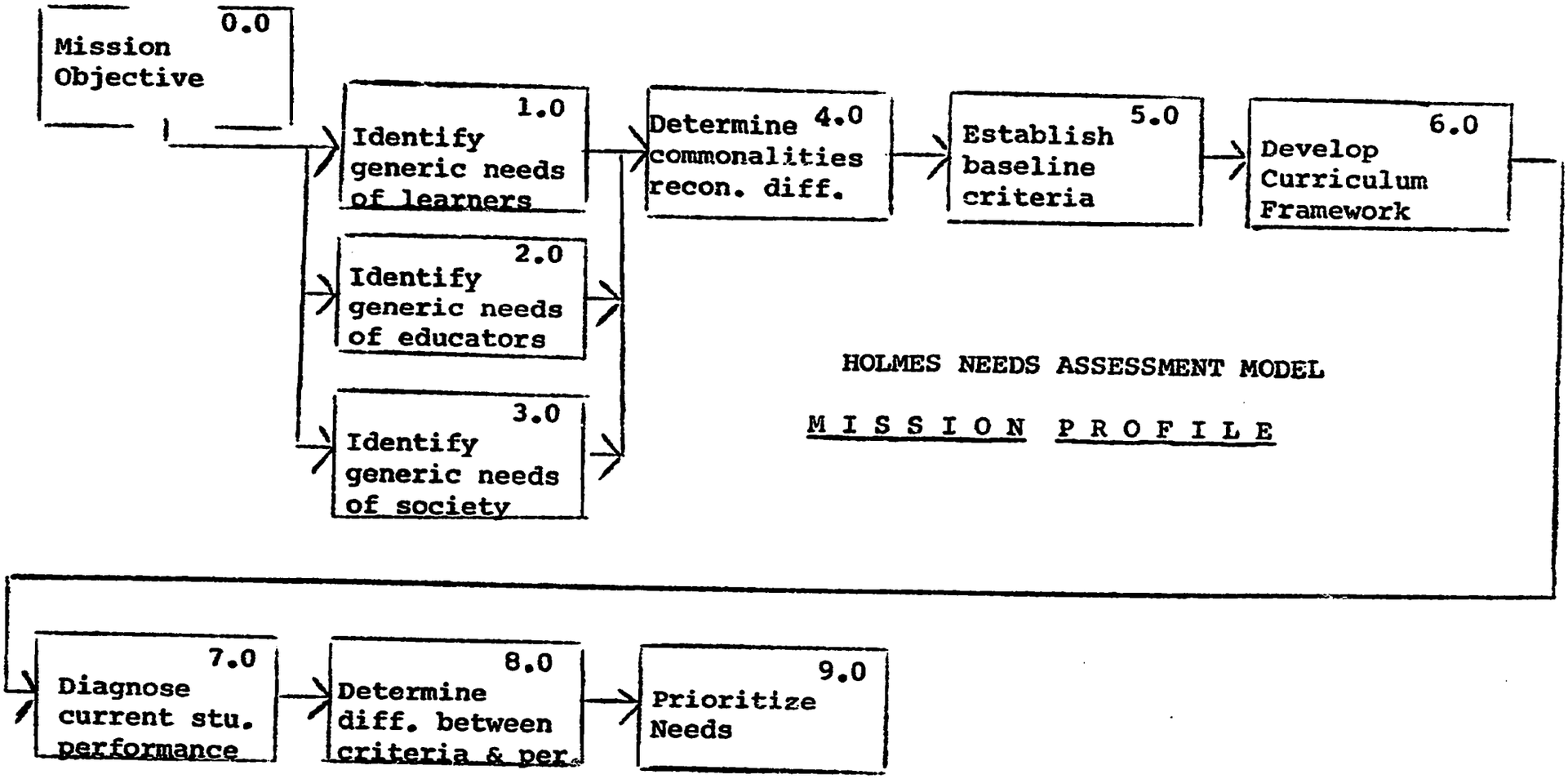
By January 1, 1972 a needs assessment of Jones School shall be completed. This assessment will include the needs of learners, needs of educators, and the needs of society. At the completion of this assessment a prioritized list of needs will have been completed.

After stating and defining our objective and reconciling constraints, a constraint is anything that will prevent the accomplishment of the mission objective in whole or in part, each step necessary to complete the objective must be identified and put in sequence. The diagrams on the following pages are examples of mission profiles.

PREPARING INSTRUCTIONAL MATERIALS (KAUFMAN)

MISSION PROFILE





HOLMES NEEDS ASSESSMENT MODEL

MISSION PROFILE

Identify a need, real or hypothetical, by stating below what is and what is required.

WHAT IS	WHAT IS REQUIRED

Now write your need in the form of a mission objective, stating the requirement for satisfactory completion.

Mission Objective:

In the space below develop a mission profile for the objective stated on the previous page.

II. Selecting Needs Relevant to Schools

After the completion of the needs assessment it will be necessary to select needs with top priority and allocate personnel and resources necessary for their solution. Chances are that most schools will not be able to prepare programs to meet all identified needs; therefore, they must select those needs which are most appropriate for the school to solve and hope that family, church, community will help solve the rest.

THE STATEMENT OF GOALS AND OBJECTIVES IN MEASURABLE TERMS

I. Classification of Educational Objectives

Many taxonomies for the classification of educational objectives have been developed to assist educators in dealing with the nearly unmanageable number of educational objectives. Shown below and on following pages are three taxonomies: these taxonomies are representative of the types of taxonomies available to the educator.

AAAS Six category taxonomy*

This taxonomy is based on learner overt behavior. One of the problems with this taxonomy is that considerable overlap exists because the same learner behavior may be classified onto any one of several different categories.

1. Identify
2. Name
3. Describe
4. Construct
5. Order
6. Demonstrate

*American Association Advancement Science

Taxonomy of Cognitive Operations (John Lembo)

This taxonomy is a list of recognizable behaviors. It should also be noted that while the operations presented here ordered from simple to more complex, it should not be interpreted that the operations are in the form of an ascending chain of prerequisites. (Lembo comments)

1. Identifying
2. Defining
3. Describing
4. Summarizing
5. Classifying
6. Comparing and contrasting
7. Transforming
8. Explaining deductively
9. Explaining inductively
10. Formulating and testing hypotheses
11. Evaluating

Bloom's and Krathwohl's Taxonomy

Below and on following pages is a description of Bloom's and Krathwohl's taxonomy. This taxonomy will be used and referred to during the rest of the packet. Bloom and Krathwohl divide educational objectives into three categories: cognitive, affective, and psychomotor. Under each category is a list of verbs often used to write objectives at that particular level.

Cognitive Domain

This domain covers all objectives concerned with the intellectual processes of the learner. The vast majority of educational objectives employed in schools belong to this domain.

1. Knowledge - is defined as the remembering of previously learned material. This may involve the recall of a wide range of material, from specific facts to complete theories, but all that is required is the bringing to mind of the appropriate information.

Verbs often used at the knowledge level:

defines	describes	identifies	labels
lists	matches	names	outlines
reproduces	selects	states	

2. Comprehension - is defined as the ability to grasp the meaning of material. This may be shown by translating material from one form to another (words to numbers) by interpreting material (explaining or summarizing), and by estimating future trends (predicting consequences or effects).

Verbs often used at the comprehension level:

converts	defends	distinguishes	estimates
explains	extends	generalizes	gives examples
infers	paraphrases	predicts	rewrites
summarizes			

3. Application - refers to the ability to use learned material in new and concrete situations. This may include the application of such things as rules, methods, concepts, principles, laws, and theories.

Verbs often used at the application level:

changes	computes	demonstrates	discovers
manipulates	modifies	operates	predicts
prepares	produces	relates	shows
solves	uses		

4. Analysis - refers to the ability to break down material into component parts so that its organization structure may be understood. This may include the identification of the parts, analysis of the relationships between parts, and recognition of the organizational principles involved.

Verbs often used at the analysis level:

breaks down	diagrams	differentiates	discriminates
distinguishes	identifies	illustrates	infers
outlines	points out	relates	selects
separates	subdivides		

5. Synthesis - refers to the ability to put parts together to form a new whole. This may involve the production of a unique communication (theme or speech), a plan of operations (research proposal), or a set of abstract relationships (scheme for classifying information).

Verbs often used at the synthesis level:

categorizes	combines	compiles	composes
creates	devises	designs	explains
generates	modifies	organizes	plans
rearranges	reconstructs	relates	reorganizes
revises	rewrites	summarizes	tells
writes			

6. Evaluation - is concerned with the ability to judge the value of material (statement, novel, poem, research report) for a given purpose. The judgments are to be based on definite criteria. These may be internal criteria (organization) or external criteria (relevance to the purpose) and the student may determine the criteria or be given them.

Verbs often used at the evaluation level:

appraises	compares	concludes	contrasts
criticizes	describes	discriminates	explains
justifies	interprets	relates	summarizes
supports			

Cognitive classification by: Bloom, B.S., ed., et al. Taxonomy of Educational Objectives: Cognitive Domain. New York: David McKay, Inc., 1956.

Lists of verbs by: Gronlund, Norman E., Stating Behavioral Objectives for Classroom Instruction. Toronto: The Macmillan Company Collier-Macmillan Limited, 1970.

Affective Domain

This domain covers attitudinal, emotional, and valuing behaviors of learners, reflected by interests, appreciations, etc. This is a more nebulous area than the cognitive domain, but equally, if not more, important.

1. Receiving - the learner is sensitized to the existence of certain phenomena and stimuli.

Verbs often used at the receiving level:

asks	chooses	describes	follows
gives	holds	identifys	locates
names	points to	selects	sits erect
replies	uses		

2. Responding - responding refers to active participation on the part of the student. At this level he not only attends to a particular phenomenon but also reacts to it in some way.

Verbs often used at the responding level:

answers	assists	complies	conforms
discusses	greets	helps	labels
performs	practices	presents	reads
recites	reports	selects	tells
writes			

3. Valuing - valuing is concerned with the worth or value a student attaches to a particular object, phenomenon, or behavior.

Verbs often used at the valuing level:

completes	describes	differentiates	explains
follows	forms	initiates	invites
joins	justifies	proposes	reads
reports	selects	shares	studies
works			

4. Organization - organization is concerned with bringing together different values, resolving conflicts between them and beginning the building of an internally consistent value system.

Verbs often used at the organization level:

adheres	alters	arranges	combines
compares	completes	defends	explains
generalizes	identifies	integrates	modifies
orders	organizes	prepares	relates
synthesizes			

Affective Classification by: Krathwohl, David R., Taxonomy of Educational Objectives: Affective Domain, New York: David McKay Co., Inc., 1964.

Lists of verbs by: Gronlund, Norman E., Stating Behavioral Objectives for Classroom Instruction. Toronto: The Macmillan Company Collier-Macmillan Limited, 1970.

Psychomotor Domain

The psychomotor domain includes objectives concerned with physical skills.

1.0 Perception - the essential first step; the process of becoming aware of objects, qualities, or relations by way of sense organs.

1.1 Sensor Stimulation - the impingement of a stimulus upon one or more of the sense organs.

1.2 Cue selection - identification of the cue or cues and associating them with the task to be performed.

1.3 Translation - relating of perception to action in performing a motor act: the mental process of determining the meaning of the cues received for action.

2.0 Set - a preparatory adjustment or readiness for a particular kind of action or experience.

2.1 Mental Set - readiness in the sense of having made the anatomical adjustments necessary for a motor act to be performed.

2.2 Emotional Set - readiness in terms of attitudes favorable to the motor acts. Willingness to respond is implied.

3.0 Guided response - an early step in the development of skill. Emphasis is upon the abilities which are components of the more complex skill.

3.1 Imitation - the execution of an act as a direct response to the perception of another person performing the act.

3.2 Trial and error - trying various responses, usually with some rationale for each response, until an appropriate response is achieved.

4.0 Mechanism - the habituation of a learned response. At this level, the learner has achieved a certain confidence and degree of skill in performance of the act.

5.0 Complex overt response - the individual can perform a motor act that is considered complex because of the movement pattern required; a high degree of skill has been attained; the act can be carried out smoothly and efficiently.

5.1 Resolution of uncertainty - the act is performed without hesitation; the individual knows the sequence required and so proceeds with confidence.

5.2 Automatic performance - the individual can perform a finely coordinated skill with a great deal of ease and muscle control.

The taxonomy for the psychomotor domain was developed by: Elizabeth Jane Simpson, "The Classification of Education Objectives, Psychomotor Domain" (Project Report, University of Illinois, 1966)

II. Stating Objectives in Measurable Terms

There are many ways to write behavioral objectives. Much has been said about how to write objectives and what should be included in them. This packet will explore two approaches. Although these approaches are similar in many ways, they have important differences. Both types are useful but for different kinds of instruction.

A. Writing objectives for individualized or programmed instruction

Behavioral objectives written for individual students to use usually include the first three and sometimes the fourth of the following elements: (1) overt behavior, (2) performance standard, (3) conditions, and (4) the doer.*

The student will list on paper the name, years in office and birthdate of the four presidents preceding President Nixon within five minutes and with no errors:

1. Overt behavior - list (on paper),
2. Performance standard - no errors,
3. Conditions - within five minutes,
4. The doer - student.

---

*Frase, Larry, "Behavioral Objectives Panacea or Holocaust", March, Talbert, Gene 1971, Audiovisual Instruction.

Given a musical score, the learner will play the score to the extent that the teacher can recognize the piece.

Identify the following elements in the objective stated above.

1. Overt behavior_____

2. Performance standard_____

3. Conditions_____

4. The doer_____

Write an objective that includes the four elements.

_____

_____

_____

_____

One of the criticisms often leveled at behavioral objectives is that they tend to be written at the recall (memorization) level and ignore the more sophisticated levels of cognition. It is imperative that educators write objectives at all levels of the taxonomy (Bloom) both in the cognitive and affective domain.

On the following page are examples written at all levels of the cognitive domain. See if you can identify at which level the objectives were written.

1._____When given a multiple choice test containing ten important facts mentioned in the story, "Station in Space," the student will correctly choose nine out of ten answers.

2._____Having read "Station in Space," the student will be presented with three paragraphs from the story. In each of these paragraphs there is one added sentence that does not relate to the rest of the paragraph. The student will with 100 per cent accuracy underline the unrelated sentence in each of the three paragraphs.

3._____When given three descriptions of the outward appearance of a space station, and asked to identify the one described in the story, the student will choose the correct one.

4._____After reading the selection, the student will be able to organize the details of the story under these headings: Provision of Food, Shelter, Clothing, Air, and Water.

5._____Whena sked, the student will briefly describe, using diagrams or words, how the engineers will assemble the space station and provide for their immediate needs.

6._____After reading "Station in Space," the child will be able to write a fictional space station story with characters and their subsequent exploration adventures.

ANSWERS:

1. Knowledge,
2. Application,
3. Evaluation,
4. Analysis,
5. Comprehension,
6. Synthesis.

Indicate which level of the affective domain each objective below is most closely related to.

1._____After reading and discussing the story the student will volunteer to debate (pro or con) the subject, "Resolved: Stations in space are a prerequisite to future space exploration."

2._____Given the opportunity, the learner will give three reasons why he would or would not wish to be a space scientist experimenting in outer space.

3._____After reading "Station in Space," the student will be alert toward the vast changes which space travel may bring to our world.

4._____The student will demonstrate his belief in the necessity and value of wide reading by:

a. Electing to read more often than to engage in another activity during his spare class time.

b. A 50 per cent increase in the number of books read as reported on his chart.

c. A 50 per cent increase in the number of voluntary book reports he makes to the class.

ANSWERS:

1. Responding,
2. Organization,
3. Receiving,
4. Valuing.

B. Writing objectives for classroom and group instruction

A second kind of performance objective, Gronlund calls them "general instructional objectives", are useful when trying to state objectives for group activities or general classroom instruction.

These objectives have two parts: (1) A statement of learning outcomes, (2) samples of specific behavior.

Example 1.0 Understands the meaning of technical terms.

1.1 Defines the term in his own words
1.2 Identifies the meaning of the term when used in context
1.3 Distinguishes between terms that are similar in meaning

Stating the general instructional objective first and then clarifying it further by listing the types of specific behavior that characterize the objective is more than a matter of literary form. This procedure makes cleqr that the instructional objective is understanding and not defining, identifying, or distinguishing between. These latter types of behavior could serve equally well.*

The first step in defining instructional objectives is to state the general learning outcomes we expect from our teaching. This step sounds simple enough, but most teachers find it difficult. They tend to focus on the teaching process, the learning process, or on the expected outcomes of instruction. Teachers also have some difficulty stating the objectives at a satisfactory level of

---

*Gronlund, Norman, Stating Behavioral Objectives for Classroom Instruction.

generality; that is, of striking a happy medium between broad, undefinable statements and long, unmanageable lists of specific types of behavior. Let's first take a look at some of the common errors to avoid in stating instructional objectives.

Place an X next to the statement that avoids the noted errors.

Describing teacher behavior rather than student behavior

_____1. Comprehends assigned reading material
_____2. To increase the student's ability

Stating objectives in terms of the learning process rather than as a learning product

_____3. Gains knowledge of basic principles
_____4. Applies basic principles to new situations

Lists subject matter to be covered

_____5. Principles of electricity
_____6. Understands basic principles

Includes more than one type of learning outcome in each general objective

_____7. Uses appropriate experimental procedures in solving problems
_____8. Knows the scientific method and applies it effectively

States instructional objectives either too broadly or too limited

_____9. Communicates effectively in English
_____10. Writes clear, effective English
_____11. Punctuates sentences properly

ANSWERS: The correctly stated statements are: 1, 4, 6, 7, and 10.

After a tentative list of instructional objectives has been identified, the next step is to define each objective in terms of specific learning outcomes, that is, to identify and list under each objective a representative sample of specific types of behavior that are to be used as evidence that the objective has been achieved.

Example

Knows specific facts (American History)

1. Identifies important dates, events, places, and persons
2. Describes the characteristics of a given historical period
3. Lists important events in chronological order
4. Relates events to their most probable causes

Note that each specific learning outcome starts with a verb that indicates specific behavioral reactions the student is to exhibit as evidence that he has achieved the general instructional objective.

To check your ability to distinguish between behavioral and nonbehavioral terms look at the following few statements. Place an X next to those that are written in behavioral terms.

_____1. Realizes the importance of neatness

_____2. Explains the importance of neatness

_____3. Predicts the outcome of an experiment

_____4. Sees the value of an experiment

_____5. Distinguishes between facts and opinion

_____6. Appreciates good literature

_____7. Describes the difference between good and poor literature

---

ANSWERS: Statements written in behavioral terms are 2, 3, 5, and 7.

MEASURING THE ACHIEVEMENT OF GOALS AND OBJECTIVES

The third step in accountability is the determination of goal achievement. The primary consideration is to assess what degree of progress has been made to meeting the predetermined goals and objectives. The question always arises: "What is acceptable evidence?"

There are many types of measuring instruments available to educators today, the problem is in choosing or developing the correct type of instrument or technique to measure the many kinds of goals and objectives.

I. Relating Content, Objectives and Test Items

Gronlund has developed a valuable technique to help relate behavior, test items and content. The first step is to develop objectives for a unit of study. The example on the following page is a unit on economics but with little change they could apply to many units of study. It is also important to note that the objectives are well distributed over most of the levels in Bloom's cognitive taxonomy.

After developing the objectives for the unit Gronlund suggests that an outline of content for the unit be made. The example on page 25 is an outline of content for a unit in economics.

Next a table of specifications is prepared which relates the instructional objectives to the course content.

Objectives for a Unit in Economics

1. Knows basic terms

   1.1 Relates terms that have the same meaning
   1.2 Selects the term that best fits a particular definition
   1.3 Identifies terms used in reference to particular economic problems
   1.4 Uses terms correctly in describing economic problems

2. Understands economic concepts and principles

   2.1 Identifies examples of economic concepts and principles
   2.2 Describes economic concepts and principles in his own words.
   2.3 Points out the interrelationship of economic principles
   2.4 Explains changes in economic conditions in terms of the economic concepts and principles involved

3. Applies economic principles to new situations.

   3.1 Identifies the economic principles needed to solve a practical problem
   3.2 Predicts the probable outcome of an action involving economic principles
   3.3 Describes how to solve a practical economic problem in terms of the economic principles involved
   3.4 Distinguishes between probable and improbable economic forecasts

4. Interprets economic data

   4.1 Differentiates between relevant and irrelevant information
   4.2 Differentiates between facts and inferences
   4.3 Identifies cause-effect relations in data
   4.4 Describes the trends in data
   4.5 Distinguishes between warranted and unwarranted conclusions drawn from data
   4.6 Makes proper qualifications when describing data

Content Outline for a Unit in Economics

Money and Banking

A. Forms and functions of money

1. types of money
2. various uses of money

B. Operation of banks

1. services provided by commercial banks
2. other institutions offering banking services
3. role of banks in managing the flow of money

C. Role of the federal reserve system

1. need for flexibility in the money supply
2. nature of the federal reserve system
3. regulatory policies influencing the money supply

D. State regulation of banks

1. the state banking commission
2. laws to protect the borrowers

The table makes it possible to classify each test item in terms of both objectives and content. A completed table describes the number of test items needed to obtain a balanced measure of the instructional objectives and the course content emphasized in the instruction. A sample table of specification based on an illustrative unit in economics is shown on page 26.

The next task is to construct test items that are relevant to the instructional objectives and content areas of each cell. The procedure is as follows: (1) to select one of the specific learning outcomes listed under the first objective,

TABLE VIII. Table of Specifications for a 50-Item Test on a Unit in Economics (Money and Banking)

Content Areas	Instructional Objectives: Knows Basic Terms	Understands Concepts and Principles	Applies Principles	Interprets Data
A. Forms and functions of money	3	4	3	
B. Operation of banks	4	3	5	3
C. Role of the Federal Reserve System	4	6	3	2
D. State regulation of banks	4	2	4	
Total number of test items	15	15	15	5

(2) to select one of the important banking terms, and (3) to construct a test item that calls for the specific behavior indicated in the learning outcome. Test items should clearly reflect the desired learning outcome, as follows:* (see next page)

*Gronlund, Norman, Stating Behavioral Objectives for Classroom Instruction, pg. 43.

(1) Instructional Objective: 1. Knows basic terms

Learning Outcome: 1.1 Relates terms that have the same meaning

1. Checking accounts are also called: A*. Demand deposits
   B. Time deposits
   C. Currency
   D. Credit money

(2) Instructional Objective: 2. Understands economic concepts and principles

Learning Outcome: 2.1 Identifies examples of economic concepts

1. Which one of the following is an example of commercial credit?

   A*. A manufacturer borrows money to buy raw materials
   B. A manufacturer borrows money to build a new plant
   C. A business executive borrows money to build a new home
   D. A stockbroker borrows money to buy stocks and bonds

(3) Instructional Objective: 3. Applies economic principles to new situations

Learning Outcome: 3.1 Predicts the possible outcome of an action involving economic principles

A*. Buying government bonds on the open market
B. Raising the reserve requirements
C. Raising the discount rate
D. Lowering the amount of credit granted to member banks

II. Selecting evaluative instruments

In order to become accountable in as many areas of the curriculum as possible it is necessary to identify as many different kinds of objective evaluative instruments as possible. After identifying the instruments it is necessary to match the instrument to the type of performance to be measured. Listed below and on the following pages are different types of evaluative instruments.

1. Standardized tests - a standardized test is given to a specified group of pupils and the results reported in organized fashion (tables of norms) so that students may be compared with the normed group.

2. Criterion/referenced tests - usually locally designed to measure a learner's status with respect to a specified performance standard at the local level.

3. Rating Scales - instruments constructed to measure performance, attitude, interest, character or personality. A rating scale allows classification along a continuum of either frequency of occurence (always, usually, occasionally, never) or intensity (strongly agree, mildly agree, undecided, mildly disagree, strongly disagree) of reactions or behaviors.

4. Checklist and Questionnaires - checklist is a list of subjects or statements to which only two responses are possible.

5. Anecdotal Report - is the systematic writing down of observations of pupil behavior that cannot be measured or classified by more formal tests. This can be used as evidence of goal attainment even on the basis of random sample.

6. Oath - the taking of an oath is used in legal process as a measuring of ascertaining truth. Could this be applied to the educational system as acceptable evidence (i.e. "what I say is true")?

7. Petition or Testimony - this is used as evidence in many of the institutions of our land as acceptable evidence. Could we take a petition of 10,000 people who testify to the effectiveness of a program?

8. Jury System or Hearings - a panel of experts or jurors who would hear all the evidence regarding a program and render a judgment that it was acceptable and met its goals.

9. Independent educational audit - is an external review procedure by qualified outside technical personnel who are not directly involved (unbiased) in the actual operation of a program. The audit is used to (1) verify results of program, (2) to assess the degree a program has reached its prescribed goals (3) suggest plans for improvement.

In the chart below list the types of evaluative instruments that might be used to measure the specified behavior.

Types of Behavior (learning outcomes)	Possible Evaluative Instruments
Application Concept Acquisition Memorization of facts Problem solving Reading Comprehension Skills (number etc.)	
Performance	
Classroom Behavior	
Interests	
Attitude	
Aspiration level	
Adjustment	