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ABSTRACT

This handbook deals with the specifics of integrating teaching and testing in the context of high school classes. It is part of a school-based staff development program for high school teachers and is designed to have faculty members in a department work as a team. Colleagues are asked to help one another develop instructional units and courses that effectively integrate teaching, testing, and the use of test information. The program is divided into a basic training program and an advanced training program. The basic program focuses on six essential teaching/testing practices: (1) formulating learning goals in a unit of instruction, and determining the emphasis each is to receive in instruction and assessment; (2) developing an assessment plan for the unit; (3) matching tests and other assessment procedures to the learning goals, and assuring quality in test design; (4) setting and applying standards for goal attainment; (5) providing feedback to students and suggesting ways that learning may be improved; and (6) adapting instructional plans and procedures to accommodate student progress. In the advanced program, these practices are extended to the design of courses, and working with slow and fast learning students. The program also addresses the issues of grading, course evaluation, and translation of goal-based course plans into course descriptions for students and parents. (JD)

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INTEGRATING TEACHING AND TESTING

A SCHOOL-BASED STAFF DEVELOPMENT PROGRAM FOR IMPROVING THE QUALITY OF INSTRUCTION IN HIGH SCHOOLS

A Resource Guide for Teachers

Field Test Copy

The Oregon Educational Cooperative Press

1985

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The staff development program on integrating teaching and testing was developed by Dr. Del Schalock and Dr. Glen Fielding of the Teaching Research Division of the Oregon State System of Higher Education. It builds on a long history of work in Oregon on the integration of teaching and testing, and on the design of school-based staff development programs. It also builds on the extensive work of the Valley Education Consortium in both of these areas.

The program was developed under contract with the National Institute of Education. All responsibility for the organization and content of the program, however, rests with the authors.

CONTENTS

A NOTE TO TEACHERS

This resource guide is part of a school-based staff development program for high school teachers. You have received a copy of the guide because your superintendent and principal have decided to make the program available to teachers in your school.

The staff development program is likely to be a new experience for you in two ways. The first is the subject matter with which you will be dealing. Classroom testing, and the use of test information to improve instruction, typically does not receive a lot of attention in teacher preparation programs.

The second is the way in which the program operates. It takes place in your school, and is carried out largely by you and your colleagues. The program requires that each department identify a "lead teacher" to work with your principal and department chair in planning and carrying out the program.

The program also is designed to have faculty members in a department work as a team. Colleagues are asked to help one another develop instructional units, and then courses, that effectively integrate teaching, testing and the use of test information.

The staff development program is divided into a 2-day BASIC training program and a 3-day ADVANCED training program. The basic program takes as its focus six essential teaching/testing practices:

1. Formulating learning goals for students in a UNIT of instruction, and determining the emphasis each is to receive in instruction and assessment;

2. Developing an assessment plan for the unit;

3. Matching tests and other assessment procedures to these learning goals, and assuring quality in test design;

4. Setting and applying standards for goal attainment;

5. Providing feedback to students that highlights what has and has not been learned, and suggests ways that learning might be improved; and

6. Adapting instructional plans and procedures to accommodate student progress toward these learning goals.

To give added coherence to these interrelated practices they are introduced in the context of "mastery learning" as an approach to instruction

In the basic training program these practices are addressed only in the context of instructional units. In the advanced training program they are extended to the design of courses, and to work with both slow and fast learning students within courses. The advanced training program also addresses the r ·ted issues of grading, course evaluation and the translation of goal-based course plans into course descriptions for

students and parents.

In both the basic and advanced training programs considerable attention is given to using assessment information. Attention also is given to the influence that expectations have on the design of assessment procedures and feedback strategies.*

Both the basic and advanced training programs have been designed around a recently developed **Handbook for Integrating Teaching and Testing in the High School.** This Handbook is the primary instructional resource for both training programs.

A word of caution. The content of the training program is demanding, and the skills to be mastered are complex. Moreover, the teaching/testing practices that are the focus of the program, if implemented, will fundamentally alter the nature of the relationship between you and your students. The program is designed to support a goal-based, "mastery learning" approach to instruction, and for such an approach to be effective most teachers and most schools have to function quite differently than they do now.

The point of this last comment is that as you become involved in the program you may find it to be effective, and potentially beneficial, but you may not be able to implement the practices proposed because of current policies or practices in your school. If this is the case you and your school administrators will need to see whether these conditions can be changed, or whether the teaching/testing procedures that are being proposed can be modified to fit existing conditions.

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*When a district decides to make the BASIC (2-day) staff development program available to faculty in a school there is no obligation that all faculty take part, or that the ADVANCED training program be offered. In fact, districts are encouraged to try the basic program initially with faculty from only one or two departments. If the program works well, and faculty view it as being helpful, it can be expanded to include faculty from other departments. It also could be expanded to include the advanced training program as well.

INTRODUCTION

Contents

WHAT DOES THE INTEGRATION OF TEACHING AND TESTING MEAN?

A simple answer is that it means essentially what the words imply, provided the word testing is viewed broadly. As used in this Guide, testing refers to any and all FORMAL MEANS a teacher has for obtaining evidence that can be shared publically on where students stand with respect to desired learning goals. This includes all forms of **objective tests** (both teacher made and published), essay questions and other forms of assessment that require students to **prepare products**, and **structured observation of performance.** It does not include INFORMAL MEANS of assessment, such as responding to the strengths and weaknesses of a student's argument in response to a question, or spotting and correcting an error a student has made while working toward the solution of a mathematics problem.

When used in this way testing refers to the planned and carefully structured assessment of student progress toward learning goals.

The **integration of teaching and testing** is the systematic use of assessment information in planning and guiding instruction. It includes:

- being clear about the learning outcomes desired from instruction, and matching both instructional practices and assessment procedures to these outcomes;
- being clear about where students stand with respect to outcome attainment, and adapting instructional materials and procedures to accommodate student differences in relation to outcome attainment; and
- it means providing remedial assistance to students who are having difficulty learning, providing more time for students who learn slowly, and providing enrichment activities or advanced topics for students who learn quickly.

In essence the integration of teaching and testing is a process whereby student progress toward learning goals is continuously monitored and acted upon in order to provide an optimum environment for learning. Testing is one important means by which the monitoring of student progress toward goal attainment is carried out.

WHAT DOES IT TAKE TO EFFECTIVELY INTEGRATE TEACHING AND TESTING IN A SCHOOL?

Most of all it takes teachers and building administrators who understand what the integration of teaching and testing means, and who have the skills needed to do it.

For teachers and building administrators to effectively integrate teaching and testing practices in their schools, however, it is essential that central office administrators and local boards of education support them in doing so. This support needs to take the form of both resources and technical assistance for implementation,

and policy statements that signal to all concerned the commitment of the district to such practices.

Without this kind of support changes in school practices of the kind that come with the integration of teaching and testing will either not occur or not be able to be sustained over a long period of time.

In addition to policies, resources and technical assistance a number of other conditions must be present for the effective integration of teaching and testing to occur:

1. Both teachers and students are clear about the learning outcomes to be accomplished through a unit or course of instruction;

2. Teachers are clear about where students stand with respect to achieving these intended outcomes;

3. Instructional materials and procedures, and time for learning, can be varied to accommodate student differences with respect to progress toward outcome mastery;

4. Assessment procedures are appropriate to both the learning outcomes to be assessed and the use(s) to be made of assessment information;

5. Assessment procedures are applied properly, and at an appropriate point in time, given the purposes the assessment information is to serve; and

6. The information obtained through these procedures is available when it is needed and is provided in a form that makes it easy to use.

WHY SHOULD THE INTEGRATION OF TEACHING AND TESTING BE LINKED TO THE CONCEPT OF MASTERY LEARNING?

It does not need to be, but since the integration of teaching and testing practices meets so many of the conditions required for mastery learning, thinking about these practices in the context of mastery learning gives them added potential for the improvement of instructional programs.

Even though this view underlies and gives direction to the staff development program, neither the BASIC nor the ADVANCED training program directs a great deal of attention to mastery learning per se. References are provided to the growing literature on mastery learning, and the basic concepts of mastery learning are discussed, but the adoption of a fully developed mastery approach to instruction is not a prerequisite to either participation in the staff development program or the adoption of practices that integrate teaching and testing in your school.

WHY SHOULD A SCHOOL-BASED STAFF DEVELOPMENT PROGRAM ON INTEGRATING TEACHING AND TESTING BE ESTABLISHED FOR TEACHERS AND SCHOOL ADMINISTRATORS?

For four reasons. First, it is easier to deal with the policy issues that affect the integration of teaching and testing when they are dealt with on a school or department-wide basis than individually. As indicated previously, the effective integration of teaching and testing fundamentally alters the nature of the relationship between teachers and students, and if a change of this kind is to occur it not only requires the support and assistance of colleagues but usually the support and sanction of a district as a whole.

Second, it is essential that curriculum related issues accompanying the integration of teaching and testing be dealt with on a school or department-wide basis rather than by teachers individually. The perennial issues of what is to be learned, how well it is to be learned, and how to assign grades to reflect the level of learning that has occurred assume such prominence when integrating teaching and testing that they need to be resolved collectively.

Third, staff development programs that have as their aim the improvement of practices or procedures that occur in a school seem to be most effective when they take place in the school, and involve the participation of all who have anything to do with selecting and implementing the change that is to occur.

Fourth, colleagues helping colleagues is not only an effective approach to school improvement, but a low-cost approach as well. Consultant costs are reduced or eliminated, and travel costs on the part of faculty are non-existent. Released time for faculty is still required, but this usually can be managed when it is linked to a district's efforts to improve its schools.

THE PURPOSE OF THIS GUIDE

This Guide is intended to provide the information you need to take part in the school-based staff development program that has been described in the preceeding paragraphs. It tells you about the program, it gives you the rationale for the program; it outlines what the program will be on a day-by-day basis; and it directs you to the resources you will need to engage in the program successfully.

It also contains some of the resources you will be using in the program, for example, GUIDELINES TO CORE TEACHING/TESTING PRACTICES, but most of the resources you will be using are outside of the Guide. As indicated previously, the

primary resource you will be using in the staff development program is the **Handbook for Teachers on Integrating Teaching and Testing in the High School.**

USING THE HANDBOOK ON INTEGRATING TEACHING AND TESTING

This is a 165 page Handbook that deals with the specifics of integrating teaching and testing in the context of high school classes. The Handbook was developed with the assistance of teachers and well known experts in the fields of instruction and testing. It is an easy-to-understand and easy-to-use resource that you will be turning to again and again as the staff development program progresses.

Since your district has purchased this Guide for your use, there should also be a handbook for your use. If you have not yet looked at the handbook scan the Table of Contents to see what it contains.

REFLECTIONS ON THE ROLE OF COLLEAGUE EXCHANGE AND SUPPORT IN A SCHOOL-BASED STAFF DEVELOPMENT PROGRAM

Two levels of colleague exchange and support are called for in the staff development program. The first is among faculty within a department. The second is between department faculty and a program facilitation team that consists of the building principal, the department chair and a member of the department selected to serve as a "lead teacher" for the department in the staff development program.

Both levels of colleague exchange and support require new roles and responsibilities on the part of all concerned. Both also require a high degree of professionalism and a great deal of communication if new roles and responsibilities are to be carried out effectively.

The staff development program has been designed with the idea of colleague exchange and support at its core. It will be successful only to the extent that this occurs.

PART I

THE BASIC TRAINING PROGRAM

Contents

OVERVIEW

The basic training program is designed to give you the knowledge and skills needed to effectively integrate teaching and testing in an instructional unit. All work in the 2-day training program will focus on the integration of teaching and testing in instructional units you currently teach.

Much of the work you will do during the 2-day training program will be done with the assistance of colleagues from your department. You may also be working with junior high or middle-school faculty who teach in your subject area, but this will depend on how your district plans to engage in the training program. In either case the training program will be conducted by one of your colleagues, with the assistance of your principal and department chair.

During the 2-day training program you will be working with your colleagues to develop an instructional unit of your choice that reflects an ideal use of tests and test information in teaching. On the first day you will:

a. identify the learning outcomes to be achieved through the unit;

b. establish the weight or importance to be given to each outcome (as a guide to planning both instruction and assessment);

c. develop an assessment plan for the unit; and

d. prepare an initial draft of the final test or other assessment procedure you will use to determine how well students have accomplished the learning outcomes desired.

On the second day you will:

e. work with colleagues to refine the assessment plan and procedures prepared in day 1;

f. decide upon the performance standards (criteria) to be used in judging whether students have or have not mastered the learning outcomes desired;

g. decide how these criteria are to be applied to slow and fast learning students in the context of the course in which the unit is to be taught; and

h. decide how feedback is to be given to students on their test performance that highlights what has and has not been mastered, and suggests how learning can be improved.

On the second day of the training program you also will establish follow-up activities to those that have been outlined, including planning for the ADVANCED TRAINING PROGRAM if that is to be pursued.

OUTCOMES TO BE ACHIEVED

Knowledge

1. An understanding of what is meant by the concept of integrating teaching, testing, and the use of test information.

2. An understanding of the concept of mastery learning, and how the integration of teaching, testing and the use of test information relates to it.

3. An understanding of the many purposes served by tests, and the many factors to be considered when preparing tests and using test information.

4. Familiarity with an easy-to-use framework for classifying learning outcomes desired from instruction.

5. Familiarity with a variety of approaches to assessing the learning outcomes desired, and which of these approaches appear to work best in assessing particular kinds of outcomes.

6. Awareness of the pros and cons of pretesting and using pretest information.

7. Awareness of the concept of performance standards, and the related issues of adapting instruction and assessment procedures to accommodate slow and fast learning students.

8. Awareness of your district's policies pertaining to performance standards, and how these policies may need to be changed to accommodate instructional practices that reflect the effective integration of teaching and testing.

9. An awareness of how all of these factors need to be considered when preparing an instructional unit that effectively integrates teaching, testing and the use of test information.

Skills

1. Be able to use the **Handbook for Integrating Teaching and Testing** as a resource for integrating teaching, testing and the use of test information.

2. Be able to prepare instructional units that represent an effective integration of teaching and testing.

3. Be able to work with and give assistance to colleagues in preparing instructional units of this kind.

4. Be prepared to engage in the advanced training program with a high probability of success.

Products

1. A unit plan that reflects the effective integration of teaching and testing.

2. Faculty members within a department who have the knowledge and skills needed to begin integrating teaching and testing practices, with one member of the department prepared to serve as a "lead teacher" in such efforts.

3. School administrators who are aware of the value to be gained from the integration of teaching and testing, and who possess the knowledge and skills needed to facilitate the work of faculty who wish to do so.

Interest and Commitment

1. A sense of the value to instructional planning and management that comes with the effective integration of teaching and testing.

2. A sense of the value to student learning that comes with the effective integration of teaching and testing.

3. A beginning sense of the implications of a goal-based, mastery oriented approach to instruction for students, teachers and school administrators, including its implications for the organization and use of time, the availability of instructional resources and the need for instructional support services.

DAY 1 ACTIVITIES

Contents

Getting Ready for Day 1

Before attending the first day of the training program you will be given a copy of the **Handbook for High School Teachers on Integrating Teaching and Testing**, and several pages of materials that will orient you to the training program. You should receive these materials at least two weeks in advance of the first training day.

One page of these materials will describe work you are to do **prior** to the first day of training. While schools may vary in their approach to this assignment, you probably will be asked to:

a. Read the information distributed by your department chair or principal that pertains to the training program as it is to be implemented in your school;

b. Read selected pages in the Handbook, probably pages 1 to 11 (Introduction and Chapter 1), and pages 23 to 39 (Chapters 3 and 4); and

c. Select a unit of instruction that you currently teach or plan to teach to use in practicing the integration of teaching and testing in the training program.

The unit of instruction you select for practice will be the focus of most of your work in the two-day work session. Guidelines for its selection are provided on the next page.

If you have time before the first day of the training program, you may also wish to look briefly at other chapters in the Handbook. The Handbook will be your primary learning resource throughout the training program, and you will need to read most of it before the training program is over.

Guidelines for Selecting the Instructional Unit You Wish to Use In Practicing the Integration of Teaching and Testing

Identify at least one, and preferably two or three units that meet the following criteria:

1. A unit you would like to teach, or want to teach in the near future.
2. A unit that deals with content that is of interest to you personally.
3. A unit that deals with content you know well, or that you want to learn more about.
4. A unit that requires at least two weeks to complete, but not more than three weeks.
5. A unit that covers more than one kind of learning goal, for example, **application** of a principle or procedure as well as the **acquisition** of facts or concepts.

Be sure to bring to the first training session all of the materials you have developed or collected for use with the unit(s) you select, including the two or three text books or other learning resources that you draw on most heavily.

If you have done some inventive things in testing, or in the use of test information, bring these along as well. These examples need not be a part of the unit(s) you have selected to use for practice in the training program.

A Suggested Work Plan For Day 1

8:30 Opening comments, including a discussion of the goals of the project and the plan of work to be followed (principal and others as appropriate, for example, superintendent, department chair or lead teacher).

8:45 Discuss and clarify areas of uncertainty about the background reading assigned (lead teacher).

9:15 Firm decisions about an instructional unit in which to try out new teaching-testing practices, or refine current practices.

9:30 Establishing learning goals for a unit of instruction:

a. Introduce and discuss a framework for clarifying learning goals: See CORE TEACHING/TESTING PRACTICE I (lead teacher).

10:00 Break

10:10 b. Prepare an initial listing of unit goals (independent work).

c. Exchange unit goals with a colleague; mutually critique and refine.

11:30 Lunch

12:20 Developing an assessement plan for your unit of instruction

a. Factors to consider when developing an assessment plan for a unit of instruction: See CORE TEACHING/TESTING PRACTICE II (lead teacher).

b. Prepare an initial assessment plan (independent work).

c. Exchange assessment plans with a colleague; mutually critique and refine.

1:30 Preparing an initial draft of a unit test or other reliable assessment procedure to determine student mastery of the learning goals expected from your unit of instruction

a. Guidelines for preparing tests and other reliable assessment procedures: See CORE TEACHING/TESTING PRACTICE III (lead teacher).

b. Prepare an initial draft of an appropriate test or other assessment procedure to determine student mastery of your learning goals.

c. Leave a draft of your learning goals, assessment plan and test of goal mastery with the lead teacher.

3:15 Discussion of issues or concerns that have arisen while working on assessment procedures (lead teacher).

3:25 Planning for Day 2, and related homework assignments (lead teacher)

3:30 Adjourn

Notes On The Work Plan

1. **Selecting the instructional unit you will use in practicing the integration of teaching and testing.**

   This is an extremely important activity in the training program, for the unit selected becomes the focus of all training activities. It also is important to your own success in and satisfaction with the program, for it will define the content area in which you do your work.

   The guidelines for unit selection that appear on page 16 are designed to help you make a good choice in this regard. Opportunity also is provided in the training program, however, for you to refine or modify your initial thinking about a unit of instruction within which to work.

   By the end of the second day in the training program, the unit of instruction you have been working upon should be exemplary in its integration of teaching, testing and the use of test information.

2. **Designating the learning goals (outcomes) expected from your instructional unit.**

   The integration of teaching and testing starts with a clear statement about the learning outcomes you expect students to accomplish through a unit or course of instruction. These need to be stated in terms that make them useful to students as a guide to learning, and useful to teachers as a guide to instruction and assessment.

   A framework is presented in the **Handbook for Integrating Teaching and Testing** that will help you classify and describe learning outcomes that have these properties. You will have an opportunity to learn about this framework during the first day of the program, and work with it in clarifying or refining the set of learning outcomes you have had for the unit in the past or that you hope to foster through the unit in the future.

   Because of the central role that learning goals play in the integration of teaching and testing, the proposed framework for classifying learning goals will be at the forefront of considerations throughout the two-day training program. Most chapters in the Handbook are either organized around or anchored to this framework so you will be encountering it in nearly all that you read or do.

   WORKSHEET I on page 23 has been prepared for you to use in refining or extending the learning outcomes you want to achieve through your instructional unit. The worksheet reflects the language of the framework used in the Handbook.

3. **Advanced planning for instruction and assessment.**

   Once you are reasonably clear about the learning goals you hope to accomplish through a unit of instruction, you then face a host of issues pertaining to instruction and assessment. These include the emphasis to be given to the various learning outcomes desired, the level of accomplishment expected for each outcome, how instruction is to be organized to bring about this level of accomplishment, how and when progress toward goal attainment is to be assessed, and the use(s) to be made of the assessment information that is collected. All of these issues are addressed during the course of the day and you will be asked to make beginning decisions about them. Worksheets are provided that will help you think through these various issues.

4. **Preparing pre-tests and measures of student progress toward goal attainment.**

In preparing an assessment plan for your unit of instruction you may or may not wish to include a pre-test. Many advantages are gained from assessing what students know about content to be learned in a unit of instruction **before** instruction begins, but the preparation of pre-tests and the effective use of pre-test information requires a great deal of time on the part of teachers. As a consequence, many teachers choose not to include a pre-test in their unit planning.

This tends not to be the case, however, for indicators of student progress toward goal attainment. Nearly all teachers use progress measures of one kind or another, for example, quizzes and homework, to inform them of how well students are doing on what is to be learned. Measures of learning progess take many forms, however, and their use or non-use also tends to be left to the discretion of teachers.

CORE TEACHING/TESTING PRACTICE II is designed to deal with both of these aspects of classroom testing.

5. **Preparing measures to assess student mastery of goal attainment.**

This is the focus of CORE TEACHING/TESTING PRACTICE III, and it is probably the most difficult and demanding task you will be asked to do during the first day of the training program.

Here you will be asked either to develop or select test items and other measurement procedures that reliably assess student mastery of the learning goals established for your unit of instruction. You also will need to be sure that the measures you prepare are appropriate to the **kind** of learning goal being assessed, that they reflect the **level of accomplishment** (performance standards) expected for each goal, and that they reflect the **degree of emphasis** each goal is to receive within the unit of instruction.

The **Handbook for Integrating Teaching and Testing** provides a good deal of assistance with this task. You also will receive assistance from your lead teacher, and will be able to benefit from a review and discussion of your work with colleages. Work will continue on this task in Day 2 of the training program.

CORE TEACHING/TESTING PRACTICE I

Formulating learning goals that are useful to you and others, including students and school administrators

GUIDELINES

1. Try dividing learning goals according to two broad levels of accomplishment: **knowledge** and **skill.** These levels are expressed in the Handbook in terms of the distinction between "remembering" content and "using" content. The particular terms you select to convey this distinction is not important, so long as the difference in levels is clear to students.

2. Keep the list of goals **brief.** A list of goals for a unit, or chapter, probably should be no more than a page or so, at least if the listing is to be of use to students.

3. Indicate the relative **emphasis** to be placed on each goal for purposes of instruction and assessment. From an instructional point of view "emphasis" may mean that more time in class is devoted to one goal than to another. In regard to assessment, "emphasis" may mean that more weight is assigned to test items related to a particular goal, or a greater number of items are included for the goal. We suggest classifying goals according to three levels of emphasis: **High; Moderate;** and **Low.**

4. Using Guidelines 1, 2 & 3 draft an initial set of learning goals for your instructional unit. After completing these in rough form on a note pad, transfer them in readable form to WORKSHEET I (see p. 23).

5. After preparing a draft of your goal statements, here are four questions you should ask about them.

   . Are they sufficiently clear and concise for use by students?
   . Do they suggest an appropriate breadth and depth of learning for the unit?
   . Is the distinction between knowledge and skill goals clear?
   . Is the level of emphasis assigned to the goals appropriate?

6. Become familiar, if not already so, with the principles of mastery learning. All of the work that follows is designed to be consistent with these principles, though no assumption is made that your school or district will follow these principles as a matter of policy. References and summary statements about mastery learning are provided in Appendix A.

ILLUSTRATION

An example of learning goals for an instructional unit in science, written in a language and form appropriate for most 10th or 11th grade students, is provided on the following page. It organizes goals according to the categories of "knowledge" and "skill," and indicates the level of emphasis each goal is to receive.

SUPPORTING MATERIALS

Chapters 2 and 6 in the Handbook, and Appendix A in this Guide.

Illustrative Unit on the Nature of Scientific Thinking

	Degree of EMPHASIS we will place on this in class and on tests		
What you should KNOW:	**High**	**Moderate**	**Low**
1. The difference between questions that can be studied through scientific means and those that can't.		X	
2. The difference between a scientific and nonscientific approach to studying questions.		X	
3. The way in which a scientist's frame of reference influences his or her choice of questions to examine.	X		
4. The meaning of terms like "hypothesis," "law," "theory" and "model."			X
5. The role that experiments play in scientific research.	X		
What you should be able to DO:			
1. Design simple experiments to find out which of several factors, e.g., light, moisture, or temperature, influence the behavior of a given animal or plant the most.	X		
2. Decide whether the results of a particular experiment support or put into question a given hypothesis.	X		
3. Decide whether a particular hypothesis is consistent with a given theory.			X

LEARNING GOALS FOR MY UNIT OF INSTRUCTION

Name _____ Course _____ Unit _____

GOALS	DEGREE OF EMPHASIS High	Moderate	Low
A. What students should KNOW by the completion of the unit			
Goal A1.			
Goal A2.			
Goal A3.			
Goal A4.			
B. What students should BE ABLE TO DO by the completion of the unit			
Goal B1.			
Goal B2.			
Goals B3.			
C. If applicable, what PRODUCTS students should create or refine by the completion of the unit			
Goal C1.			
Goal C2.			

NOTE: You may also wish to list the attitudes, interests or commitments you expect students to hold at the completion of the unit, but learning goals of this nature tend to be more appropriate for courses rather than units of instruction. Also, no assistance is provided in the Handbook for assessing these kinds of learning goals.

Developing an assessment plan for a unit of instruction

GUIDELINES

1. Decide on the role that pretesting is to play in the design of your assessment plan. If you decide to give a pretest, be sure you are clear about the purpose(s) it is to serve.

   One common purpose served by pretests is to check whether students have the knowledge and skills needed to do the work called for in a particular unit or course. Another is to determine how much students already know or can do in relation to topics to be covered. If used for either purpose pretests will give you information that has a great deal of value for instructional planning.

   Pretest information also has value for students. It clarifies expectations for learning and lets them know where they stand relative to these expectations. This in turn gives focus and direction to their learning efforts, and for many students increases motivation to learn.

   In some districts pretesting over units of instruction may be part of a larger system whereby students are given credit by examination. If such a system exists in your district you already will be well informed about the merits of and procedures involved in collecting and using pretest information.

2. After reaching a decision about pretesting, decide on how you plan to assess student progress toward goal attainment during the course of the unit.

   Progress testing usually assumes the form of a weekly quiz or the careful monitoring of assignments, but if you have administered a pretest and students are working on tasks that accommodate the differences in skill and understanding they bring to the unit, progress testing may be more complex than this. WORKSHEET IIa is designed to facilitate your planning with respect to both pretesting and progress testing.

   As a part of your thinking about progress testing be sure you are clear about the uses you will make of the information you plan to obtain through it. Generally speaking this requires being clear about how you will use the information as a guide to instructional planning and adaptation, and as feedback to students on the progress they are making in their learning. Both the frequency and form of progress testing will vary depending on the decisions you reach about these two uses.

3. The most important task you face in preparing your assessment plan is to decide how you are going to determine student mastery of the learning goals that have been established for the unit. Here you will need to match assessment procedures to both the **kind** of learning goals to be accomplished and the **level of accomplishment** (performance standard) expected. You also will need to match the **weight given to particular learning goals** in your assessment plan to the degree of emphasis they are to be given in the instructional unit.

These are complex and demanding decisions to make. They require considerable knowledge about alternative approaches to testing, and about the appropriateness of particular approaches to the assessment of particular types of outcomes. The Handbook is designed to give you this kind of information.

All of these decisions cannot and need not be made when you are preparing your assessment plan. At a minimum, however, you should "rough out" the general approach to measurement you plan to take for each learning goal. This will let you see the range and balance of assessment procedures you plan to use, and the nature of the test development tasks you face. It should also give you a good idea of the time you will need to allow for mastery testing during the unit. WORKSHEET IIb is designed to facilitate this level of planning for mastery testing.

4. Be sure that your overall assessment plan reflects the realities you face in your classroom, including school or district policies toward testing and the use of test information. Few schools or classroom situations prohibit the use of pretesting, progress testing or mastery testing, but few make it easy. Chapter 3 in the Handbook addresses the many situational factors that influence the integration of teaching and testing.

ILLUSTRATION

An example of an assessment plan for pretesting and progress testing, and an example of a plan for mastery testing, are provided on the following pages. Both take as their focus the learning goals outlined on p. 22.

SUPPORTING MATERIALS

Chapters 3, 4, 5 and 8 in the Handbook.

An Illustrative Assessment Plan for Pretesting and Progress Testing

(see p. 22 for related learning goals)

Pretesting

Give a brief pretest during the first day of the unit over KNOWLEDGE GOALS 1, 2, 4 and 5. Limit the test to 3 objective items for each goal. Response-selection and response completion items will be included for each goal. Students will score their own tests and turn them in at the end of the first class period.

Also during the first day of the unit assess through a show of hands the experience students have had in designing experiments of the kind called for in SKILL 1. No effort will be made to pretest KNOWLEDGE GOAL 3 or SKILL GOALS 2 and 3.

If these preinstruction assessments show large differences to exist in the knowledge level of students, the class will be divided into at least two sections: those who are most knowledgeable and those who are less knowledgeable. Instructional efforts with the most knowledgeable students will emphasize advanced study (enrichment) and skill development. Instructional efforts with the less knowledgeable students will emphasize knowledge development in the first week or so of the unit, and then shift to skill development.

Progress Testing

	ACQUISITION OF KNOWLEDGE	ACQUISITION OF SKILL
Advanced Students	a. Check reading notes and other project/homework assignments for advanced study topics.	a. Observe students preparing for and carrying out experiments of the kind called for in Goal 1.
	b. Give a quiz at the end of the second week of the unit that will let students know how they are progressing toward mastery of all unit-specific KNOWLEDGE goals.	b. Check laboratory notes on and reports of the experiments called for in Goal 1. Each report is to include a summary of the conclusions called for in SKILL Goals 2 and 3, with an explanation of how or why these conclusions were reached.
		c. Check laboratory notes and reports on more complex experiments conducted during the unit, if this has been the case.
		d. Have students analyze one or more published experiments with respect to the conclusions called for in SKILL Goals 2 and 3, with an explanation of how or why these conclusions were drawn.

	ACQUISITION OF KNOWLEDGE	ACQUISITION OF SKILL
Less Advanced Students	a. Give a quiz at the end of both the first and the second weeks of the unit that will let students know how they are progressing toward mastery of all KNOWLEDGE goals. b. Check reading notes and other project/homework assignments designed to foster progress toward mastery of KNOWLEDGE goals.	a. Observe students preparing for and carrying out experiments of the kind called for in Goal 1. b. Check laboratory notes on and reports of the experiments call-for in Goal 1. Each report is to include a summary of the conclusions called for in SKILL Goals 2 and 3, with an explanation of how or why these conclusions were reached.

An Illustrative Design for the Assessment of Goal Mastery

(see p. 22 for related learning goals)

	Objective Test Items	Essay or Other Products	Observation of Performance
KNOWLEDGE OUTCOMES			
Goal 1. The difference between questions that can be studied through scientific means and those that can't. (Moderate Emphasis)	X		
Goal 2. The difference between a scientific and nonscientific approach to studying questions. (Moderate Emphasis)	X		
Goal 3. The way in which a scientist's frame of reference influences his or her choice of questions to examine. (High Emphasis)	X	X	
Goal 4. The meaning of terms like "hypothesis," "law," "theory" and "model." (Low Emphasis)	X		
Goal 5. The role that experiments play in scientific research. (Moderate Emphasis)	X	X	
SKILL OUTCOMES			
Goal 1. Design simple experiments to find out which of several factors, e.g., light, moisture, or temperature, influence the behavior of a given animal or plant the most. (High Emphasis)		X	X
Goal 2. Decide whether the results of a particular experiment support or put into question a given hypothesis. (Moderate Emphasis)	X	X	
Goal 3. Decide whether a particular hypothesis is consistent with a given theory. (High Emphasis)	X	X	

WORKSHEET IIa.

A PLAN FOR PRETESTING AND PROGRESS TESTING IN MY UNIT OF INSTRUCTION

Name	Course	Unit

Pretesting

Progress Testing

The ACQUISITION OF KNOWLEDGE

The ACQUISITION OF SKILL

The CREATION OF PRODUCTS (if applicable)

WORKSHEET IIb

A DESIGN FOR THE ASSESSMENT OF GOAL MASTERY IN MY UNIT OF INSTRUCTION

Name _____ Course _____ Unit _____

	Objective Test Items	Essay or Other Products	Observation of Performance
KNOWLEDGE OUTCOMES			
SKILL OUTCOMES			
PRODUCT OUTCOMES (if applicable)			

CORE TEACHING/TESTING PRACTICE III

Developing or selecting test items and other assessment procedures that meet the requirements of your assessment plan, and assure quality in the information to be obtained through it.

GUIDELINES

1. Use types of test items or assessment procedures that are appropriate for the learning goals to be assessed.

   a. If you are assessing students' knowledge of facts, concepts, or other content, or their skill in "convergent" thinking, i.e., thinking that follows standard forms of logic and produces results that can be judged right or wrong, then objective test items are appropriate.

   b. If you are assessing students' skill in integrating and applying knowledge in original ways, or in developing individual plans, interpretations, or positions, then essays and open-ended problem solving items are more appropriate.

   c. If you wish to assess students' skills as they are applying them, then classroom observation is called for.

   Chapters 5 and 8 in the Handbook have been designed to give you assistance in selecting assessment procedures that are appropriate to use with particular kinds of learning outcomes.

2. To help assure that your test items or assessment procedures are as good as they can be, review the guidelines for item writing contained in Chapter 9 of the Handbook. Guidelines have been prepared for each of the major types of objective test items, for essays and other product-related assessments, and for observation of performance. Keep in mind that it is a good idea to develop criteria for scoring essay questions and other variable-credit items before you give the test (see Chapter 10 for information on scoring procedures).

   NOTE: Even if you wish to use published tests accompanying texts or other curriculum materials, you should critically evaluate the items on these tests to determine both their match with what you have taught and their technical adequacy. Some questions you should ask about unit or chapter tests accompanying textbooks are provided on p. 35.

3. Make sure that the weight (point values) assigned to test items related to a particular goal, or the number of items included for the goal, match the emphasis that has been placed on the goal.

4. Consider coding each item on a test to identify the learning goal on which it is based. This identifying code could be written next to each item, or if a group of items are related to the same goal, then the code could be placed in the upper right corner of the page, or in a comparable place.

ILLUSTRATIVE TEST ITEMS

Sample items from a wide variety of subject areas have been included in Chapters 8 and 9 of the Handbook. Illustrative items also are included in Chapter 5. These items are keyed to different types and levels of learning outcomes and represent a wide range of item types. They do not, however, reflect any particular instructional emphasis.

SUPPORTING MATERIALS

Chapters 5, 8, 9 and 10 in the Handbook.

Some Questions You Should Ask About Unit or Chapter Tests Accompanying Textbooks

1. How closely do the test questions match the learning goals that have guided instruction during the unit? Is anything not covered on the test that should be? Is anything covered that was not addressed during instruction?

2. To what extent do the content and tasks emphasized on the test match the content and tasks emphasized during instruction? (Emphasis on a test is conveyed by number of items or by the point values assigned to items.)

3. Does the test include subtests over different learning areas or different types of performance, e.g., knowing vs. using concepts?

4. Is the level of difficulty of the items appropriate?

5. Are the items sufficiently clear?

   - directions
   - questions
   - response options

6. Are the items technically sound? (See the item-writing checklists and guidelines in Chapter 9 of the Handbook).

7. Is the length of the test appropriate?

8. Is the layout of the test well-designed?

   - typeface
   - spacing between items
   - margins
   - space to write answers

DAY 2 ACTIVITIES

Contents

Getting Ready for Day 2

Before returning to the second day of the training program you probably will be asked to:

a. Review, and refine to the extent you think is needed, the work you did in Day 1 (if you were not able to complete an initial draft of your test of goal mastery for your instructional unit, be sure to complete it before returning to Day 2);

b. Re-read selected pages in the Handbook, probably pages 91 to 134 (Chapters 9 and 10); and

c. Read selected sections of the Handbook for the first time, probably pages 135 to 158 (Chapters 11 and 12).

Your lead teacher will return to you at the beginning of Day 2, w ch comments and suggestions, the drafts of your first day's work. Time will be given at the beginning of the day to further refine your work from Day 1. These items need to be as good as they possibly can be before progressing to substantive topics in the second day of the training program.

A Suggested Work Plan for Day 2

8:30 Review of progress made in Day 1, and the tasks that remain for Day 2 (principal, and others as appropriate).

8:40 Feedback on goal statements, assessment plans and initial drafts of tests for goal mastery (lead teacher).

9:00 Refine first day products in light of lead teacher comments and your current thinking about them. If time permits, begin work on performance standards (independent work).

10:00 Break

10:10 Establishing performance standards (criteria) by which to judge whether students have or have not mastered the learning outcomes desired:

a. Guidelines to consider when addressing this topic: See CORE TEACHING/TESTING PRACTICE IV (lead teacher).

b. Prepare an initial set of performance standards for your test of goal mastery (independent work).

c. Exchange performance standards with a colleague; mutually critique and refine.

11:00 Determine how performance standards are to be applied to slow and fast learning students in a unit of instruction:

a. Guidelines to consider when addressing this topic: See CORE TEACHING/TESTING PRACTICE V (lead teacher).

b. Reflections on district, school and department positions with respect to performance standards and holding students accountable for their accomplishment (principal and department chair).

c. A discussion topic over lunch: Faculty beliefs and preferences with respect to performance standards and their use.

11:30 Lunch

12:20 Report on conclusions reached over lunch.

12:30 Adjust/refine goal statements, assessment plans, tests of goal mastery and performance standards to reflect the morning's activities (independent work).

1:30 Determine how feedback is to be given to students on their test performance that highlights what has and has not been mastered, and suggests how learning can be improved:

a. Tuidelines to consider when addressing this topic: See CORE TEACHING/TESTING PRACTICE VI (lead teacher).

b. Prepare a plan for giving feedback to students on test performance (independent work):

. quizzes;
. unit tests of goal mastery.

c. Exchange feedback plans with a colleague; mutually critique and refine.

2:30 Break

2:40 Make final adjustments/refinements in goal statements, assessment plans, tests of goal mastery, statements of performance standards and plans for providing feedback to students on their test performance (independent work).

3:20 Give the lead teacher a copy of these products in their final form, and discuss what happens next with respect to the training program (principal, department chair).

3:30 Adjourn

Notes On The Work Plan

1. **Refining first-day goal statements, assessment plans and tests of goal mastery.**

   You were asked to complete a great deal of work during the first day of the training program. The three products you produced (goal statements, an assessment plan and a test of goal mastery) were to be done only in draft form, but even so they represented a demanding work assignment.

   Most of Day 2 in the training program will be devoted to refining, extending and adjusting your initial draft of these products. The day will begin with the first round of this process, with refinement occurring on the basis of your own reflection on what you have done (or didn't get done), and your lead teacher's comments on your work. The second round of this process will follow decisions you make with respect to performance standards, and a third round will follow decisions you make with respect to the uses to be made of test information, including the feedback students will receive about their test performance.

   By the end of Day 2 you should have a unit plan that illustrates in an examplary manner how teaching and testing can be integrated at the high school level, including the application of performance standards to slow and fast learning students and the use(s) to be made of test information.

2. **Establishing performance standards by which to judge whether students have or have not mastered the learning outcomes desired.**

   Establishing the learning goals you want students to accomplish through a unit of instruction is one thing. Establishing **the level at which these goals are to be accomplished as a condition of mastery,** however, is something else. The two obviously go hand-in-hand, but the issue of performance level required for mastery goes considerably beyond a declaration of learning goals.*

   Of all the issues dealt with in the training program, the idea of performance standards and their application to slow and fast learning students is probably the most difficult to manage. The idea that **all** students in one's class can accomplish a particular set of learning goals at a pre-designated level of performance, and must do so to demonstrate goal mastery and thereby move forward in a course, is foreign to many teachers. It also is foreign to many school administrators, and troublesome to many parents.

   By the completion of Day 2 in the training program you should have resolved these issues in your own mind, and resolved them as a faculty in your department. You also probably will have adjusted the learning goals for your unit, your assessment plan and your test of goal mastery to reflect these decisions. CORE TEACHING/TESTING PRACTICES IV and V are designed to help you in this process.

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*It is possible to include in the statement of a learning goal the level of performance required for mastery, but this leads to goal statements that are cumbersome to read and exasperating to prepare. As a consequence, we recommend that goal statements and performance standards be prepared separately. Chapter 6 in the Handbook addresses this issue in more depth.

3. **Determining how feedback is to be given to students on their test performance that highlights what has and has not been mastered, and suggests how learning can be improved.**

The integration of teaching and testing serves two major purposes. One is to inform teachers about student progress toward goal attainment when they are planning instruction and as they make instructional decisions during the course of a unit. The other is to help students know what they are expected to learn and to let them know where they stand in this regard. Both purposes help give focus, efficiency and purpose to the instruction/learning process for both students and teachers.

CORE TEACHING/TESTING PRACTICE VI focuses on the use(s) to be made of test information, and how this information is to be given to students to make it optimally useful as a guide to learning. By the completion of Day 2 in the training program you probably will have adjusted the learning goals in your unit, your assessment plan and your test of goal mastery to reflect the decisions you reach about these matters.

CORE TEACHING/TESTING PRACTICE IV

Establishing performance standards (criteria) by which to judge whether students have or have not mastered the learning outcomes desired for a unit of instruction.

GUIDELINES

1. Before attempting to establish performance standards for your unit of instruction be sure you understand thoroughly the meaning of the concept. Pages 57-59 and 144-145 in the Handbook deal with this concept.

2. Once you feel confident that you understand the meaning of performance standards, be sure you understand the application of the concept in the context of mastery learning. Pages 24-28 in the Handbook, and Appendix A, will be helpful here.

3. Once you feel confident in your understanding of how performance standards work in the context of mastery learning, establish what you feel to be reasonable performance standards for your test of goal mastery. At this point do not try to differentiate your standards for slow and fast learning students. Think about differentiating them, however, for KNOWLEDGE and SKILL outcomes, and even for individual learning goals. Pages 57-59 and 144-145 in the Handbook will be helpful here.

4. After you have established what you feel to be reasonable performance standards for the learning goals within your unit, decide how performance in relation to these standards is to translate into grades. Chapter 13 in the Handbook (pp. 159-165) will be helpful here.

5. After completing all of the above decide how you will communicate these decisions to students. Also decide how you will communicate them to your colleagues and principal -- if you feel it would be important to do so. WORKSHEET IV has been designed to capture your thinking about all these matters.

SUPPORTING MATERIALS

Pages 57-59, 144-145 and Chapter 13 in the Handbook; Appendix A in this Guide.

WORKSHEET IV

PERFORMANCE STANDARDS FOR MY UNIT OF INSTRUCTION

Name _____ Course _____ Unit _____

Standards of Performance I Plan to Require for Goal Mastery

KNOWLEDGE OUTCOMES

SKILL OUTCOMES

The Relationship Between Standards for Student Performance and Grades

My Plan for Communicating This Information to Students

CORE TEACHING/TESTING PRACTICE V

Deciding how performance standards are to be applied to slow and fast learning students in a unit of instruction.

GUIDELINES

1. Before deciding how performance standards are to be applied to slow and fast learning students, be sure you are aware of all school, district, state and federal policies/laws that apply to this issue. Check with your principal about this. Also check with your department chair about departmental policies or practices that might pertain.

2. Once you are clear about the constraints within which you must operate, decide how you would prefer to apply the general performance standards you have developed for your unit to slow and fast learning students. In doing this be sure you think through the implications of your decision for the realities of instructional planning, instructional activities, instructional materials and grading. Chapters 3, 12 and 13 in the Handbook will be helpful here. WORKSHEET Va has been designed to capture your thinking about this matter.

3. Apart from whether you plan to adapt performance standards to accommodate slow and fast learning students, you will have to provide corrective or remedial activities for slow learning students and enriching or advanced learning activities for fast learning students. Use WORKSHEET Vb to outline how you plan to allocate class time and organize in-class activities to accommodate these student differences.

   NOTE a: If remedial work is to be given to a group of students during the regular class period, try to make sure that advanced students receive challenging assignments and not just "make work." This may involve, for example, extra credit laboratory assignments intended to extend students' understanding of the content of a particular unit, or some form of peer tutoring whereby these students assist their slower classmates in working problems or answering questions with which they had difficulty. **If a large percentage of the class fails to meet desired standards, you may wish to provide remedial instruction for the class as a whole.**

   NOTE b: It is not expected that you spend days and days accommodating students who fail to meet mastery standards, but it is expected that you will provide corrective or remedial activities for low performing students that reflect the specific kinds of learning gaps or weaknesses identified through a test of goal mastery.

4. You also will need to build a parallel form of your unit test, i.e., a test that reflects the same learning goals and the same emphasis as your original test. This will be time consuming, but if it is done on a unit-by-unit basis, the time costs may be tolerable. You will need to administer the parallel form of the test after students have had a reasonable opportunity to improve their learning.

SUPPORTING MATERIALS

Chapters 3, 12 and 13 in the Handbook.

WORKSHEET Va

ADAPTING PERFORMANCE STANDARDS TO ACCOMMODATE SLOW AND FAST LEARNING STUDENTS

Name _____ Course _____ Unit _____

Adaptations in the Basic Performance Standards I Have Adopted

ADAPTATIONS FOR FAST LEARNING STUDENTS	ADAPTATIONS FOR SLOW LEARNING STUDENTS

The Relationship Between Standards for Student Performance and Grades

FAST LEARNING STUDENTS	SLOW LEARNING STUDENTS

My Plan for Communicating This Information to Students

My Plan for Communicating This Information to Colleagues and My Principal

COLLEAGUES	PRINCIPAL

WORKSHEET Vb

PROVIDING REMEDIAL AND ENRICHMENT ACTIVITIES ON THE BASIS OF STUDENT PROGRESS TOWARD GOAL MASTERY

Name _____ Course _____ Unit _____

My Plan For Providing Corrective/Remedial Learning Activities If Needed

CLASSROOM ORGANIZATION AND TIME	INSTRUCTIONAL MATERIALS AND PROCEDURES

My Plan For Providing Enriching/Advanced Learning Activities If Needed

CLASSROOM ORGANIZATION AND TIME	INSTRUCTIONAL MATERIALS AND PROCEDURES

CORE TEACHING/TESTING PRACTICE VI

Deciding how feedback is to be given to students on their test performance that highlights what has and has not been mastered, and suggests how learning can be improved.

GUIDELINES

1. Consider coding test items according to the learning goals on which they are based. This will let students see for themselves how well they did in reference to particular goals. Also, when reporting test results to the class, you may wish to indicate how well students as a whole did in relation to individual goals. Example 1 on page 53 shows one way in which this can be done.

2. Also consider calculating and reporting subscores on a test. "Subscores" are scores on individual sections of a test. These sections may deal with a single learning goal, or a set of related goals. For example, you may wish to calculate a subscore for a section of a test dealing with knowledge outcomes, and a section dealing with skill outcomes. Example 2 on page 53 shows how this might be done.

3. To the extent possible, provide written comments to supplement or enlarge upon test scores. Comments may serve any or all of the following purposes:

   - To highlight and reinforce the message conveyed by scores, e.g., "You did very well on the story problems, but you seemed to have difficulty with items on graphing relationships."

   - To place scores in a broader and more personal context, e.g., "You did a lot better on this unit test than on the last quiz. You certainly have thought more thoroughly about the relation between nutrition and health."

   - Provide more detailed information about a student's test performance, e.g., "The solution you created for the open-ended application problem was particularly imaginative."

   - Suggest steps for improvement, e.g., "You missed most of the items on the origin of viruses in plants. I'd suggest you reread the handout on this topic and listen to the accompanying cassette. When you complete these steps, you'll be ready to take an oral quiz on plant viruses."

   - Signal the need for a conference with the teacher, or for some sort of diagnostic assessment, e.g., "You have scored so low on these last two units that I am wondering what's going wrong? Please see me at the end of class."

   - Indicate to a student that he or she is ready for new or more independent work, e.g., "Now that you've got this under your belt, you're ready to move on to the next unit."

4. Finally, consider using a worksheet of the kind shown on page 54 to help students analyze errors they make on a test. Also, by asking to see this information for a class as a whole, a teacher will gain a great deal of information about why students scored the way they did on a test.

ILLUSTRATIONS

Examples of test scores that are anchored to types or levels of learning outcomes (see the next page).

An example of a worksheet designed to help students analyze errors they make on a test (see p. 54).

SUPPORTING MATERIALS

Chapter 11 in the Handbook.

Examples of Test Scores that are Anchored to Types or Levels of Learning Outcomes

Example 1: Reporting Scores by Type of Content

CONCEPTS & PRINCIPLES REGARDING THE CIRCULATORY SYSTEM		CONCEPTS & PRINCIPLES REGARDING THE DIGESTIVE SYSTEM	
No. of Items	No. Correct	No. of Items	No. Correct
8	8	12	9
	100% correct		75% correct

Example 2: Reporting Scores by Level of Performance

REMEMBER-LEVEL		USE-LEVEL	
No. of Items	No. Correct	No. of Items	No. Correct
20	18	10	6
	90% correct		60% correct

An Illustrative Worksheet Designed to Help Students Analyze Errors They Make on a Test

(adapted from a procedure observed in a local high school science classroom)

Student Directions

Locate each item that you missed on the test. Write the item numbers in the spaces provided in the left hand column. Then read the item and decide which statement in the right hand column best explains why you missed it. Write the letter of this statement next to the item number in the spaces under the heading "REASONS."

When you have indicated the reason for each item missed, count up the number of A's, B's, C's, etc. and write these totals in the boxes at the bottom of the page.

Item Number	Reason	Reasons for Missing an Item
___	___	A I didn't know we were supposed to remember this material for the test so I didn't review it.
___	___	B I knew this material was important, and I reviewed it, but I couldn't remember it for the test.
___	___	C I knew the answer, but I didn't know how to write it down correctly.
___	___	D I didn't understand what the question was asking for.
___	___	E I don't understand how to get this answer; I need more explanation on this topic.
___	___	F I didn't have enough time to work on this question.
___	___	G I missed class on the day we covered this topic.

Count the number of each of the reasons and enter it in the boxes below.

A	B	C	D	E	F	G
___	___	___	___	___	___	___

PART II

THE ADVANCED TRAINING PROGRAM

Contents

OVERVIEW

The advanced training program is designed to give you the knowledge and skills needed to effectively integrate teaching and testing in a course of study, and to articulate learning goals across courses within an instructional program. All work in the 3-day training program will focus on the integration of teaching and testing in courses you currently teach.

As in the case of the BASIC training program, most of the work you will do in the ADVANCED program will be done with the assistance of colleagues from your department. Your work will continue to be facilitated by a colleague identified as a lead teacher, and by your principal and department chair.

During the 3-day training program you will devote most of your time and energy to developing a course of your choice that reflects an ideal use of tests and test information in teaching. On the first day you will:

a. refine the framework used in the BASIC training program for thinking about learning goals;

b. adjust the assessment plan you prepared in the BASIC program to reflect this refined framework;

c. address the issues involved in articulating UNIT goals with COURSE and PROGRAM goals; and

d. prepare an initial listing of the learning goals for the course you wish to work on in the advanced training program, and the instructional units you plan to include in it.

On the second day you will:

e. design an assessment plan for the course on which you are working;

f. address the issues involved in linking grading criteria to performance standards for goal attainment;

g. work with your colleagues and principal toward departmental and school-wide agreements on grading criteria; and

h. prepare an initital draft of the grading criteria you plan to use in the course on which you are working.

On the third day you will:

i. work with your colleagues and principal toward departmental and school-wide agreements on using information about student goal attainment in course planning and presentation;

j. address the issues involved in managing goal-based instruction with students working at expected levels of accomplishment;

k. address the issues involved in managing goal-based instruction with students who need corrective or remedial assistance to accomplish desired learning goals; and

l. address the issues involved in managing goal-based instruction with students who quickly master the learning goals set for a class as a whole.

On the third day of the training program you also will spend time with your colleagues and principal in discussing how the concept of integrating teaching and testing can be extended to PROGRAMS of instruction.

OUTCOMES TO BE ACHIEVED

Knowledge

1. Familiarity with a refined framework for thinking about learning goals.

2. An awareness of the distinctions between unit, course and program goals, and how all three need to be articulated when designing a course.

3. An understanding of how an assessment plan for a course of instruction differs from but relates to assessment plans for instructional units within a course.

4. An understanding of how grading criteria for a course differ from but relate to grading criteria for a unit of instruction, and how performance standards for goal attainment at both levels relate to grading criteria.

5. Familiarity with local, state and national policies that pertain to performance evaluation and grading in the schools, and the connection between these and policies pertaining to promotion and graduation.

6. Familiarity with the practices and preferences of one's colleagues with respect to these policies.

7. An understanding of the many uses that information about student goal attainment has in course planning and presentation.

8. An understanding of the principles and procedures involved in managing goal-based instruction, including the adaptations that need to be made for slow and fast learning students.

9. An understanding of the role that microcomputers can play in facilitating the integration of teaching and testing in the schools.

10. Clarity about one's own position with respect to all of the above, and how this position can be translated into courses you teach.

Skills

1. Be able to prepare courses that reflect all of the above.

2. Be able to work with and give assistance to colleagues in preparing courses that reflect all of the above.

3. Be prepared to work with colleagues and administrators in developing PROGRAMS of instruction that reflect all of the above.

Products

1. A course plan that reflects the effective integration of teaching and testing practices.

2. Faculty members within a department who have the knowledge, skills and experience needed to work together toward integrating teaching and testing practices in the courses they teach.

3. School administrators who are aware of the value to be gained from the integration of teaching and testing, and who possess the knowledge and skills needed to facilitate the work of faculty who wish to do so.

Interest and Committment

1. A full realization of the value to instructional planning and management that comes with all of the above.

2. A full realization of the value to student learning that comes with all of the above.

3. An emerging sense of the implications of a goal-based, mastery oriented approach to instruction for students, teachers and school administrators, including its implications for the organization and use of time, the availability of instructional resources and the need for instructional support services.

DAY 3 ACTIVITIES

Contents

Getting Ready for Day 3

Between the completion of the BASIC training program and the beginning of the ADVANCED training program you probably were asked by your lead teacher and principal to try out the instructional unit that you developed during the basic program. You probably also were asked to summarize the information you collected during the unit on student learning, and organize it in a form that will let it be shared with colleagues at the outset of the advanced training program. If you have not as yet prepared this information, be sure to do so before the advanced training program begins.

As you know from reading the previous pages in this guide, the focus of the advanced training program is on the integration of teaching and testing in a COURSE that you teach rather than a UNIT of instruction. It also will focus on the connection between unit, course and program goals for students, although the connection between course and program goals will receive only slight attention.

Because the work of the advanced training program will center on the course of instruction you select to work upon, select the course with some care. You probably should choose either a course that is of high interest to you, or one which you are well prepared to teach. It may be either a course you have taught many times, with the advantage of having an extensive collection of instructional and assessment resources upon which to draw, or a course that you will be teaching in the near future.

You also may be asked to read, or reread, sections of the Handbook before entering the advanced training program, but this will depend on the plan that your lead teacher and principal have developed for the program.

A Suggested Work Plan For Day 3

8:30 Opening comments, including a review of work accomplished in the BASIC training program and work to be accomplished in the ADVANCED program (principal, and others as appropriate).

8:45 Share what has been learned from trying out the units of instruction developed in the BASIC training program, including the learning accomplishments of students.

9:30 Refining the BASIC framework for thinking about learning goals:

a. Introduce and discuss the refined framework: See CORE TEACHING/ TESTING PRACTICE VII (lead teacher).

10:00 Break

10:10 b. Using this refined framework elaborate the learning goals for the instructional unit you developed in the BASIC training program (independent work).

c. Exchange revised learning goals with a colleague; mutually critique and refine.

11:00 Adjusting assessment procedures to accommodate refined learning goals:

a. Factors that need to be considered when thinking about a refined assessment plan: See CORE TEACHING/TESTING PRACTICE VIII (lead teacher).

11:30 Lunch

12:20 b. Adjust the assessment plan developed in the BASIC training program to accommodate your refined learning goals (independent work).

c. Exchange revised assessment plans with a colleague; mutually critique and refine.

1:30 Articulating UNIT goals with COURSE and PROGRAM goals:

a. Guidelines to consider when addressing this topic: See CORE TEACHING/ TESTING PRACTICE IX (lead teacher).

b. Prepare an initial listing of learning goals for the COURSE you wish to work on in the advanced training program (independent work).

c. Prepare an initial listing of the instructional units you plan to include in the course, and identify the major contribution(s) each unit is expected to make to your course goals.

d. Prepare copies of all of the products developed during the day, and leave with the lead teacher.

3:00 Discussion of issues or concerns that have arisen while working on course goals and unit identification (lead teacher).

3:25 Planning for Day 4, and related homework assignments (lead teacher).

3:30 Adjourn

Notes On The Work Plan

1. **Sharing what has been learned from trying out the units of instruction developed in the BASIC training program.**

   The point of departure in the ADVANCED training program is an examination of the experience you and your colleagues have had in implementing the unit of instruction developed during the basic training program, including the learning accomplishments of students who took part in the unit. The purpose of this beginning activity is to detemine how well your plans for integrating teaching and testing activites worked, whether they appeared to faciliitate the teaching/learning process, and students' reactions to them. Other purposes this activity are to serve include an analysis of the adequacy of your learning goals for your unit of instruction, the adequacy of the measures you developed for assessing student goal attainment, the reasonableness of the standards set for goal attainment, and the utility of the procedures you had thought of for giving students information about their performance on tests of goal attainment.

   A final purpose to be served by the activity is to stimulate further discussion of the value to be gained in using pretests with instructional units, and the multiple uses that can be made of pre-test information.

2. **Refining the BASIC framework for thinking about learning goals.**

   The framework that was used in the BASIC training program for thinking about learning goals is a functional but unrefined framework. The framework you will be exposed to in day 3 of the training program is an elaboration on this basic framework. It is still a relatively simple and straightforward framework to use, but it does distinquish between two broad categories of knowledge outcomes and two broad categories of skill outcomes. The reasonably simple distinctions that are proposed in this regard help considerably in thinking about instruction and assessment in relation to outcome attainment.

3. **Adjusting assessment procedures to accomodate refined learning goals.**

   As learning goals are modified or refined, procedures for assessing goal attainment need to be modified or refined as well. During this phase of your work you should use the Handbook as a resource to draw upon in matching assessment procedures to the refined learning goals.

4. **Articulating UNIT goals with COURSE and PROGRAM goals.**

   In most cases courses offered in a high school rest within a PROGRAM of instruction. A course in writing, for example, nearly always rests within a program of English and Language Arts. The same holds with respect to a course in biology, as part of a science program, and a course in algebra as part of a program in mathematics. Programs of instruction usually extend across the entire three or four years of high school.

   Just as the learning goals for a unit of instruction are shaped by and need to be consistent with the learning goals of the course within which the unit rests, the learning goals for a course are shaped by and need to be consistent with the learning

goals of the program within which it rests. The nature of the connection between these three levels of learning goals is introduced at this point in the training program, but not dealt with in any depth. The connection is dealt with in sufficient detail however, to let you fashion a set of learning goals for the course on which you are working with some sensitivity to the broader goals of the program within which the course rests.

CORE TEACHING/TESTING PRACTICE VII

A refined framework for thinking about learning goals

GUIDELINES

1. Try dividing the **knowledge** goals you listed for the unit of instruction you developed in the BASIC training program into:

   a. goals that deal with **facts and information**; and

   b. goals that deal with **concepts and relationships** (see WORKSHEET VII).

   These distinctions, and the reasons for them, are addressed in Chapters 2 and 7 in the Handbook, and illustrated in Appendix C. (NOTE: the category of CONCEPTS AND RELATIONSHIPS as used here includes what is described in the Handbook as concepts, principles and procedures).

2. Try dividing the **skill** goals you listed for the unit of instruction you developed in the BASIC training program into:

   a. goals that deal with **subject-related skills**; and

   b. goals that deal with **life-role skills** (see WORKSHEET VII).

   These distinctions also are addressed in Chapter 2 of the Handbook and illustrated in Appendix C.

3. Recognize that all four categories of learning goals may not be appropriate for all units of instruction. Some units may call only for knowledge outcomes; some may call only for skill outcomes; and some may call for only one category of knowledge, e.g., concepts/relationships, or one category of skill, e.g., life-role skills. **Use the refined framework to guide goal differentiation where it is appropriate but never to force differentiation where it is inappropriate!**

4. Look to guidelines 2, 3 and 5 in CORE TEACHING/TESTING PRACTICE I (see p. 21) when drafting learning goals according to either the basic or the refined framework.

ILLUSTRATION

See the learning goals identified for instructional units in Appendix C.

SUPPORTING MATERIALS

Chapters 2 and 7 in the Handbook.

WORKSHEET VII

REFINED LEARNING GOALS FOR MY UNIT OF INSTRUCTION

Name _____ Course _____ Unit _____

GOALS

DEGREE OF EMPHASIS
High Moderate Low

A. What students should KNOW by the completion of the unit

Facts and Information

Concepts and Relationships

B. What students should BE ABLE TO DO by the completion of the unit

Subject-Related Skills

Life-role Skills

C. What PRODUCTS students should create or refine by the completion of the unit

CORE TEACHING/TESTING PRACTICE VIII

Adjusting an assessment plan to accommodate refined learning goals

GUIDELINES

1. Refine the listing of learning goals in your original assessment plan to match the goals listed on WORKSHEET VII. Use WORKSHEET VIIIa to do this.

2. On the basis of your experience in implementing your instructional unit as it was planned originally, develop a new assessment plan for goal mastery that reflects the refinements you have made in your goal statements. Review Guideline 3 in CORE TEACHING/TESTING PRACTICE II (pp 25 and 26), and Chapters 8 and 9 in the Handbook, as you engage in this process. Use the right hand columns on WORKSHEET VIIIa to outline your new assessment plan.

3. After thinking through how you plan to assess your refined learning goals for mastery, rethink the stance you took originally on **pretesting** and **progress testing** in your unit of instruction. Use WORKSHEET VIIIb to record any changes you plan to make in these areas. Also review Guidelines 1 and 2 in CORE TEACHING/TESTING PRACTICE II, and the illustrative plan for pretesting and progress testing on p. 31, as you engage in this process.

4. After completing the work called for in Guidelines 2 and 3 above, review the feasibility of what you have proposed in light of your experience with the unit as it was structured initially.

SUPPORTING MATERIALS

Core Teaching/Testing Practices II and III, Worksheets IIa and IIb, and Chapters 8 and 9 in the Handbook.

WORKSHEET VIIIa

A REFINED PLAN FOR THE ASSESSMENT OF GOAL MASTERY

Name _____ Course _____ Unit _____

	Objective Test Items	Essay or Other Products	Observation of Performance
Facts and Information			
Concepts and Relationships			
Subject-Related Skills			
Life-Role Skills			
Products to be Produced			

WORKSHEET VIIIb

A REFINED PLAN FOR PRETESTING AND PROGRESS TESTING

Name	Course	Unit

Pretesting

Progress Testing

Facts and Information

Concepts and Relationships

Subject-Related Skills

Life-Role Skills

Products to be Produced

CORE TEACHING/TESTING PRACTICE IX

Articulating UNIT goals with COURSE and PROGRAM goals

GUIDELINES

1. While the integration of teaching and testing is anchored to instructional units, it also can be applied to courses and programs of instruction. As a first step toward making this integration at the course level, try stating the learning goals for a selected course in the language of the framework outlined in CORE TEACHING/TESTING PRACTICE VII. Chapter 5 in the Handbook, and Appendix B and C in this Guide, should be helpful as you do this.

2. After drafting a tentative set of learning goals for the course you plan to work upon, identify the instructional units you plan to include within it. When you have identified these enter both the course goals and the titles of the instructional units on WORKSHEET IXa.

3. As a first step toward articulating your unit and course goals, make explicit the degree of emphasis each unit of instruction is to recieve within the course. In doing this be sure that the emphasis you plan to give to various units corresponds to the emphasis you wish to give to particular course goals. You can indicate the emphasis each unit is to receive on WORKSHEET IXa.

4. As a second step in the task of articulating your course goals with the learning goals for instructional units, outline on WORKSHEET IXb the major contribution(s) you expect each unit to make to your course goals.

5. As you engage in the process of spelling out the connection between your course goals and instructional units you are likely to find that both will change. If they do you may wish to recopy the work you have done on WORKSHEET IXa to WORKSHEET IXc to make it more readable.

6. The connection between **course** and **program** goals parallels the connection between course and ~~unit goals. While~~ the articulation of course and program goals is beyond the focus of the present training program, all schools need to deal with this connection. The last page in Chapter 4 of the Handbook, and Appendix B in this Guide, address this connection briefly. It also will be addressed in Day 5 of the training program.

SUPPORTING MATERIALS

Chapter 4 in the Handbook, and Appendix B and C in this Guide.

Name _____

Date _____

WORKSHEET IXa

ARTICULATING COURSE GOALS AND UNITS OF INSTRUCTION: STEP 1

_____ _____ _____

Course Title Credits Length

_____ _____

Prerequisites Terms Offered

Course Goals

Instructional Units Planned

Emphasis the Unit is to Receive
High Moderate Low

Name _____

Date _____

WORKSHEET IXb

ARTICULATING COURSE GOALS AND UNITS OF INSTRUCTION

Course Title	Credits	Length

Prerequisites	Terms Offered

Course Goals

Instructional Units	Major Contribution(s) Expected of Each Unit Toward Course Goal Attainment

Name _____

Date _____

WORKSHEET IXc

ARTICULATING COURSE GOALS AND UNITS OF INSTRUCTION: STEP 1 RECONSIDERED

Course Title	Credits	Length

Prerequisites	Terms Offered

Course Goals

Instructional Units Planned	Emphasis the Unit is to Receive		
	High	Moderate	Low

DAY 4 ACTIVITIES

Contents

Getting Ready for Day 4

At the conclusion of the third day of the train' q program (the first day of the ADVANCED training program) you left four items with your lead teacher:

1. a set of refined goal statements for the unit plan you worked on during the basic training program;

2. a refined assessment plan for the unit that reflected your refined goal statements;

3. an initial listing of the learning goals for the course of instruction you wish to work on during the advanced training program; and

4. the units of instruction to be included within it.

The first hour of day 4 in the training program has been set aside for feedback on these various pieces of work, and to discuss them with colleagues in light of the feedback you receive.

The central issue you will be dealing with during the fourth day of the training program is the matter of grading criteria and their connection to performance standards for goal attainment. Unless your school is very different than most schools, this is likely to be a troublesome and emotionally charged topic. It also is likely to be a demanding topic personally, for in addition to preparing an initial set of grading criteria for the course on which you are working you will be asked to address the issue of grading standards in your school generally. This will be done with your colleagues and school administrators. As background to this discussion your principal will outline district policies and practices that pertain to the issue.

In preparing to deal with this topic you should clarify your own thinking with respect to it, and bring whatever examples you might have of statements describing criteria you have established for grades in the various courses you teach. You might also wish to contact colleagues in other districts about the criteria they have established for grades, and how these criteria are connected to the attainment of learning goals by students.

A Suggested Work Plan For Day 4

8:30 Review of progress made in Day 3, and tasks ahead for Day 4 (principal, and others as appropriate).

8:40 Feedback on refined UNIT goal statements and assessment plans (lead teacher).

9:00 Feedback on COURSE goals and related instructional units (lead teacher).

9:30 Designing an assessment plan for a course of instruction:

a. Guidelines to consider when addressing this topic: See CORE TEACHING/ TESTING PRACTICE X (lead teacher).

10:00 Break

10:10 b. Prepare an initial assessment plan for the course of instruction on which you are working (independent work).

c. Exchange assessment plans with a colleague; mutually critique and refine.

11:30 Lunch

12:20 Linking grading criteria to performance standards for goal attainment:

a. Guidelines to consider when addressing this topic: See CORE TEACHING/ TESTING PRACTICE XI (lead teacher).

b. Prepare an initial set of grading criteria for the COURSE on which you are working (independent work).

c. Exchange grading criteria with a colleague; mutually critique and refine.

1:30 Reaching departmental and school-wide agreements on grading criteria, including criteria to be applied to slow and fast learning students:

a. Guidelines to consider when addressing this topic: See CORE TEACHING/ TESTING PRACTICE XII (lead teacher).

b. Reflections on district, school and department positions with respect to grading criteria and their connection to performance standards for goal attainment (principal and department chair).

c. Faculty beliefs and preferences about this issue (exchange among colleagues within departments).

d. Report on positions held about the topic within departments.

2:45 Adjust/refine the grading criteria you established initially for your course on the basis of these discussions, and then translate your course goals, unit titles and grading criteria into a CURRENT COURSE BRIEF (independent work; for assistance see WORKSHEET XIIb).

3:15 Prepare copies of your course brief and course assessment plan to leave with the lead teacher.

3:25 Planning for Day 5, and related homework assignments (lead teacher).

3:30 Adjourn

Notes On The Work Plan

1. **Designing an assessment plan for a course of instruction.**

Preparing an assessment plan for a course of instruction is a considerably more complex task than preparing an assessment plan for a unit of instruction. While developing an assessment plan at the course level involves many of the same general issues, for example, whether to assess student standing with respect to goal attainment prior to taking the course and how progress toward goal attainment is to be monitored during the course, two additional issues need to be addressed. One is the relative emphasis the various units of instruction within a course are to receive, and consequently the emphasis the learning goals within these units are to receive in the assessment plan for the course as a whole. The other is differentiating between the mastery of unit goals and the mastery of course goals, and deciding how course goal mastery is to be determined. Both are complex and intellectually demanding issues that have no ready nor easy solution.

2. **Linking grading criteria to performance standards for goal attainment.**

As you discovered in the BASIC training program establishing a connection between performance standards and grades that is meaningful to students and parents, and acceptable to one's peers and administrators, is a complex and difficult task. It is even more so when attempting to make these connections for a course as a whole. Because of this complexity all of the afternoon is devoted to this task. (For related comments, see page 82.)

3. **Reaching departmental and school wide agreements on grading criteria, including criteria to be applied to slow and fast learning students.**

It is not intended that this issue will be resolved during the course of the training period. It is intended however, that the issue will be dealt with in sufficient detail that its dimensions are clear, that district policies and practices that pertain to the issue are understood, and that the aspects of the issue that remain to be resolved within the district are agreed to. It also is intended that the discussion of this issue with colleagues and administrators will help you clarify your own thinking about the matter, and let you clarify your initial draft of grading criteria accordingly.

One of the elements that makes this issue so difficult and so charged emotionally, is deciding how grading standards are to be applied in light of student differences. One view of this, and it is the view reflected by most interpretations of mastery learning, is that a single set of criteria are to apply to all students in a class without differentiation according to the learning background or abilities of the students involved. The more traditional view of course, and this is the view that is predominant in most schools today, is that grading criteria need to be differentiated in some way to accommodate differences in learning backgrounds, abilities and accomplishments.

It is the issue of grading criteria that raises the question of fairness, equity, reasonableness, and forthrightness when it comes to assigning value to work performed. Questions pertaining to this issue are probably as difficult to resolve in the context of todays's society as the question of the learning outcomes we want for students in the first place, or how best to achieve these outcomes once they have been agreed to.

CORE TEACHING/TESTING PRACTICE X

Designing An Assessment Plan for a Course of Instruction

GUIDELINES

1. Determine whether the goals you have established for the course you are developing can be assessed directly, or whether you have to assess them indirectly. Do this by applying a "means" test: if a goal can be assessed meaningfully by using the same kind of measurement procedures you used to assess unit goals it can be assessed directly.

   If a goal is too broad or general to be assessed in this way, that is, it requires further definition or elaboration before such measurement procedures can be applied meaningfully, it probably will need to be assessed indirectly.

2. For course goals that need to be assessed indirectly try listing for each goal what you would consider to be two or more "indicators" that would be acceptable to yourself and others as evidence of goal attainment, and that can be assessed directly.

3. When you have identified indicators for all of your course goals that need to be assessed indirectly, prepare an assessment plan for the course as a whole in much the same way that you would for an instructional unit. WORKSHEET Xa is intended to be helpful in this process.

4. After you have firmed this level of thinking about assessment in your course decide what you plan to do with respect to **pretesting** and **progress testing.** In thinking about this issue re-read CORE TEACHING/TESTING PRACTICE II in the basic training program (see pp. 25 and 26). If you wish to develop a plan for pretesting and progress testing, you can record your plan on WORKSHEET Xb.

5. As in the case of your earlier work on unit testing, be sure that your overall assessment plan reflects the realities you face in your classroom and school. Unrealistic plans for assessment invite frustration and disappointment. You may wish to re-read Chapter 3 in the Handbook as you reflect on the reality of doing what you have proposed to do.

SUPPORTING MATERIALS

Chapters 3, 4, 5 and 8 in the Handbook; CORE TEACHING/TESTING PRACTICE II in the BASIC training program.

Name _____

Date _____

WORKSHEET Xa

A DESIGN FOR ASSESSING THE ATTAINMENT OF COURSE GOALS

Course Title	Credits	Length

Prerequisites	Terms Offered

	Objective Test Items	Essay or Other Products	Observation of Performance
COURSE GOALS THAT CAN BE ASSESSED DIRECTLY			

COURSE GOALS THAT NEED TO BE ASSESSED INDIRECTLY (for each of these goals list the indicators you will be looking to as evidence of goal attainment, and then how you plan to assess each indicator)

Name _____

Date _____

WORKSHEET Xb

A PLAN FOR PRETESTING AND PROGRESS TESTING AROUND COURSE GOALS

_____ _____ _____

Course Title Credits Length

_____ _____

Prerequisites Terms Offered

Pretesting

Progress Testing

KNOWLEDGE Outcomes

SKILL Outcomes

PRODUCTS to be Produced

CORE TEACHING/TESTING PRACTICE XI

Linking Grading Criteria to Performance Standards for Goal Attainment

GUIDELINES

1. Review the performance standards you established for your unit of instruction in the BASIC training program, and decide whether a comparable set of standards could be prepared that would apply meaningfully to the course you are developing. If you think they could, prepare an initial set of standards for goal attainment that apply to your course as a whole.

2. If you decide that the kind of performance standards you established for your unit of instruction do not work when applied to your course, try drafting a set of standards that appear to be more appropriate for the course. Chapter 13 in the Handbook should be helpful in this process.

3. After drafting an initial set of performance standards review the connection you drew between performance standards and grading criteria in the instructional unit you developed in the BASIC training program. See if this same kind of connection will work when linking performance standards and grading criteria for a course as a whole. In thinking through this issue be sure you are clear about how goal accomplishment for **each unit of instruction** is to be taken into account. Also be sure that you differentiate in your thinking between **progress toward** goal attainment and **goal mastery.**

4. Given all the above prepare an initial draft of what you feel the connection should be between performance standards and grading criteria for the course you are developing. Chapter 13 in the Handbook should be helpful in this process.

5. After completing item 4 decide how you will communicate these decisions to students and your colleagues. WORKSHEET XI is intended to be helpful in this process.

SUPPORTING MATERIALS

Pages 57-59, 144-145 and Chapter 13 in the Handbook. Appendix A in this Guide; and CORE TEACHING/TESTING PRACTICE IV in the BASIC training program.

Name _____

Date _____

WORKSHEET XI

PERFORMANCE EXPECTATIONS FOR GOAL ATTAINMENT AND GRADING CRITERIA

Course Title	Credits	Length

Prerequisites	Terms Offered

PERFORMANCE EXPECTATIONS

Course Goals

Unit goals

GRADING CRITERIA

For a Grade of D

For a Grade of C

For a Grade of B

For a Grade of A

CORE TEACHING/TESTING PRACTICE XII

Reaching Departmental and School-Wide Agreement on Grading Criteria

GUIDELINES

1. As a point of departure in this task have your principal review all school, district, state and federal policies that pertain to grading and promotion/graduation practices, including how these practices are to be adjusted to accommodate slow and fast learning students. Also ask your principal to make copies of these policies available to faculty for study.

2. After this review have your principal address a) the extent to which these policies currently are adhered to in the district; b) the consequences of not adhering to them; and c) any future plans within the district that may pertain to them. As a way of adding meaning to this discussion, ask your principal to bring illustrative criteria that other schools are using as a guide to grading.

3. Using the information provided by your principal as a basis for discussion, meet with members of your department to determine the grading criteria the **department** would prefer to apply in the courses it offers. These should be spelled out in general terms, with specific information added for specific courses when the general criteria do not apply or are not sufficiently detailed. WORKSHEET XIIa is designed to capture these agreements within a department.

4. Using all of the above as a basis for clarifying your own thinking, adjust or refine the grading criteria you established initially for your course. Be sure your refined criteria a) take into account performance on both course goals and unit goals; distinguish clearly between **progress made toward goal attainment** and **goal mastery**; and c) address the issue of application to slow and fast learning students.

5. When you are satisfied with the connections you have drawn between grading criteria and performance standards for goal attainment, translate your course goals, unit titles and grading criteria into a CURRENT COURSE BRIEF. WORKSHEET XIIb provides a format you might wish to use in doing this.

SUPPORTING MATERIALS

Chapter 13 in the Handbook; Appendix A in this Guide; and CORE TEACHING/TESTING PRACTICES IV and V in the BASIC training program.

WORKSHEET XIIa

GRADING CRITERIA AND PRACTICES RECOMMENDED BY THE _____ DEPARTMENT

General Criteria for Grades

A grade of A (Mastery)

A grade of B (Partial mastery)

A grade of C (Minimally acceptable work)

Adaptations in Criteria for Specific Courses

Course:

Course:

Course:

Adaptations in Criteria for Slow and Fast Learning Students

Slow Learning Students

Fast Learning Students

Name _____

Date _____

WORKSHEET XIIb

A WORKING DRAFT OF A CURRENT COURSE BRIEF

Course Title	Credits	Length

Prerequisites	Terms Offered

Course Goals

Instructional Units

Grading Criteria

For a Grade of A (Mastery)

For a Grade of B (Partial mastery)

For a Grade of A (Minimally acceptable work)

Credit Options

Credit by Examination
Yes ____ No ____

Supplementary Projects
Yes ____ No ____

Advanced Placement
Yes ____ No ____

DAY 5 ACTIVITIES

Contents

Getting Ready for Day 5

The issues to be addressed in the last day of the training program may be the most difficult to resolve of any you have faced in thinking about the integration of teaching and testing practices. The issue of how information on student standing with respect to goal attainment is to be used in planning and presenting a COURSE of instruction, for example, is considerably more complex to resolve than how information of this kind is to be used in planning and presenting a UNIT of instruction. Also, the issue of how to deal with extreme differences in student progress toward goal attainment takes on added dimensions of complexity when working at the course level.

One of the reasons why these issues grow in complexity as the focus of teaching and testing moves from units to courses is the implication they carry for school-wide policies and practices. Differences in how these matters are dealt with in the context of instructional units can be accommodated within a school without great difficulty. Differences in how they are dealt with in a course as a whole, however, or in different programs within a school, quickly becomes another matter.

The aim of the last day of the training program is to bring these various issues into clear focus, and to move forward as far as possible in their resolution **as a total school or department faculty.** Within this broader context time is provided for you to sort out your personal preferences about these matters, and to apply them to the course you have been developing as a part of the training program. In preparation for the day you might wish to reread chapters 4 and 13 in the Handbook if you have not read them recently.

A Suggested Work Plan For Day 5

8:30 Review of progress made in Day 4, and tasks ahead for Day 5 (principal, and others as appropriate).

8:40 Feedback on course briefs and course assessment plans (lead teacher)

9:00 Reaching departmental and school-wide agreements on using information about student goal attainment in course planning and presentation.

Guidelines to consider when addressing this topic: See CORE TEACHING/TESTING PRACTICE XIII (lead teacher).

b. Reflections on district, school and department positions with respect to this issue (principal and department chair).

c. Faculty beliefs and preferences about this issue (exchange among colleagues within departments.

d. Report of positions held on the issue within departments.

10:00 Break

10:10 In light of the discussion before the break, prepare your own plan for using information about student goal attainment in planning and presenting the course on which you are working (independent work).

10:30 Managing goal-based instruction with students working at expected levels of accomplishment:

a. See CORE TEACHING/TESTING PRACTICE XIV (lead teacher).

b. Reflections on roles, responsibilities and resources needed to effectively implement goal-based instructional practices (principal and department chair).

c. Faculty beliefs and preferences about this issue (colleague exchange within departments).

d. Report of positions held on the issue within departments.

11:30 Lunch

12:20 Managing goal-based instruction with students who need corrective or remedial assistance to accomplish desired learning goals:

a. See CORE TEACHING/TESTING PRACTICE XV (lead teacher).

b. Reflections on roles, responsibilities and resources needed to effectively implement goal-based instruction with students needing corrective or remedial assistance (principal and department chair).

c. Faculty beliefs and preferences about this issue (colleague exchange within departments).

d. Report of positions held on the issue within departments.

1:30 Managing goal-based instruction with students who quickly master the learning goals set for a class as a whole:

a. See CORE TEACHING/TESTING PRACTICE XVI (lead teacher).

b. Reflections on roles, responsibilities and resources needed to effectively implement goal-based instruction with fast learning students (principal and department chair).

c. Faculty beliefs and preferences about this issue (colleague exchange within departments).

d. Report of positions held on the issue within departments.

2:30 On the basis of the day's discussions outline how you plan to use information about student goal attainment in the course on which you are working (independent work).

3:00 Prepare a copy of your plan for using information about student goal attainment and leave it with the lead teacher.

3:10 Extending the integration of teaching and testing to PROGRAMS of instruction: A further step toward improving the quality of education at grades 9 through 12 (principal and department chair).

3:25 Next steps

3:30 Adjourn

Notes On The Work Plan

1. **Reaching departmental and school-wide agreement on using information about student goal attainment in course planning and presentation.**

   Some districts have clear cut policies with respect to the use of information on student goal attainment in course planning and presentation. A district, for example, that has adopted a mastery approach to teaching and learning will have clear cut and detailed policies on this matter. Districts who have not gone so far as to adopt mastery learning as a guide to instruction may nevertheless have policies that call for the use of student records and test reports when planning instruction for the year. Many districts, of course, have no policies that pertain to the use of information on student learning, and if your district is one of these this aspect of the day's work may lead you and your colleagues into new areas of debate.

   In preparing for this phase in the day's activities you may wish to contact teachers in other districts to see how they use information on student learning when planning or presenting courses, and to obtain copies of whatever policies their districts have in this area. Potential uses of information about goal attainment is provided on p. 101.

2. **Managing goal-based instruction with students working at expected levels of accomplishment.**

   Up to this point in the training program you have dealt with reasonably discreet aspects of the process of integrating teaching and testing. This topic in the training program is designed to introduce you to some guidelines and procedures for dealing with these discreet aspects of the process over time. The guidelines and procedures you will encounter first are designed for students working at expected levels of accomplishment. Later in the day you will be introduced to guidelines and procedures for working with students who deviate appreciably from grade-level goal attainment.

3. **Managing goal-based instruction with students who need corrective or remedial assistance to accomplish desired learning goals.**

   During the second day of the BASIC training program you were introduced to the complexities that are encountered in a mastery approach to instruction when it is applied to slow and fast learning students. These complexities multiply when the focus shifts to courses and programs of study. The purpose of the 12:20 segment in this final day of the training program is to give you some general guidelines and procedures for dealing with slow learning students in the context of mastery learning over the course of a term or year or instruction. These guidelines will not provide the detail you need to deal with all related issues, but they should prove to be of some help.

4. **Managing goal-based instruction with students who quickly master the learning goals set for a class as a whole.**

   In many respects students who are quick to master the learning goals of a course add as much complexity and pose as many demands on the time and ingenuity of teachers in a mastery approach to instruction as students who are slow to master learning goals. The 1:30 segment of the work plan is designed to give you some general guidelines and procedures for working with these students in a manner that is appropriate to both their actual level of accomplishment and their potential

for learning. As in the case of the guidelines and procedures provided for slow learners, these also lack the detail you will need to deal with all related issues, but they should be of some help.

5. Computer applications in testing, record keeping and instruction. The effective management of goal-based instruction depends on the effective management of information, and in today's world this usually involves the use of computers. In fact, without the aid of computer managed information it is doubtful that the approach to goal-based instruction that is being advocated in the training program would be possible. While time has not been set aside in the training program for this topic, it is essential that it be dealt with by a district or school faculty before a decision is made to implement a goal-based approach to instruction. The last page of this Guide contains some introductory notes about the topic.

POTENTIAL USES OF INFORMATION ABOUT GOAL ATTAINMENT

At The Beginning of a Term or School Year

1. A factor to consider in refining student placement decisions
2. A factor to consider in forming instructional groups
3. A factor to consider in projecting learning gains that can be expected for students
4. A basis for short-range instructional planning
5. A basis for long-range instructional planning
6. A basis for discussions with parents
7. A background to interactions wth students around specific learning tasks

During the Term or School Year

8. Use to update the goal attainment profiles of students who vary appreciably from grade-level goal attainment
9. Use to refine instructional groups
10. Use to refine short- and long-range instructional plans for students working at grade level
11. Use to refine short- and long-range plans for students working above or below grade level
12. Take into account in discussions with parents
13. Take into account when grading
14. Take into account when considering courses or program placement decisions
15. A background to interactions with students around specific learning tasks

Near the End of the Term or School Year

16. Take into account when making course or program placement decisions
17. Take into account when grading
18. Use to prepare goal attainment profiles of students who are working above or below grade level

CORE TEACHING/TESTING PRACTICE XIII

Reaching Departmental and School-Wide Agreements on Using Information About Student Goal Attainment in Course Planning and Presentation

GUIDELINES

1. As a point of departure review with your colleagues and principal the potential uses of information about student goal attainment that are listed on the previous page. Use this list to determine how many of these practices are regularly followed by faculty in your department.

2. Following this discussion ask your principal to review all school, district and state requirements pertaining to the use of information about student goal attainment in course planning or presentation, including record keeping. Also ask your principal to identify the departments in your school that do most with information about student goal attainment, and to identify departments or schools elsewhere in the state that use information about student goal attainment in an exemplary manner.

3. With this information as background, meet with members of your department to determine the **department's** position with respect to using information about student goal attainment in course planning and presentation. WORKSHEET XIIIa is designed to capture these agreements within a department.

4. After reaching general agreement on these issues, turn next to the issue of record keeping. To the extent possible, resolve this issue on a school-wide basis. Minimally, resolve it within your department. The comments and guidelines appearing on pp. 103 and 104 are intended to be helpful in resolving this troublesome issue. WORKSHEET XIIIa also is designed to capture these agreements within a department.

5. Using all of the above as a foundation, outline the uses you personally plan to make of information about student goal attainment in planning and presenting the course of instruction you are developing. WORKSHEET XIIIb has been designed to be helpful to you in doing this.

SUPPORTING MATERIALS

Chapter 11 in the Handbook; CORE TEACHING/TESTING PRACTICE VI in the BASIC training program.

NOTES ON RECORDING STUDENT PROGRESS TOWARD GOAL ATTAINMENT

Information about student progress toward goal attainment serves two broad purposes. One is to help teachers make the best instructional decisions possible at a particular point in time for a particular student. The other, which contributes to the first, is to know how far each student has progressed toward the learning goals he or she is expected to accomplish during a term or the school year. It is generally conceded by teachers that some form of record keeping is needed for this last purpose.

Teachers implementing goal-based instructional programs differ among themselves on the kind of record keeping system they feel is needed to monitor the progress of students toward goal attainment. Most find a record of progress that can be kept in a grade book to be adequate. This usually involves a simple marking system that indicates the progress each student is making toward a particular learning goal.

Some find this approach to record keeping to be inadequate, and choose instead to keep a record of each student's learning around specific indicators of goal attainment. This obviously requires a more complex approach to record keeping, and may or may not be able to be managed in the space provided in grade books.

A decision about records to keep on student progress toward goal attainment is complicated by the fact that such records serve multiple purposes. Teachers use them to plan instruction, confer with students and parents, prepare grades and update end-of-course or end-of-year goal attainment profiles for low and high achieving students. Principals may also want to have a record of student progress toward goal attainment available when meeting with parents around course or program placement decisions, or want to use a record of this kind as a management tool for supervision. **It is the fact of multiple use** that complicates the issue of record keeping, and this is a condition that is likely to continue.

The position advocated in this training program with respect to record keeping by teachers is reasonably straightforward, though it requires that teachers and administrators within a district reach agreement about specifics. The position is reflected in four guidelines:

GUIDELINE 1. Teachers need to keep records that permit them to see at a glance the progress each child, and the progress the class as a whole, is making toward the learning goals that are to be accomplished during a term or the school year.

GUIDELINE 2. Records of student progress toward goal attainment need to be in a form that is understandable to others, including a substitute or colleague who may be called upon to assume responsibility for a class.

GUIDELINE 3. The uses to be made of these records, as well as persons other than the teacher who are likely to use them, need to be understood and agreed to by the teacher.

GUIDELINE 4. The specifics of the records teachers are to keep on student progress toward goal attainment are to be worked out between teachers and administrators within a district or building in a manner that is consistent with guidelines 1 through 3.

The second page of WORKSHEET XIIIa is designed to help members of a department clarify the position they wish to take about record keeping **as a department.** The second page of WORKSHEET XIVa is designed to help you clarify the position **you personally** want to take about record keeping in the course you are developing through the training program.

WORKSHEET XIIIa

RECOMMENDATIONS FROM THE _____ DEPARTMENT ON USES TO BE MADE OF INFORMATION ABOUT STUDENT GOAL ATTAINMENT IN COURSE PLANNING AND PRESENTATION

Recommendations on Use

POTENTIAL USE	PLAN OF USE		
	Yes	No	Optional
At the Beginning of a Term or School Year			
1. A factor to consider in refining student placement decisions			
2. A factor to consider in forming instructional groups			
3. A factor to consider in projecting learning gains that can be expected for students			
4. A basis for short-range instructional planning			
5. A basis for long-range instructional planning			
6. A basis for discussions with parents			
7. A background to interactions wth students around specific learning tasks			
During the Term or School Year			
8. Use to update the goal attainment profiles of students who vary appreciably from grade-level goal attainment			
9. Use to refine instructional groups			
10. Use to refine short- and long-range instructional plans for students working at grade level			
11. Use to refine short- and long-range plans for students working above or below grade level			
12. Take into account in discussions with parents			
13. Take into account when grading			
14. Take into account when considering courses or program placement decisions			
15. A background to interactions with students around specific learning tasks			
Near the End of the Term or School Year			
16. Take into account when making course or program placement decisions			
17. Take into account when grading			
18. Use to prepare goal attainment profiles of students who are working above or below grade level			

(over)

WORKSHEET XIIIa .... continued

Recommendations on Record Keeping

RECORD KEEPING OPTIONS	PLAN OF USE Yes	No	Optional
1. A record of GOALS MASTERED by individual students			
a. Course goals			
b. Unit goals			
2. A record of GOALS MASTERED by a class as a whole			
a. Course goals			
b. Unit goals			
3. A record of INDIVIDUAL STUDENT PROGRESS TOWARD goal attainment			
a. Course goals			
b. Unit goals			
4. A record of progress toward goal attainment by A CLASS AS A WHOLE			
a. Course goals			
b. Unit goals			
5. A record of assignments completed and tests taken			
a. For individual students			
b. For a class as a whole			
6. A record of grades received			
a. For individual students			
b. For a class as a whole			

Name _____
Date _____

WORKSHEET XIIIb
MY PLAN FOR USING INFORMATION ABOUT STUDENT GOAL ATTAINMENT IN THIS COURSE

_____ _____ _____
Course Title **Credits** **Length**

_____ _____
Prerequisites **Terms Offered**

POTENTIAL USE
At the Beginning of a Term or School Year

PLAN OF USE
Yes No Optional

1. A factor to consider in refining student placement decisions
2. A factor to consider in forming instructional groups
3. A factor to consider in projecting learning gains that can be expected for students
4. A basis for short-range instructional planning
5. A basis for long-range instructional planning
6. A basis for discussions with parents
7. A background to interactions wth students around specific learning tasks

During the Term or School Year

8. Use to update the goal attainment profiles of students who vary appreciably from grade-level goal attainment
9. Use to refine instructional groups
10. Use to refine short- and long-range instructional plans for students working at grade level
11. Use to refine short- and long-range plans for students working above or below grade level
12. Take into account in discussions with parents
13. Take into account when grading
14. Take into account when considering courses or program placement decisions
15. A background to interactions with students around specific learning tasks

Near the End of the Term or School Year

16. Take into account when making course or program placement decisions
17. Take into account when grading
18. Use to prepare goal attainment profiles of students who are working above or below grade level

(over)

WORKSHEET XIIIb .... continued

RECORD KEEPING OPTIONS	PLAN OF USE Yes	No	Optional
1. A record of GOALS MASTERED by individual students			
a. Course goals			
b. Unit goals			
2. A record of GOALS MASTERED by a class as a whole			
a. Course goals			
b. Unit goals			
3. A record of INDIVIDUAL STUDENT PROGRESS TOWARD goal attainment			
a. Course goals			
b. Unit goals			
4. A record of progress toward goal attainment by A CLASS AS A WHOLE			
a. Course goals			
b. Unit goals			
5. A record of assignments completed and tests taken			
a. For individual students			
b. For a class as a whole			
6. A record of grades received			
a. For individual students			
b. For a class as a whole			

CORE TEACHING/TESTING PRACTICE XIV

Guidelines for Managing Goal-Based Instruction with Students Working at Expected Levels of Accomplishment

Guideline 1. Confirm the appropriateness of student course and program placement. This will require several weeks to do, and will depend heavily on knowledge gained through first-hand experience with students.

Guideline 2. Pinpoint the goal attainment of each student. In doing this use whatever information you have available on goal accomplishment at the beginning of the term, as well as the knowledge gained through working with your students. If you do not have the information you need to pinpoint learning accomplishments for some or all of your students, develop and use the diagnostic tests you need to obtain this information.

Guideline 3. Project the learning accomplishments that can be expected for each of your students given their present level of learning, their ability and motivation to learn, the instructional load you are carrying, etc.

Guideline 4. Plan instruction and instructional groups to reflect the present learning accomplishments and projected learning gains of your students. Make a tentative allocation of the time you plan to spend on instruction in each goal area during the term, including time for review prior to the end-of-term examinations.

Guideline 5. If appropriate, discuss the present learning accomplishments of your students, and projected learning gains, with your principal. Let him or her know where your students stand with respect to the learning outcomes desired by the end of the course, and how well you think they will do in accomplishing them.

If you share this information with your principal also comment on the instructional planning that you have done, including the allocation of time to goal areas. Signal any concerns or needs you have about accomplishing the instructional task in front of you, including concerns about time or materials for instruction if these appear to be inadequate.

Guideline 6. Inform students of the learning goals that have been established for your course. When initiating instruction in a goal area tell the students why the learning goals for the area are important. Let them see how what they learn will be useful now and in the future. Also, show them what they will be able to do with their learning.

Guideline 7. Monitor student progress toward goal attainment throughout the term, and adapt learning groups and instructional plans to accommodate progress made. To the extent possible, practice all you have learned about the integration of teaching and testing.

Guideline 8. Regularly inform students about progress being made toward goal attainment. Talk with students about test results. Also, to the extent appropriate, share test results and other work done in class with parents. Use tests to identify learning strengths and weaknesses, rather than sort students for purposes of grading.

Guideline 9. Grade student performance in a manner that reflects progress toward goal attainment. Make the criteria for a particular grade clear, and hold students to these criteria.

Guideline 10. Administer a mid-term test to check student progress toward goal attainment, and determine the progress that still needs to be made. If needed, on the basis of mid-term test results, adjust the time you have allocated for instruction to goal areas.

Guideline 11. Administer a comprehensive end-of-term examination to determine whether your students have accomplished the learning outcomes that have been established for the course — and the learning gains you projected for each student.

Guideline 12. Prepare information that informs other teachers and your principal about the learning of students that deviate appreciably from the expected level of goal attainment.

Guideline 13. Prepare recommendations for course or program placement that reflect progress toward goal attainment.

Guideline 14. Provide any additional information requested by district administrators about the effectiveness of your course, or benefits and costs associated with it.

WORKSHEET XIVa

RECOMMENDATIONS FROM THE _____ DEPARTMENT ON GUIDELINES TO FOLLOW IN MANAGING GOAL-BASED INSTRUCTION WITH STUDENTS WORKING AT EXPECTED LEVELS OF ACCOMPLISHMENT

(Select from, add to or modify the guidelines listed on pages 109 and 110)

1.

2.

3.

4.

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7.

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10.

11.

12.

13.

14.

___

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Name _____

Date _____

WORKSHEET XIVb

THE GUIDELINES I PLAN TO FOLLOW IN IMPLEMENTING THIS COURSE WITH STUDENTS WORKING AT THE EXPECTED RATE OF GOAL ACCOMPLISHMENT

Course Title	Credits	Length

Prerequisites	Terms Offered

1.

2.

3.

4.

5.

6.

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10.

11.

12.

13.

14.

15.

16.

CORE TEACHING/TESTING PRACTICE XV

Guidelines for Managing Goal-Based Instruction With Students Who Need Corrective or Remedial Assistance to Accomplish Desired Learning Goals

In addition to the Guidelines outlined on pp. 109 and 110 for working with students who are progressing at an expected rate of goal accomplishment, consider the following guidelines as well.

Guideline 15. Determine as accurately as you can the specific learning goals for your course that a student has or has not accomplished. If you are not able to make this determination from the evidence you have at hand, you should administer a goal-based diagnostic or "placement" test that will give you the information you need.

Guideline 16. Look at all the information you have about a student's performance in each goal area to determine as best you can where learning difficulties lie. In this regard do a careful analysis of the student's response to individual items on all tests or quizzes that have been administered, with items organized by goal area. Look for error patterns across goal areas, as well as errors on specific items within goal areas.

Guideline 17. Using the information you have on error patterns within and across goal areas, as well as any other information you may have about a student as a learner, plan a program of instruction that is designed to **start with the learner where he or she is** with respect to goal attainment and end with goal mastery. In designing this program look carefully at the **sequencing** and the **level of difficulty** of instructional units within it, for the program you develop will need to provide a high ratio of successful to non-successful learning experiences (80/20 to 90/10) if it is to lead to the kind of learning progress that is desired.

Guideline 18. In designing remedial or corrective learning programs be sure to allow the extra time for learning they require. Also consider assigning the student a "peer tutor" who has mastered the particular set of learning goals that the student needs to work toward, or establishing "cooperative learning groups" of students who are working toward a common set of learning goals.

Guideline 19. Inform the student's parents about the corrective instructional program that is underway, and how they can help with it. The latter is particularly important if homework assignments are a part of the corrective program.

Guideline 20. Carefully monitor the student's progress toward goal attainment, and keep the student and his or her parents informed of progress made. If progress is not being made, troubleshoot once more for possible causes of the learning difficulty and decide whether you are likely to be able to do anything about it by yourself. If you think you can, restructure the student's plan for learning accordingly. If you think you can't, request assistance.

WORKSHEET XVa

RECOMMENDATIONS FROM THE _____ DEPARTMENT ON GUIDELINES TO FOLLOW IN MANAGING GOAL-BASED INSTRUCTION WITH STUDENTS WHO NEED CORRECTIVE OR REMEDIAL ASSISTANCE TO ACCOMPLISH DESIRED LEARNING GOALS

(select from, add to or modify the guidelines listed on p. 113)

15.

16.

17.

18.

19.

20.

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Name _____

Date _____

WORKSHEET XVb

THE GUIDELINES I PLAN TO FOLLOW IN IMPLEMENTING THIS COURSE WITH STUDENTS WHO NEED CORRECTIVE OR REMEDIAL ASSISTANCE IN ACCOMPLISHING DESIRED LEARNING GOALS

Course Title	Credits	Length
Prerequisites	Terms Offered	

15.

16.

17.

18.

19.

20.

CORE TEACHING/TESTING PRACTICE XVI

Guidelines for Managing Goal-Based Instruction with Students Who Quickly Master the Learning Goals Set for a Class as a Whole

In addition to the Guidelines outlined on pp. 109 and 110 with students who are progressing at an expected rate of goal accomplishment, consider the following guidelines as well.

Guideline 21. Determine as soon as possible whether the student would be best served by enrolling in a more advanced course, or continuing in your course with"enrichment" or "advanced learning" activities.

Guideline 22. If the decision is to have the student remain in your class, plan the enrichment or advanced learning activities that the student is to pursue carefully. Do everything you possibly can to avoid having these activities become essentially "spaces of time to fill" or "busy work."

Guideline 23. Consider asking the student to help in the design of these activities. Also treat these activities as opportunities for "independent" work, and as vehicles by which students can learn to use the rich array of resources for learning available to them outside of a classroom.

Guideline 24. In designing these learning experiences use both class time and homework assignments. Also consider involving the student in group projects, and assigning the student a peer tutor from an advanced class in the same or related subject area. To the extent feasible, keep parents informed of the enrichment program that is underway, and how they can help with it.

Guideline 25. Carefully monitor the student's involvement in and performance around enrichment activities, as well as his or her continued progress toward the mastery of learning goals all students are expected to accomplish. Keep the student informed of your sense of his or her performance on both counts.

WORKSHEET XVIa

RECOMMENDATIONS FROM THE _____ DEPARTMENT ON GUIDELINES TO FOLLOW IN MANAGING GOAL-BASED INSTRUCTION WITH STUDENTS WHO QUICKLY MASTER THE LEARNING GOALS SET FOR A CLASS AS A WHOLE

(select from, add to or modify the guidelines listed on p. 117)

21.

22.

23.

24.

25.

Name _____

Date _____

WORKSHEET XVIb

THE GUIDELINES I PLAN TO FOLLOW IN IMPLEMENTING THIS COURSE WITH STUDENTS WHO QUICKLY MASTER THE LEARNING GOALS SET FOR A CLASS AS A WHOLE

Course Title	Credits	Length
Prerequisites	Terms Offered	

21.

22.

23.

24.

25.

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Notes on Computer Applications in Testing, Record Keeping and Instruction

When implementing instructional programs that effectively integrate teaching and testing you will need to take full advantage of micro-computers. Three activities are particularly amenable to assistance by computers:

a. test scoring and analysis;

b. record keeping and grading; and

c. reporting student work to parents.

Computers can save teachers a great deal of time in these areas and increase accuracy as well. Commercially prepared programs designed to assist with these activities are becoming increasingly available.

Computers can also save teachers time in two additional ways:

d. the preparation and scoring of teacher designed tests using items from a test item pool; and

e. the analysis and reporting of student achievement information for purposes of program evaluation.

Obviously they also can assist with instruction directly.

While computers can be helpful in all these areas they are not esential. Teachers can still create tests, and tests given can be scored by hand, either by teachers or aides. Records can still be entered by hand in grade books. Item analysis information from tests given is more difficult to obtain without computer assistance, but even this is not impossible. Computers are helpful tools when it comes to managing information, particularly the kind of information called for in an instructional program that integrates teaching and testing, but such programs can be implemented without them.

APPENDIX A

NOTES ON MASTERY LEARNING*

Summary Comments

"Mastery learning has become a "catch-word" for a number of current instructional and evaluative innovations. The strategy is often confused with competency-based education and with indiviudalized instruction, probably because the system is committed to criterion-referenced evaluation and to a strong emphasis on feedback and correctives throughout the learning experience. Yet the group-based, teacher-paced model of mastery learning that has been developed by Block and Anderson (1975) is not the same. It is an integrated instructional system, a logical step-by-step method for creating a learning process in which most students can achieve at a high level.

"Mastery learning was developed from a theoretical model in which school learning was seen as a function of a student's opportunity to learn, perseverance, and aptitude (defined as time needed to learn), and in terms of the quality of his/her instruction. The instructional strategy attempts to improve those factors under the direct control of teachers--namely, student opportunity to learn and the quality of instruction. There are six major components in the strategy: formal specification of cognitive objectives; division of course content (and objectives) into instructional units; formative/diagnostic evaluation; corrective or remedial instruction; and criterion-referenced summative evaluation.

"The research review provides evidence that the mastery learning instructional strategy significantly improves student acquisition of cognitive skills and significantly reduces the amount of variability in achievement within a group of students. There is a limited but growing body of data that favor mastery learning from the standpoint of retention and transfer of learning and student attitudes toward themselves and toward the subject matter studied.

"The planning process for teachers wanting to implement mastery learning is demanding. The teacher must assume the roles of curriculum planner, test developer, instructor, instructional designer, and classroom organizer. Because the planning for mastery teaching is so time-consuming, practitioners and researchers alike recommend a modest effort at initial implementation, e.g., attempting to develop a single unit as a start. Further, potential implementers would benefit from suggestions and even units developed elsewhere.

"Mastery learning, in summary, is a strategy that demands that more attention be paid to the impact of the school's instructional processes on student learning than to the impact of individual student differences on learning. When such a suportive instructional system is provided, the school has a potential for realizing the strategy's objective that most students can learn all that the school has to teach." (from pp. iii-v)

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*Taken from Doris Ryan's and Martha Schmidt's monograph Mastery Learning: Theory, Research, and Implementation. Toronto, Ontario: The Ontario Institute for Studies in Education, 1979.

Steps in the Process

Steps 1-3: Pre-Planning

1. Teachers set course objectives, write summative (term) tests, and set mastery levels.

2. Teachers divide the course into instructional units (usually covering about two weeks), set unit objectives, write formative (unit) tests which are **not** to be used in student evaluation but rather in diagnosing learning errors, and they set a level of mastery by which to identify students needing extra time **and** instruction.

3. Teachers plan and develop initial instruction and initial student activities. They also plan and develop correctives (additional instruction and student activities for those who may need them).

Step 4: Teaching, Testing

4. Teachers provide instruction and involve students in the learning process for a unit. At the end of the period of instruction (usually not longer than two weeks), a formative/diagnostic test is given. **All students write this at one time**, and the results are not used to evaluate students, but rather to help the teacher decide what reteaching is needed.

Steps 5 and 6: Reteaching, Possible Retesting

5. Immediately following the formative test analysis, students are directed (under teacher guidance **in the classroom** to: (a) enrichment activities (for those who have mastered); (b) remedial or corrective activities (for those who have not mastered).

6. The teacher decides when the class as a whole should move to the next unit. This decision is taken on the basis of the progress of students during the corrective process. (For **some** subjects, it may be necessary to re-administer a formative test to provide evidence that students are ready to progress to the next unit. This would be appropriate for courses such as maths in which the learning of one unit is **essential** for the learning of another. For other subjects, it may be sufficient to provide a few days of additional instruction and practice to students before moving on.) **Note** that students are **not** to rewrite formative tests whenever they wish; the tests are a part of the system and occur in the sequence noted here.

Step 7: New Cycle

7. The teacher begins instruction on a new unit, and the cycle (steps 4-6) begins again.

Step 8: Summative Testing

8. At the end of the term or course, a summative test (which was written to evaluate mastery of the objectives set in step 1) is given. Students are evaluated on the basis of **this test**, and their marks correspond with achievement levels set **prior** to the instruction of the first unit in the term.

(from pp. 7 and 8)

Additional Observations

"From what I know now about mastery learning implementation, I would conclude that it is always more difficult to implement the strategy in a secondary than in an elementary school. This is especially true if the strategy has not been used in the feeder elementary schools." (from p. 10)

"This enormously challenging and demanding role for the teacher as instructional planner, not just curricular planner, must be viewed at once as the major constraint and the major facilitator of implementation. As a constraint, teachers may be tempted to allow students more time to indicate mastery but may not be prepared to oversee the use of that time in class or to pre-plan alternative instructional activities and/or materials." (from p. 11)

"The planning and use of a feedback-corrective process in the classroom itself . . . is the major facilitator of full and valid implementation. This process is the very heart of the mastery strategy in terms of potential impact on student learning. This is the stage in whichs students spend time correcting their learning errors that have been identified in the diagnostic unit tests." (from p. 11)

"The teacher's role, then, is a very demanding one under mastery learning. The role includes that of curriculum planner, test developer, instructor, instructional designer, and classroom organizer. We believe that Block is right in suggesting that teachers identify a block of time they are willing to devote to trying the strategy, and that they try to develop and use the entire process for a single unit. The motto is, "start small." The success they will likely enjoy will be a great motivator to try another unit in this way." (from p. 11)

Related References

Block, J. H. Theory Into Practice #19: Promoting Excellence Through Mastery Learning. Columbus, Ohio: College of Education, The Ohio State University, Winter, 1980.

Block, J.H. and Anderson, L.W. Mastery Learning in Classroom Instruction. New York: McMillan, 1975.

Bloom, B.S. Human Characteristics and School Learning. New York: McGraw-Hill, 1976.

APPENDIX B

NOTES ON THE ARTICULATION OF UNIT, COURSE AND PROGRAM GOALS

Program Goals

Program goals refer to the overall outcomes expected from a program of instruction. These are broad, general statements that serve largely to give direction to grade-level or course goals. They are not the focus of either instruction or assessment directly, but they are indirectly. Here are some illustrative statements of program goals for mathematics:

1. The student will develop positive attitudes and self-assurance toward the use of mathematics in dealing with practical problems.

2. The student will be able to apply the mathematical skills and concepts needed to solve practical problems.

3. The student will be able to apply the reasoning and critical thinking skills needed to solve complex problems.

4. The student will be able to identify and understand patterns and relationships that exist within the field of mathematics (e.g., numeration, geometric order).

5. The student will be aware of the influence mathematics has had on western and other cultures.

Grade-Level or Course Goals

Grade-level or course goals are the goal statements that guide instruction and assessment within a program. They do this in two ways. First, they define more precisely the learning goals alluded to in program goals. Second, they are the goal statements around which **indicators of goal attainment** or **learning objectives** are organized. In the final analysis it is the indicators of goal attainment that provide focus and specificity to instruction, and they are the basis for assessment. Here are some illustrative grade-level or course goals:

Goal A. The student will be able to apply the components of numeration.

Goal B. The student will be able to use whole numbers.

- B1. Addition
- B2. Subtraction
- B3. Multiplication
- B4. Division

Goal C. The student will be able to apply commonly used systems of measurement.

Goal D. The student will be able to apply the basic concepts of geometry.

Goal E. The student will be able to use fractions.

F1. Fractional parts and relationships
F2. Addition/subtraction
F3. Multiplication/division

Goal F. The student will be able to use decimals.

Goal G. The student will be able to apply the concepts of ratio, proportion and percent.

Goal H. The student will be able to solve complex, multi-step problem using all of the above.

Indicators of Goal Attainment/Learning Objectives to be Accomplished

Program goals, and even grade level or course goals, tend to be sufficiently general that they have limited value as a focus for either instruction or assessment. The goal statements listed above, for example, do no more than identify the general areas in which instruction and assessment are to occur. They say nothing about the specific content to be taught, or the specific learning outcomes to be assessed.

As used here, indicators of goal attainment refer to the outcomes of learning that are looked to for evidence that students have accomplished grade-level learning goals. Functionally they represent a level of goal definition that has meaning for both instruction and assessment, but they take their name from the fact that they are **the** aspects of student learning that are assessed for evidence of goal attainment. They also guide instruction. In many curricula learning outcomes stated at this level of detail are called instructional objectives, but the term "indicators of goal attainment" is better suited to the concept of integrating teaching and testing because it highlights the importance of asessment.

Two additional observations need to be made about indicators of goal attainment. The first is that the indicators listed for a particular grade-level or course goal are only a **sample** of the indicators/learning objectives that could be listed. The dilemma for a teacher is one of selecting indicators/learning objectives that represent an adequate sample of the content covered by a course or program goal, and at the same time are small enough in number to be manageable as guides to instruction and assessment.

The second observation is that it is the indicators of goal attainment that give a goal statement its **operational meaning.** The goal of "being able to apply commonly used systems of measurement," for example, is so general as to be essentially without meaning by itself. It is only when the indicators of goal attainment spell out the specific measurement systems to be used, and how they are to be used, that a teacher or student has a clear idea of what is to be taught or learned. It is through this clarifying function and linkage to assessment that the indicators of goal attainment take on such an important role in instructional programs that effectively integrate curriculum, teaching and testing.

APPENDIX C

COURSE GOALS THAT ILLUSTRATE A REFINED FRAMEWORK FOR THINKING ABOUT LEARNING OUTCOMES

THE BIOLOGICAL SCIENCES

KNOWLEDGE OUTCOMES

Essential Facts and Information:

1. Know the areas of study covered by the biological sciences, and at least three (3) of the best known biologists of all time. Be able to describe the work that made these scientists famous.

Essential Concepts and Relationships:

2. Be able to describe the basic life processes of respiration, circulation, digestion, metabolism, excretion and reproduction in man. Also be able to describe how these same processes work in plants.

3. Be able to describe what is meant by the concept of evolution, and the various kinds of evidence that have been put forward in support of the concept. Also be able to describe the theories that have been put forth to explain the process of evolution.

SKILL OUTCOMES

Subject-related Skills:

4. Be able to use one or more classification systems developed by zoologists to describe the similarities and differences that exist among living organisms.

Life-Role Skills:

5. Be able to explain key concepts from the biological sciences to a six or seven year old child in words that are scientifically and socially acceptable, for example, the "meaning of life and death" and "where babies come from."

THE MEANING AND FUNCTION OF CULTURE

KNOWLEDGE OUTCOMES

Essential Concepts and Relationships:

1. Be able to describe what is meant by the concept of culture and the role that culture plays in individual development and in the life of society generally;

2. Be able to describe the various forms through which culture is expressed, and the distinctive characteristics of each. Also be able to give examples of the varying forms of cultural expressions found in different societies, and of the values and meanings that these forms convey; and

3. Be able to explain and give examples of the processes by which cultures change.

SKILL OUTCOMES

Subject-related Skills:

4. Be able to infer and describe the values, beliefs, or sensitivities reflected in various products of culture, including products from at least one non-western culture.

Life-role Skills:

5. Be able to derive personal meaning from cultural activity, e.g., acting in a play, reading a poem, and to draw connections between cultural activity and other aspects of one's life.

THE MEANING AND RESPONSIBILITY OF CITIZENSHIP

KNOWLEDGE OUTCOMES

Essential Concepts and Relationships:

1. Be able to describe what is meant by the concept of citizenship generally and the various contexts in which citizenship may be exercised, e.g., school, community, society at large;

2. Be able to describe the rights guaranteed to citizens in this country by the Constitution and the assumptions about human nature and government underlying these rights. Also be able to describe the rights and responsibilities of citizens in different political systems; and

3. Be able to describe and illustrate a variety of constructive ways in which individuals can exert influence in community and public affairs.

SKILL OUTCOMES

Life-role Skills:

1. Be able to serve as an effective advocate for causes in which one believes; and

2. Be able to work effectively with others in planning and implementing school or community improvement projects.