DOCUMENT RESUME

ED 234 161 CE 036 814

TITLE	Assess Student Performance: Skills. Second Edition. Module D-4 of Category D--Instructional Evaluation. Professional Teacher Education Module Series.
INSTITUTION	Ohio State Univ., Columbus. National Center for Research in Vocational Education.
SPONS AGENCY	Department of Education, Washington, DC.
REPORT NO	ISBN-0-89606-139-6
PUB DATE	83
NOTE	32p.
AVAILABLE FROM	American Association for Vocational Instructional Materials, 120 Driftmier Engineering Center, University of Georgia, Athens, GA 30602.
PUB TYPE	Guides - Classroom Use - Materials (For Learner) (051)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Evaluation Methods; Measurement Objectives; *Measurement Techniques; *Performance Tests; Postsecondary Education; *Psychomotor Skills; Secondary School Teachers; Skill Analysis; *Student Evaluation; *Teacher Education; Test Construction; Testing; *Vocational Education

ABSTRACT

This module, one of a series of 127 performance-based teacher education learning packages focusing upon specific professional competencies of vocational education teachers, deals with assessing student performance of psychomotor skills. Included in the module are learning experiences that address the following topics: important considerations involved in selecting and administering evaluation devices for assessing student psychomotor performance, constructing a performance test to evaluate student achievement of a psychomotor performance objective, and assessing student performance of psychomotor skills in an actual teaching situation. Each learning experience contains one or more learning activities and a feedback activity. (MN)

MODULE

D-4

Assess Student Performance: Skills

Second Edition

Module D-4 of Category D—Instructional Evaluation
PROFESSIONAL TEACHER EDUCATION MODULE SERIES

The National Center for Research in Vocational Education
The Ohio State University

Key Program Staff:
James B. Hamilton, Program Director
Robert E. Norton, Associate Program Director
Glen E. Fardig, Specialist
Lois G. Harrington, Program Assistant
Karen M. Quinn, Program Assistant

1983

ISBN 0-89606-139-6

Published and distributed by the **American Association for Vocational Instructional Materials (AAVIM)**, 120 Driftmier Engineering Center, University of Georgia, Athens, Georgia 30602, (404) 542-2586.

CE 036 814

FOREWORD

This module is one of a series of 127 performance-based teacher education (PBTE) learning packages focusing upon specific professional competencies of vocational teachers. The competencies upon which these modules are based were identified and verified through research as being important to successful vocational teaching at both the secondary and postsecondary levels of instruction. The modules are suitable for the preparation of teachers and other occupational trainers in all occupational areas.

Each module provides learning experiences that integrate theory and application; each culminates with criterion-referenced assessment of the teacher's (instructor's, trainer's) performance of the specified competency. The materials are designed for use by teachers-in-training working individually or in groups under the direction and with the assistance of teacher educators or others acting as resource persons. Resource persons should be skilled in the teacher competencies being developed and should be thoroughly oriented to PBTE concepts and procedures before using these materials.

The design of the materials provides considerable flexibility for planning and conducting performance-based training programs for preservice and inservice teachers, as well as business-industry-labor trainers, to meet a wide variety of individual needs and interests. The materials are intended for use by universities and colleges, state departments of education, postsecondary institutions, local education agencies, and others responsible for the professional development of vocational teachers and other occupational trainers.

The PBTE curriculum packages in Categories A – J are products of a sustained research and development effort by the National Center's Program for Professional Development for Vocational Education. Many individuals, institutions, and agencies participated with the National Center and have made contributions to the systematic development, testing, revision, and refinement of these very significant training materials. Calvin J. Cotrell directed the vocational teacher competency research study upon which these modules are based and also directed the curriculum development effort from 1971 – 1972. Curtis R. Finch provided leadership for the program from 1972 – 1974. Over 40 teacher educators provided input in development of initial versions of the modules; over 2,000 teachers and 300 resource persons in 20 universities, colleges, and postsecondary institutions used the materials and provided feedback to the National Center for revisions and refinement.

Early versions of the materials were developed by the National Center in cooperation with the vocational teacher education faculties at Oregon State University and at the University of Missouri – Columbia. Preliminary testing of the materials was conducted at Oregon State University, Temple University, and the University of Missouri – Columbia.

Following preliminary testing, major revision of all materials was performed by National Center staff, with the assistance of numerous consultants and visiting scholars from throughout the country.

Advanced testing of the materials was carried out with assistance of the vocational teacher educators and students of Central Washington State College; Colorado State University; Ferris State College, Michigan; Florida State University; Holland College, P.E.I., Canada; Oklahoma State University; Rutgers University, New Jersey; State University College at Buffalo, New York; Temple University, Pennsylvania; University of Arizona; University of Michigan–Flint; University of Minnesota–Twin Cities; University of Nebraska–Lincoln; University of Northern Colorado; University of Pittsburgh, Pennsylvania; University of Tennessee; University of Vermont; and Utah State University.

The first published edition of the modules found widespread use nationwide and in many other countries of the world. User feedback from such extensive use, as well as the passage of time, called for the updating of the content, resources, and illustrations of the original materials. Furthermore, three new categories (K–M) have been added to the series, covering the areas of serving students with special/exceptional needs, improving students' basic and personal skills, and implementing competency-based education. This addition required the articulation of content among the original modules and those of the new categories.

Recognition is extended to the following individuals for their roles in the revision of the original materials: Lois G. Harrington, Catherine C. King-Fitch and Michael E. Wonacott, Program Associates, for revision of content and resources; Cheryl M. Lowry, Research Specialist, for illustration specifications; and Barbara Shea for art work. Special recognition is extended to George W. Smith Jr., Art Director at AAVIM, for supervision of the module production process.

Robert E. Taylor
Executive Director
The National Center for Research in Vocational Education

THE NATIONAL CENTER FOR RESEARCH IN VOCATIONAL EDUCATION
THE OHIO STATE UNIVERSITY
1960 KENNY ROAD · COLUMBUS OHIO 43210

The National Center for Research in Vocational Education's mission is to increase the ability of diverse agencies, institutions, and organizations to solve educational problems relating to individual career planning, preparation, and progression. The National Center fulfills its mission by:

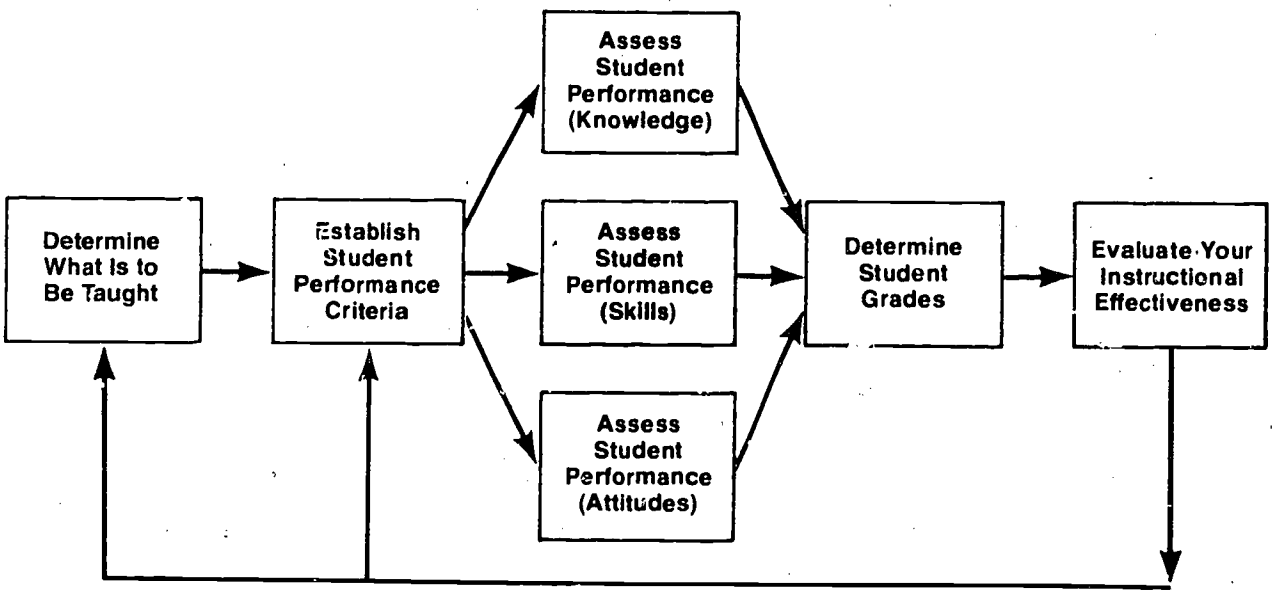
- Generating knowledge through research.
- Developing educational programs and products.
- Evaluating individual program needs and outcomes.
- Providing information for national planning and policy.
- Installing educational programs and products.
- Operating information systems and services.
- Conducting leadership development and training programs.

AAVIM
AMERICAN ASSOCIATION FOR VOCATIONAL INSTRUCTIONAL MATERIALS
University of Georgia
120 Driftmier Engineering Center
Athens, GA 30602

The American Association for Vocational Instructional Materials (AAVIM) is a nonprofit national institute.

The institute is a cooperative effort of universities, colleges and divisions of vocational and technical education in the United States and Canada to provide for excellence in instructional materials.

Direction is given by a representative from each of the States, provinces and territories. AAVIM also works closely with teacher organizations, government agencies and industry.



INSTRUCTIONAL EVALUATION PROCESS

INTRODUCTION

The very nature of vocational-technical education requires that students be trained in the skills they need to perform on the job. Since these are "performance" skills, many of the objectives in vocational education fall within the psychomotor, or physical skills, area.

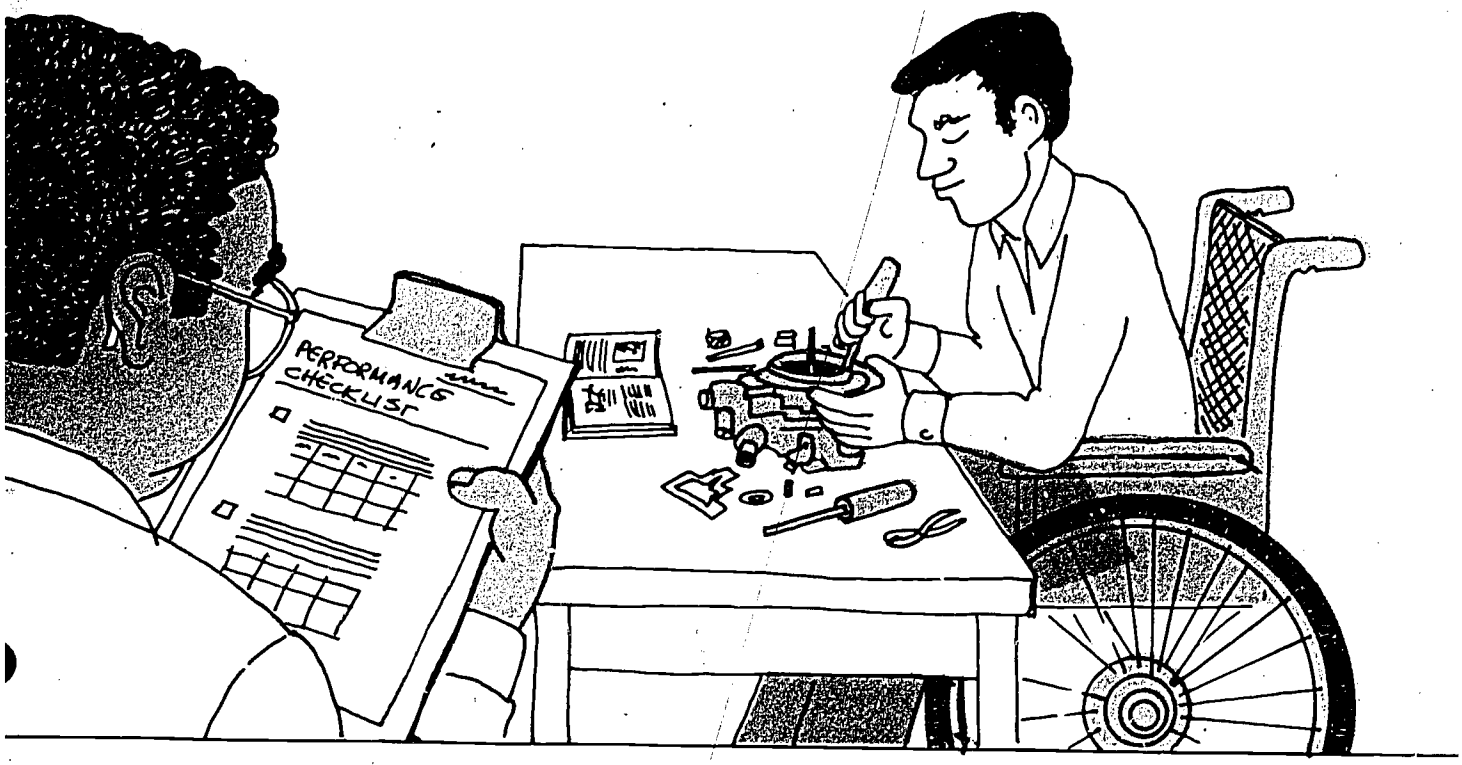
Most performance objectives involve all three areas of learning: cognitive (knowledge), affective (attitudes and values), and psychomotor (skills). For example, to achieve the overall objective, *Tune an engine so that it runs smoothly*, involves knowledge (e.g., *know the parts of the engine*), attitudes (e.g., *value a smooth-running engine*), and skills (e.g., *gap spark plugs*).

This module is concerned with assessing the psychomotor (skill) objectives and/or the skill areas within a broad objective. This involves the evaluation of both the **process** used by students in meeting an objective (how they go about the task) and the **product** they create as a result of that process.

Evaluation in the skills area of instructional objectives requires more than giving a paper-and-pencil type of test. It is logical that, if you want to know whether a person can **do** something, you should watch him/her do it and judge the performance for yourself. This requires the development of observational devices—performance checklists—that can be used to evaluate both the procedures the student used and the product he/she produced.

These devices, if adequately developed, can be used both by the teacher and by students. Involving students in their own evaluation through the use of specially constructed devices (1) involves them in the learning process, (2) helps them develop a sense of self-worth and independence, and most important, (3) trains students to recognize acceptable standards of performance.

This module is designed to give you skill in devising and administering evaluation devices for assessing student performance in the occupational skills area—devices that are valid and reliable and usable by both you and your students.



ABOUT THIS MODULE

Objectives

Terminal Objective: In an actual teaching situation, assess student psychomotor (skills) performance. Your performance will be assessed by your resource person, using the Teacher Performance Assessment Form, pp. 27–28 (*Learning Experience III*).

Enabling Objectives:

1. After completing the required reading, demonstrate knowledge of the important considerations involved in selecting and administering evaluation devices for assessing student psychomotor performance (*Learning Experience I*).
2. After completing the required reading, construct a performance test for evaluating student achievement of a psychomotor performance objective (*Learning Experience II*).

Resources

A list of the outside resources that supplement those contained within the module follows. Check with your resource person (1) to determine the availability and the location of these resources, (2) to locate additional references in your occupational specialty, and (3) to get assistance in setting up activities with peers or observations of skilled teachers, if necessary. Your resource person may also be contacted if you have any difficulty with directions or in assessing your progress at any time.

Learning Experience I

No outside resources

Learning Experience II

No outside resources

Learning Experience III

Required

An actual teaching situation in which you can assess student psychomotor performance.

A resource person to assess your competency in assessing student psychomotor performance.

General Information

For information about the general organization of each performance-based teacher education (PBTE) module, general procedures for its use, and terminology that is common to all the modules, see About Using the National Center's PBTE Modules on the inside back cover. For more in-depth information on how to use the modules in teacher/trainer education programs, you may wish to refer to three related documents:

The *Student Guide to Using Performance-Based Teacher Education Materials* is designed to help orient preservice and inservice teachers and occupational trainers to PBTE in general and to the PBTE materials.

The *Resource Person Guide to Using Performance-Based Teacher Education Materials* can help prospective resource persons to guide and assist preservice and inservice teachers and occupational trainers in the development of professional teaching competencies through use of the PBTE modules. It also includes lists of all the module competencies, as well as a listing of the supplementary resources and the addresses where they can be obtained.

The *Guide to the Implementation of Performance-Based Teacher Education* is designed to help those who will administer the PBTE program. It contains answers to implementation questions, possible solutions to problems, and alternative courses of action.

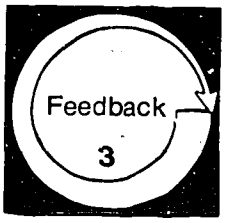
Learning Experience I

OVERVIEW

After completing the required reading, demonstrate knowledge of the important considerations involved in selecting and administering evaluation devices for assessing student psychomotor performance.

You will be reading the information sheet, Selecting and Administering Evaluation Devices to Assess Student Psychomotor Performance, pp. 6–10.

You will be demonstrating knowledge of the important considerations involved in selecting and administering evaluation devices for assessing student psychomotor performance by completing the Self-Check, pp. 11–12.



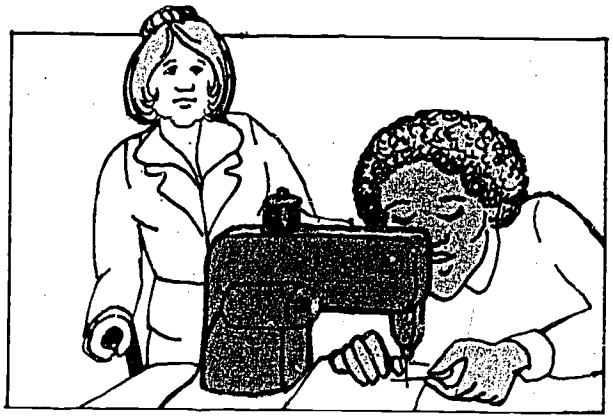
You will be evaluating your competency by comparing your completed Self-Check with the Model Answers, p. 13.

Activity 1

Psychomotor objectives in vocational-technical education may involve a process, a product, or both. It is important to select evaluation devices that will effectively measure the most critical aspects of each objective. For information on how to select and administer devices to evaluate student achievement of psychomotor objectives, read the following information sheet.

SELECTING AND ADMINISTERING EVALUATION DEVICES TO ASSESS STUDENT PSYCHOMOTOR PERFORMANCE

Psychomotor objectives involve motor or skill-centered activities. This type of objective (thread a sewing machine, light a blowtorch, correct a typing error, install a piston) typically involves (1) following a particular procedure, or sequence of steps, (2) performing the procedure to a certain level of competency, and/or (3) creating an end product or result that meets certain criteria. Any one or all of these three areas can be evaluated through observation.



Objectives that are primarily concerned with skills are recognizable by their use of **action** verbs that indicate a very specific motor skill. The following are examples of such verbs:

Adjust	Fit	Mind	Rip	Stock
Apply	Fix	Mix	Roll	Straighten
Assemble	Grind	Mold	Sand	Strike
Blend	Grow	Nail	Saw	Switch
Calibrate	Guide	Operate	Set	Tear
Carve	Hammer	Peel	Sew	Transfer
Conduct	Handle	Pin	Shake	Trim
Connect	Heat	Plant	Sharpen	Tune
Construct	Hook	Position	Shorten	Turn
Convert	Increase	Prepare	Shovel	Twist
Cut	Insert	Raise	Shut	Type
Decrease	Keep	Remove	Slip	Weave
Demonstrate	Lengthen	Replace	Slide	Weigh
Dissect	Limit	Report	Spread	Wipe
Fasten	Make	Reset	Start	Wrap
Feed	Manipulate			

Evaluation Devices

When you, as a vocational-technical teacher, want to determine whether a student has acquired a desired skill, you may look at the **process** the student went through, the **final product** that the student produced, or perhaps **both.**

Sometimes, following the correct process is all-important—for example, when a child-care worker teaches children a new game or when a receptionist handles a client who wants an appointment. At other times, it is far better to evaluate the final product (e.g., a threaded pipe, a pressed garment, or manicured fingernails) to see whether the student has achieved the skill.

Some skills must not only result in a product of acceptable quality, but must be performed in a very carefully prescribed way. In taking a dental X-ray, for instance, not only must the developed X-ray be technically correct, but the picture-taking procedure must be followed exactly in order to prevent injury to patient and technician.

According to some educators, there are two types of evaluation devices that are most commonly used to evaluate the processes used and products produced by students: checklists and rating scales. These devices are similar in appearance and use, they say. Both contain explicit criteria, or standards, for measuring performance.

These educators state that a checklist calls for a simple yes/no judgment and is most suitable for evaluating procedures (processes). A rating scale, on the other hand, allows the observer to indicate the degree to which a characteristic is present or the frequency with which a behavior occurs. Thus, it is most suitable for evaluating products.

It may be an oversimplification, however, to view these two instruments as having such discrete characteristics and purposes. In this module, we will treat both of these devices as one, a **performance checklist**—but one that can accommodate different rating options and evaluation purposes.

According to our definition, a performance checklist will include a list of **process and/or product criteria.** These criteria may include quality standards, degrees of accuracy, steps to be completed, sequence of steps to be followed, time standards, or safety standards, depending on the performance being evaluated. The criteria should be designed to help the evaluator to focus his or her observations on the critical aspects of the objectives and to ensure that these observations are as objective as possible.

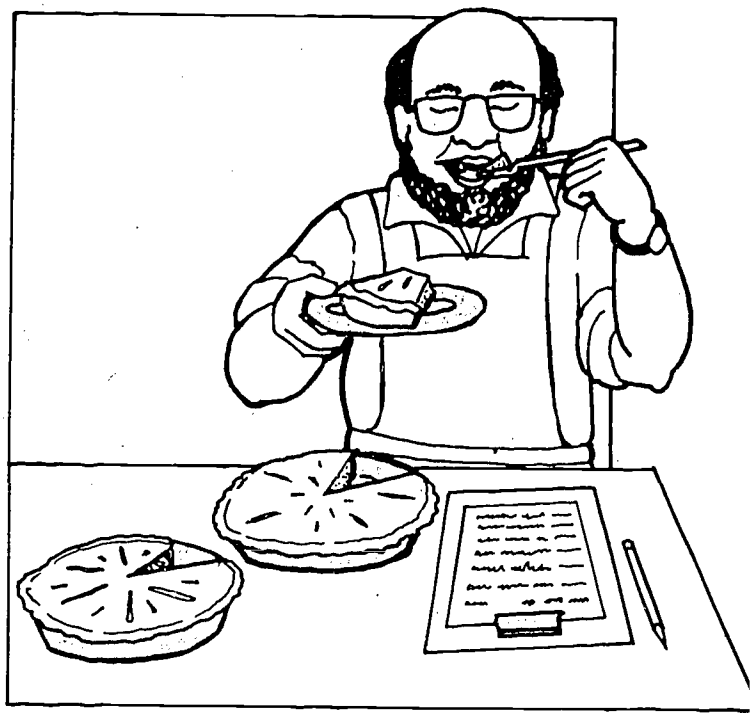
And, according to our definition, a performance checklist will include a **rating scale.** This rating scale may be a simple **yes/no rating scale** that allows only for indicating whether the desired characteristic or step is either present or absent. Or it may be a **multi-level rating scale** that allows for indicating the degree to which a characteristic is present or the frequency with which a behavior occurs.

Thus, instead of dealing with two types of evaluation devices, we are dealing with one device (the performance checklist), which can involve the use of two types of rating scales.

The **type of rating scale** you use for your performance checklist will depend on the type of performance (process/product) involved, as well as on your need to differentiate between levels of performance achieved. For example, if a student is being evaluated on the procedures used in preparing a cake, an item on the performance checklist might be, *stirred batter until smooth.* If occupational standards require that absolute smoothness is essential—that anything less than absolute smoothness is not acceptable—then a yes/no rating scale may be appropriate. Yes, it is smooth; or no, it is not.

On the other hand, if a student's final product—the cake—is being evaluated, you might want to be able to evaluate variations of **quality** in the performance. For example, one of the items on the performance checklist might be, *The texture of the cake was uniform.* The uniformity of the texture could then be rated on a scale from 1 to 5, from *nonuniform and/or lumpy* to *very uniform and smooth.*

In other words, the type of rating scale selected could depend on the **tolerances** allowed for successful performance in the occupation—the degree to which a student can deviate from the stated criteria and still be successful. Where tolerances are close (e.g., in setting up a drill press for operation), or where either/or performances are involved, the yes/no rating scale could be more useful. Where qualitative judgments are important (e.g., in judging the flavor and consistency of a prepared dish), the multi-level rating scale could be the more useful device.



The type of rating scale you use is also a philosophical issue, however. Some vocational educators maintain that, given occupational standards, the student's performance should be rated only on whether he or she did indeed achieve the stated criterion. The rating scale for each criterion should, therefore, be a simple go/no-go type (yes/no; mastery/no mastery; acceptable/not acceptable). This has simplicity in its favor but has limits of usefulness. It also forces the instructor to draw a fine line between acceptable and unacceptable performance.

Multi-level rating scales that permit a degree of latitude in rating the performance (e.g., the 1 to 5 rating scale mentioned earlier) are much preferred by other vocational educators. This type of rating scale has the following advantages:

- It allows a minimum acceptable level of performance to be specified.
- It permits the instructor to recognize unusual achievement—to differentiate among levels of overall performance and reward excellence.
- It gives a student more information about the quality of his/her performance—about how near or far he/she is from achieving the standard.
- It allows the student to recycle and work toward higher ratings.

The use of performance checklists is especially appropriate when (1) you are administering a performance test and (2) when you are evaluating student psychomotor performance in the classroom, laboratory, or on the job. A discussion of these situations follows.

Performance Tests

One of the most useful methods for determining the level of the students' skill is by giving a performance test. This method is especially valuable when you wish to evaluate both process and product. In this type of test, a problem or task (e.g., *weld an aluminum casting*) is specified. The students are then required to solve the problem or perform the task using the supplies and equipment furnished to them. As each student performs, you would observe and evaluate the procedures followed. At the conclusion of the performance, you would also evaluate the finished product.

Performance tests can sometimes be used as **pretests** to determine the level at which students can perform particular skills prior to instruction. By determining this, you can then base instruction on the students' **need** for additional skill. There is little point in teaching a skill if the student can already do it. By the same token, it makes little sense to teach a skill for which students do not have the prerequisite skills.

While performance tests are valuable for pretesting, you must exercise extreme caution if any safety hazards are involved in the performance being tested. You may need to test for knowledge of proper safety precautions first and then closely supervise the actual performance.

Performance tests can also be used to **preassess** the level of student performance when it would be costly or uncorrectable for a mistake to be made during the process. For example, a student could be asked to spray-paint a spare fender before spraying a customer's automobile.

You may also find it useful to use performance tests at the end of a **demonstration,** when only simple skills are involved (e.g., using basic tools correctly). This allows you to get immediate feedback on the effectiveness of the demonstration and how much each student learned from it.

In the case of more complex skills, students need an opportunity to practice the skills before being given a performance test. In other cases, such as with typing or shorthand skills, it is useful to administer performance tests on the same skills periodically over a space of time (e.g, a semester).

Some abilities require **mastery.** It is essential, for instance, for a nurse to master the critical task of giving a patient a hypodermic injection or for a pilot to master landing an airplane successfully. In such cases—those in which everyone must reach a given level defined as mastery—it is imperative that such abilities be evaluated by performance tests.

Planning and Administering the Tests

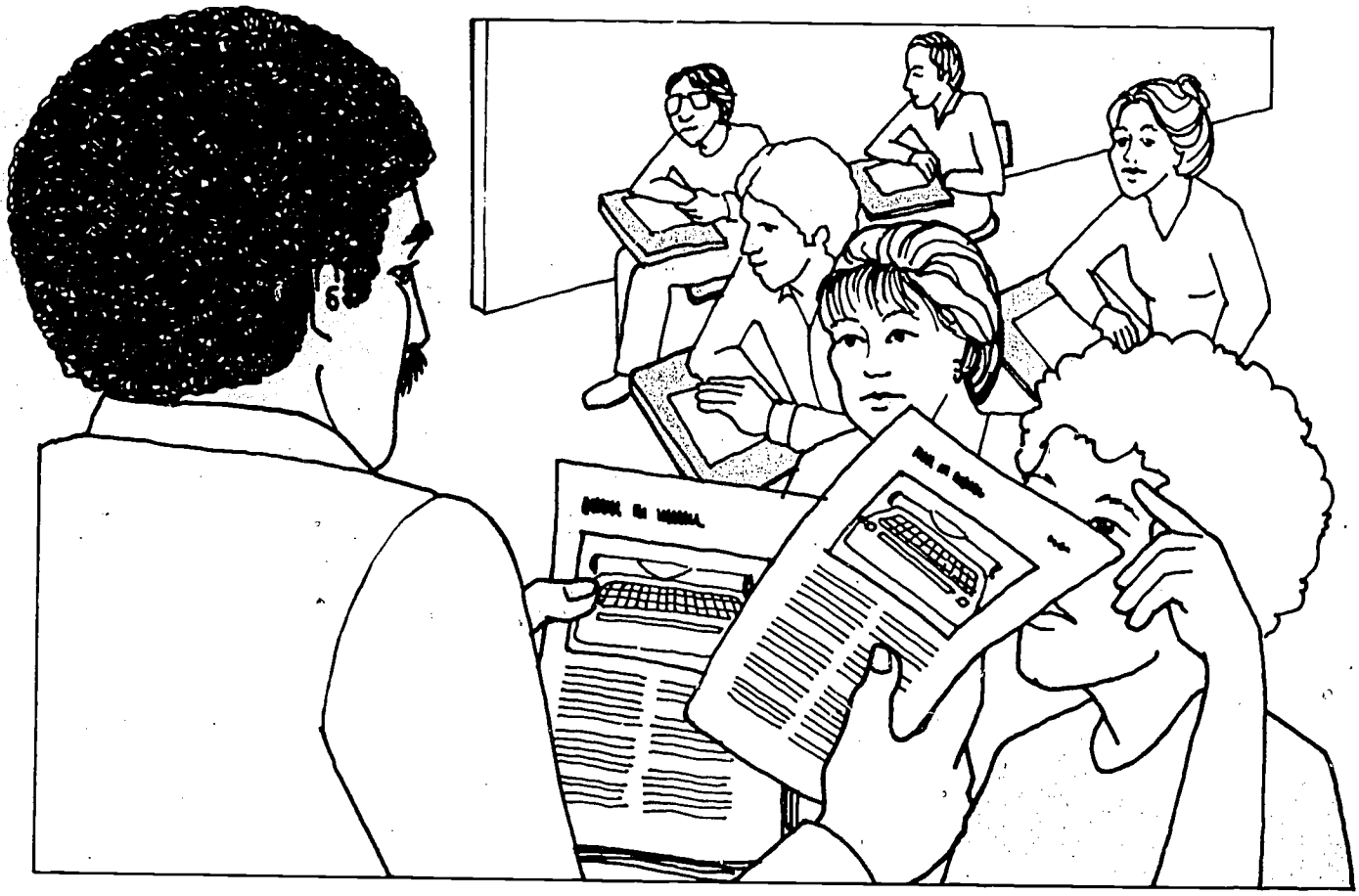
Performance tests need to be carefully **planned.** In planning such tests, you may need to do all or most of the following:

- Devise—using the student performance objectives as a basis—the situations or problems the students will be required to complete.[1]
- Develop a student task sheet in which you explain the tasks to be completed.
- List the materials, equipment, and tools that will be available to the student.
- Establish criteria, or standards, for evaluating the psychomotor performance.[2]
- Decide what type of evaluation device to use.
- Develop the performance checklist; i.e., list the criteria to be met and select the type of rating scale to be used.

You need to **prepare students** in advance for any upcoming performance test. You should inform them about the purpose of the test, the procedure to be used, and the time of the test. If students are to be tested individually, the other members of the class need to know what they will be expected to do when they are not involved in the testing.

1. To gain skill in developing objectives in the psychomotor domain, you may wish to refer to Module B-2, *Develop Student Performance Objectives*; and Module B-3, *Develop a Unit of Instruction.*

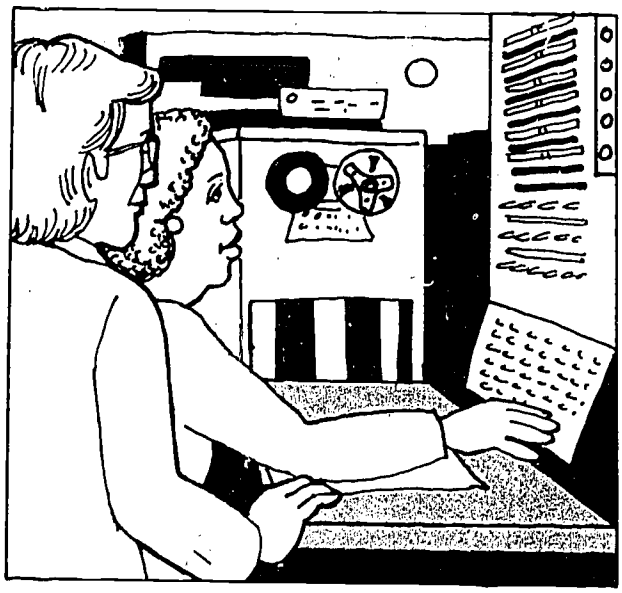
2. To gain skill in establishing the criteria that underlie your measurement of student performance, you may wish to refer to Module D-1, *Establish Student Performance Criteria.*



You also need to **give students time to practice** the skills on which they will be tested. During their practice time, students can be provided with copies of the performance checklist to use in self-evaluating their own competency. This not only gives them feedback that will allow them to correct errors, it also helps to develop their ability to recognize acceptable procedures and products.

In competency-based education (CBE) programs, performance testing is a basic and essential component. Usually, the performance checklists are included in the learning packages (e.g., learning guides or modules) that the students often complete in such programs. As a result, students know prior to instruction what performance is required of them and what standards they will be expected to achieve. They can thus study and practice until they think they are ready to demonstrate the skill. At that point, they arrange with the instructor for the time and place of the performance test.

When performance tests are used to evaluate **process,** they are usually administered to one student at a time, since it is essential to check the performance step by step. If the performance does not involve very small (i.e., hard to see) manipulations, however, it may be possible to administer a performance test to a small group of students, providing you can be positioned so that you can observe every student.



In situations in which the **product** is the primary concern, close observation of the procedures followed may not be necessary. In that case, students can work independently and simply turn in the product to you when it is completed.

When setting up the testing situation, you need to attend to the **physical arrangements.** You need to be sure that you have all necessary materials and equipment available and properly placed for the test ahead of time.

During testing, you should make sure that other students are not working in the same physical area in which the testing is being conducted and that their activities will not distract, or interfere with, the students being tested.

If you are rating the procedures the students followed, you should **conduct a follow-up conference** with each student after the testing to discuss your assessment of his/her performance. This can help students to understand their progress and the areas of their performance needing improvement.

If you are rating only the product, it is very desirable for you to rate it in the student's presence. In this way, you can suggest improvements, and the student can ask questions about the work if necessary.

Testing Situations

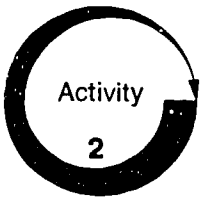
In the **classroom,** performance testing can be used to evaluate the efficiency and effectiveness of students' skills in performing such operations as using a calculator, drawing plans, or taking shorthand. Performance checklists could be developed for making written observations concerning the accuracy of the performance, the time spent in completing a specified amount of work, or the general neatness of the products.

In **laboratory situations** in which students are practicing to improve their levels of performance, they can use performance checklists to self-evaluate the procedures used and the products produced. You can then use these same devices in conducting the final performance test.

The evaluation of students' psychomotor performance in **on-the-job situations** can be shared by the employer and the student, since you are not present to observe the student at all times.

If you decide to use employers or on-the-job instructors to help you rate student performance on the job, you need to explain to them (1) how to use the performance checklists, (2) what standards of performance the rating scale levels represent, (3) how these devices relate to the achievement of the objectives of the on-the-job experience, and (4) what methods can be used to involve students in the evaluation process.

You may also need to suggest that a time schedule be developed for conducting these performance evaluations. This ensures that, when you make your on-the-job visits, you will be able to see what progress your students have made to date.



The following items check your comprehension of the material in the information sheet, Selecting and Administering Evaluation Devices to Assess Student Psychomotor Performance, pp. 6–10. Each of the five items requires a short essay-type response. Please explain fully, but briefly, and make sure you respond to all parts of each item.

SELF-CHECK

1. Write an objective for your occupational specialty that is primarily concerned with a psychomotor skill and explain why it can be classified as being in the psychomotor domain.

2. Place a check (✓) before each of the following verbs that could be used in writing a psychomotor objective.

_____Plan	_____Stretch	_____Guide
_____Praise	_____Fill	_____Paste
_____Analyze	_____Watch	_____Read

3. Why is it important to have specific devices for evaluating student psychomotor performance?

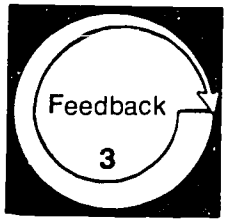
4. For **one** of the following objectives, explain how a performance checklist could be used to evaluate student psychomotor performance.

   a. Using an electric sander, sand a walnut coffee table in preparation for the application of a lacquer finish.

b. Using a yeast roll dough, form Parker House rolls and place them in tins ready for the oven.

c. Given a typewritten letter containing an error, correct the error so that the correction is not visible.

5. In administering psychomotor performance tests, what procedures should you follow?



Compare your written responses to the self-check items with the model answers given below. Your responses need not exactly duplicate the model responses; however, you should have covered the same major points.

MODEL ANSWERS

1. Your psychomotor objective should contain (a) an action verb, (b) a statement of a motor skill to be performed, (c) a statement of the procedures to be followed, and (d) a statement of the level of competency to be achieved and/or the criteria for the finished product. For example, for an office skills program, you might have written, *Using a prepared manuscript, type a copy of the manuscript at 32 words per minute with fewer than 8 errors in 12 minutes or less.*

2. ___ Plan ✓ Stretch ✓ Guide
   ___ Praise ✓ Fill ✓ Paste
   ___ Analyze ___ Watch ___ Read

   Note that the checked words describe observable motor behavior. The other words are verbs, but some are not psychomotor in character, and in some the actions described would be difficult or impossible to observe to be sure that the student is **actually** performing the skill (e.g., *watch*).

3. Teachers need guides to direct their observations. Since performance checklists contain criteria for student performance, they provide guidance in helping teachers make their observations more valid, reliable, objective, and complete.

4. For each of the three objectives, a performance checklist could be used to check the **procedures** used by the student (e.g., in preparing the coffee table using a sander, in forming Parker House rolls and placing them in tins, or in correcting a typing error). A checklist could also be used to judge the quality of the final **product** (e.g., the sanded wood, the shaped rolls, or the typed correction).

5. The following procedures should guide the administration of a psychomotor performance test:
   - Inform students in advance of the upcoming performance test. Discuss how they will be evaluated and what skills will be evaluated.
   - Give students time to practice before the test. Provide them with copies of the evaluation devices and explain how to use them.
   - Prepare the classroom or laboratory prior to testing. Make sure you have all materials and equipment available and placed appropriately and that you can view the performance easily and clearly.
   - Arrange for students to be working on meaningful activities away from the testing area when they are not involved in the testing.
   - Observe and rate student performance.
   - Hold a follow-up conference with each student to explain the ratings he/she received.

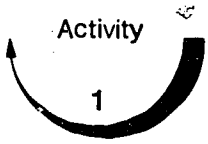
Level of Performance: Your written responses to the self-check items should have covered the same **major** points as the model answers. If you missed some points or have questions about any additional points you made, review the material in the information sheet, Selecting and Administering Evaluation Devices to Assess Student Psychomotor Performance, pp. 6–10, or check with your resource person if necessary.

NOTES

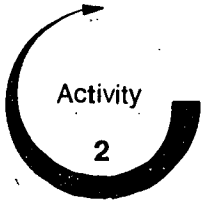
Learning Experience II

OVERVIEW

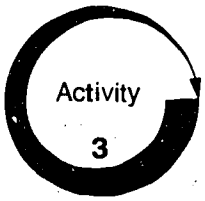
After completing the required reading, construct a performance test for evaluating student achievement of a psychomotor performance objective.



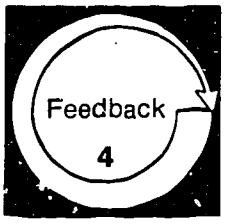
You will be reading the information sheet, Constructing Psychomotor Performance Tests, pp. 16–22.



You will be selecting one or more psychomotor objectives in your occupational specialty.



You will be constructing a performance test to assess achievement of the objectives you select.



You will be evaluating your competency in constructing a performance test for evaluating student achievement of a psychomotor performance objective, using the Performance Test Checklist, pp. 23–24.

Properly developed performance tests are excellent devices for evaluating students' achievement of psychomotor skills in a vocational-technical program. For information on how to plan for and construct psychomotor performance tests, read the following information sheet.

CONSTRUCTING PSYCHOMOTOR PERFORMANCE TESTS

Six major steps should be followed in constructing a performance test to measure achievement of a psychomotor skill. When the psychomotor skill is complex, all these steps need to be carefully followed. However, in the case of simple tasks, some of the steps (e.g., Steps 2 and 3) may be omitted.

Step 1: Devise Situations or Problems

Let us say that you want to use a performance test to evaluate students' achievement of the following objective:

> **Objective:** Given fabric, shears, and a measuring device, cut a piece of fabric of a given length.

Your first step would be to devise a situation or problem that involves the desired skill.

When developing statements describing a situation or problem, you need to be sure that specific details are given and that the solution involves the psychomotor performance (skill) you want to measure. For example:

> **Situation:** You are preparing to do sales work. Right now, you are working in a fabric shop. A customer has just asked you for a quarter of a yard of velvet fabric.

In this situation, the specific role assigned to students is described as *preparing to do sales work* by *working in a fabric shop*, and the problem situation is described as *a customer has just asked you for a quarter of a yard of velvet fabric.*

Step 2: Develop a Task Sheet

Your next step would be to develop a task sheet for the students—one that contains the situation or problem you have developed (Step 1) and directions for the task the students are to perform to solve the problem. In addition, you will need to add to the task sheet the list of materials, tools, and equipment (Step 3) and criteria for performance (Step 4) as you develop them.

In developing your task directions, you will need to decide how detailed an explanation you want to give. You can give a very brief description, requiring the student to then fill in the details using knowledge and experience from previous instruction, or you can provide the needed details for the student. The following are two examples of task directions for the situation previously described:

> **Task:** Cut a quarter yard of velvet fabric for the customer.
>
> **or**
>
> **Task:** Cut a quarter yard of velvet fabric. Remember that velvet fabric does not tear easily and that shears should therefore be used for cutting the fabric.

Step 3: List Materials, Tools, and Equipment

When administering a performance test, you will usually furnish the materials, tools, and equipment that the student will need. These items should be listed on the task sheet. This is especially helpful to students who are using performance tests for practice and self-evaluation. For example, the list developed for the previous situation would probably read as follows:

Materials and Equipment:
Bolt of velvet fabric
Shears
Flat surface at least one yard square, with yard-measuring marker

Step 4: Develop Criteria for Performance

The performance criteria, which are usually stated as part of the psychomotor objective, serve as a standard for evaluating overall student performance. In the objective we have been considering, the criteria are that the cut piece of fabric be the correct length and grain-straight.

Standards for many psychomotor objectives have already been established by manufacturers of the equipment being used, by businesses in which the skill is used, or by textbook and manual authors. Some labor unions also have established minimum levels of performance. Vocational instructors are often also exposed to standards of performance in the technical courses they take at the postsecondary or college level.

The criteria stated within the objective need to be further broken out into **subcriteria** of greater specificity. Subcriteria are not part of the statement of the objective; they are listed separately. They spell out in more detail the procedures, key points, and standards of performance you (or the student who is self-evaluating) should be looking for as the student performs the overall skill.

These subcriteria can be included in the performance checklist for evaluating student psychomotor performance. They should also be included on the task sheet. Subcriteria for the fabric-cutting objective could be specified as follows:

I. **Subcriteria: Process**
1. Fabric was placed flat on a horizontal surface that was free from dust and other damaging particles.
2. End of fabric was examined to see whether it was grain-straight; if it was not, it was then cut grain-straight.
3. Fabric was placed flat against the table yard-measuring marker.
4. Shears were used to snip the edge of the fabric exactly nine inches from the end.
5. With the fabric flat, the shears were used to cut the fabric along the grainline.

II. **Subcriteria: Product**
1. The cut material is free from dust and other damaging particles.
2. The ends of the material are cut grain-straight.
3. The edge of the material is smoothly and evenly cut.
4. The cut material measures a full quarter yard (nine inches) in length.

Step 5: Decide on an Evaluation Strategy

In developing a performance test, sometimes you will want to evaluate one or more of the following aspects of the performance, depending on the specific objectives to be met:

- The process followed
- The product produced
- Time standards
- Safety standards

And even though we are focusing here on psychomotor skills, often a performance test will include items measuring desired attitudes associated with the performance. By including items regarding actions that indicate the presence of desired attitudes, we can ensure that students can not only perform the skill required, but that they perform in the way required.

You would need to evaluate the **product** if (1) the result is more critical than the procedures used, (2) there is more than one acceptable process that may be used, or (3) the process is difficult to observe and evaluate (e.g., developing film in complete darkness).

You would need to evaluate the **process** if (1) you want to be sure a student can use tools and equipment correctly, (2) the time used to complete the process is of concern, (3) there are health or safety hazards involved in the process, or (4) the final product cannot be evaluated without destroying the work.

In some performance testing situations, you may want to establish points in advance at which you can halt student performance if necessary. For instance, if expensive material would be ruined if the student were to continue on his or her present course, or if an important safety precaution were to be overlooked by the student, the performance should be stopped immediately.

You would evaluate **safety** and **time** standards as part of the process/product evaluation. Clearly, if goggles should be worn during a welding process, you would not want to evaluate the process without including that safety requirement as part of the evaluation criteria. Similarly, if time is important (e.g., typing 45 words per minute, cooking a three-minute egg), then the process/product criteria would contain items relating to standards of time to be met.

In the case of the velvet-cutting situation, your performance checklist would probably be designed to cover both the cutting process and the finished product—the cut cloth. Safety concerns related to the use of shears could be included. Time, however, might not be a concern, although a person working in a fabric shop cannot take too much time to perform such a task or customers could have to wait an unnecessary length of time for service. You could also establish points in the process for stopping the performance if it looked as if the velvet would be ruined if the student continued.

Step 6: Develop the Evaluation Instrument

Once you have completed the first five steps, the development of the performance checklist is a fairly straightforward task. You have determined what you will evaluate: process, product, time, safety, or a combination thereof. And you should already have your checklist items written; you will notice that, in sample 1, the checklist items come directly from the subcriteria established for the **process** in Step 4.

There are, however, some guidelines that should be observed in developing items from subcriteria:

- Each item should be clearly and simply stated so that it communicates easily to students, teachers, and employers or on-the-job instructors.
- Each item should be stated in observable performance terms.
- The items must not be trivial or cover common knowledge (e.g., the student used the shears with the proper hand). They should be **important** parts of the skill.
- The items should represent **all** the critical process/product criteria involved, and **only** the critical criteria should be included.
- Items should be listed in a logical sequence (e.g., process items should be listed in the order in which they are usually performed).
- A reasonable number of items should be included; too lengthy or detailed a checklist can be difficult to use.

There are, too, some additional decisions to be made: (1) what general format will be used and what will it include, and (2) what type of rating scale or scales will be used.

Format. In general, the performance checklist should contain the following elements:

- Space for the student's name to be recorded
- Space for the date to be recorded
- Directions for using the checklist
- A descriptive title
- Performance criteria
- Rating scale
- Statement explaining the minimum level of performance required

One other element sometimes included in a checklist is space for comments beneath each item. This practice is strongly recommended, in that it allows you to specify exactly what was wrong with the student's performance relative to a given item (subcriterion). Such information can be very helpful in providing the student with feedback following the performance.

It is important to make the checklist self-explanatory so that it can be used by students for self-evaluation purposes, by an employer or on-the-job instructor, as well as by you.

Rating scale. Given the nature of the performance, you need to determine whether a yes/no rating scale or multi-level rating scale should be used. In making this decision, you would need to consider the following questions:

- Would it be sufficient to measure only whether the desired characteristic or step is either absent or present?
- Must an absolute standard be met?
- Are close tolerances for successful performance required?

SAMPLE 1

PERFORMANCE CHECKLIST

VELVET CUTTING: PROCESS

Student's Name: _____ **Date:** _____

Directions: Check (✓) the YES or NO box to indicate whether the student performed each task as indicated or not.

The student:	Yes	No
1. placed the fabric on a horizontal surface that was free from dust and other damaging particles	☐	☐
2. examined the end of the fabric to see whether it was grain-straight; if it wasn't, the student cut it so that it was	☐	☐
3. placed the fabric flat against the table yard-measuring marker	☐	☐
4. snipped the fabric exactly nine inches from the end with a pair of shears	☐	☐
5. used shears to cut the fabric along the grainline, keeping the fabric flat while cutting	☐	☐

If your answers to these questions are yes, then a yes/no rating scale would be appropriate. In using a yes/no rating scale, it may be helpful to provide a third column marked *N/A* (not applicable) to be checked in situations in which the criteria are inappropriate or do not apply (e.g., where students may be performing on a variety of machines with slightly different controls).

If your answers to the following questions are yes, then a multi-level rating scale would be appropriate:

- Is it important to measure the degree to which a characteristic is present or the frequency with which behavior occurs?
- Is it important to evaluate the relative quality of the performance or product?
- Are broad tolerances for successful performance allowed?

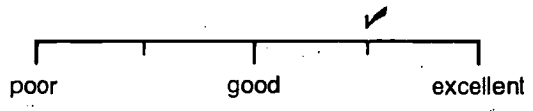
In some cases, you might choose to have a two-part (or more) checklist. For example, Part I could include process items with a yes/no rating scale. Part II could include product items with a multi-level rating scale. This is perfectly acceptable. It would not be acceptable, however, to mix rating scale types within a section of the checklist, or from one individual item to the next.

Authorities say that at least **five levels of quality** should be specified in a good multi-level rating scale, with **descriptions** given for at least three of the five levels. In addition, there are three major types of multi-level rating scales from which to choose: numerical, graphic, and descriptive graphic.

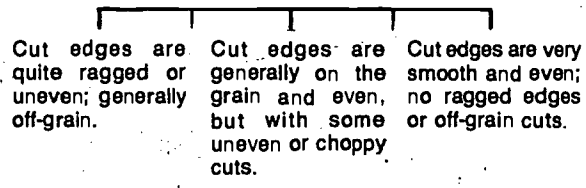
In the **numerical** scale, a series of numbers is given to the right of each item. An explanation of the standard or level of performance each number represents is usually provided in the directions. The following is an example of the directions provided to explain a numerical scale:

5 – excellent, meets all standards
4 – very good, meets most standards
3 – good, meets some standards
2 – fair, meets a few standards
1 – poor, not up to standard

In the **graphic** scale, each characteristic is followed by a horizontal line, with response categories marked on the line. Ratings are made by placing a check in the appropriate location on the line, as shown in the following example:



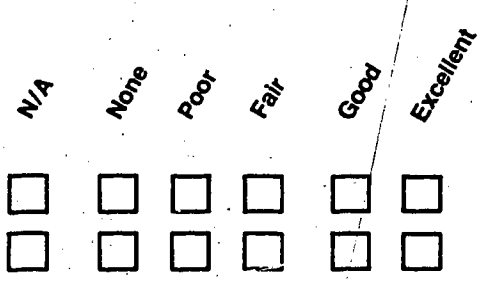
The **descriptive graphic** scale is like the graphic except that the descriptions provided in the scale are thumbnail sketches of student behaviors at each level on the scale. For example:



Other variations are also possible, using elements of the three major types of multi-level rating scales, as shown in the following examples:

Poor	Fair	Good	Very Good	Excellent

LEVEL OF PERFORMANCE



You can design your performance checklist so that both you and the student can rate his/her performance; simply include two complete rating scales to the right of your items. For example:

Student's Rating					Instructor's Rating				
5	4	3	2	1	5	4	3	2	1

After both you and the student have rated the performance, a follow-up conference can be held to discuss differences in the ratings, to resolve any questions the student may have, and to determine whether the performance needs to be repeated.

A performance checklist prepared for evaluating the **product** resulting from the velvet-cutting situation is shown in sample 2. A multi-level rating scale was used, and again, the items in the checklist were drawn directly from the subcriteria developed in Step 4.

Regardless of the type of rating scale to be used or whether you are measuring process or product, it is important that any performance checklist you develop be both valid and reliable. And further, you may need to be able to translate your results into letter grades.

Validity. A valid device measures what it is supposed to measure. In determining validity, you should check the device against the objective and the instructional content. Be sure that the device includes **all** the critical items that the student needs to perform or all the critical characteristics that the product must exhibit.

You can also check the items in the device against those listed in manuals or textbooks to be sure that none are omitted. In addition, you can have other teachers review your device for clarity and for completeness.

Reliability. A reliable device consistently measures what it is intended to measure. You will determine this largely by your personal experience with the device. The items need to be clear and detailed enough that your interpretation of an item is consistent each time you use the device. In addition, if several people are using the device, they should each be able to interpret the items in the same way.

You may need practice in observing performance or recording your observations, especially in a busy laboratory or shop or in situations in which you must observe students' performance in a group setting.

SAMPLE 2

PERFORMANCE CHECKLIST

VELVET CUTTING: PRODUCT

Student's Name: _____ **Date:** _____

Directions: Rate the student's performance in cutting a quarter yard of velvet, using the scale given below. Check (✓) the appropriate box, 1–5, to indicate how well the student performed each item. The ratings in the scale are as follows:

5 – excellent
4 – very good
3 – good
2 – fair
1 – poor

The cut fabric:	5	4	3	2	1
1. is free from dust and other damaging particles	☐	☐	☐	☐	☐
2. is cut grain-straight along the ends	☐	☐	☐	☐	☐
3. has smoothly and evenly cut edges	☐	☐	☐	☐	☐
4. measures a full quarter yard (nine inches) in length	☐	☐	☐	☐	☐

Sometimes you may find that you can only spot-check performance because of limits of time or group size. In such cases, you need to be sure that you make enough observations to be able to assess accurately how well each student is performing.[3]

Grading. Depending on your school's policies, it may be necessary for you to translate marks on a rating scale into a **letter grade.** How you do this will depend to a certain extent on your personal standards and the philosophy of the school concerning grading procedures.[4] You might decide that a grade of *A* requires a perfect performance, a *B* will be given if one or two items receive unsatisfactory ratings, a *C* will be given if three or four items receive unsatisfactory ratings, and so on.

Or if a numerical rating scale is used, you can obtain a mean score by adding the ratings received on each item and then dividing by the number of items. Letter grades could then be given in accordance with this mean score (e.g., 5 = A, 4.5 = B, and so on).

These are dangerous practices, however. For any **specific** task or skill, trying to arrive at a mean or average score or to place students' performance on a curve tends to ignore the nature of the performance test. If all items on your performance checklist were derived from performance criteria and are, in fact, critical to the performance, then meeting the criteria constitutes competence in the skill.

Averaging a student's performance on these criteria, however, implies that it is acceptable to meet

3. To gain skill in constructing valid and reliable tests to measure achievement of student performance objectives, you may wish to refer to Module D-2, *Assess Student Performance: Knowledge.*

4. To gain skill in developing a grading system, you may wish to refer to Module D-5, *Determine Student Grades.*

some of the criteria and not others. In reality, a student receiving an unsatisfactory rating on any item should recycle until his/her performance is satisfactory on all items. Thus, all students would continue to recycle until a letter grade of *A* was achieved.

A more acceptable method of assigning letter grades, if you must, is to use a multi-level rating scale. You could then require that, in order to receive a passing grade (e.g., A, B, C), every item must receive a satisfactory rating. However, you could assign grades of *A*, *B*, and *C* according to **how** satisfactory the performance was (e.g., acceptable, good, excellent).

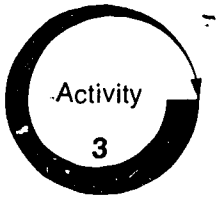
For example, the Teacher Performance Assessment Form on pp. 27–28 of this module requires that you complete all applicable items at either the *good* or *excellent* level. For those students who meet that **level of performance**, a grade of *A* could be given to those who do an outstanding job (e.g., who receive all *excellent* ratings or a majority of *excellent* ratings). Students receiving all *good* ratings could be awarded a grade of *B*. Students not meeting the required level of performance must recycle until that level is attained.[5]

No matter what grading system is used, students should be clearly informed about it before they proceed with the performance test. In all student evaluation, but especially in testing psychomotor skills, there should be no mystery or doubt about what is to be expected of the student.

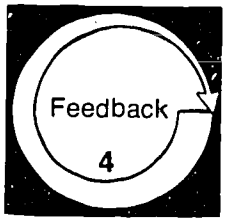
---

5. To gain skill in grading in a performance/competency-based program, you may wish to refer to Module K-3, *Organize Your Class and Lab to Install CBE*.

Select one or more student performance objectives in your occupational specialty that fall primarily in the psychomotor domain and that involve both a process and a product.



Construct a performance test that could be used to assess students' achievement of the objectives you have selected. The performance test should include evaluation of both process and product.



After you have constructed your performance test, use the Performance Test Checklist, pp. 23–24, to evaluate your work.

PERFORMANCE TEST CHECKLIST

Directions: Place an X in the NO, PARTIAL, or FULL box to indicate that each of the following performance components was not accomplished, partially accomplished, or fully accomplished. If, because of special circumstances, a performance component was not applicable, or impossible to execute, place an X in the N/A box.

Name _____

Date _____

Resource Person _____

	LEVEL OF PERFORMANCE			
	N/A	No	Partial	Full
The Performance Test				
1. The problem or situation is appropriate for the psychomotor objective	☐	☐	☐	☐
2. The problem or situation is clearly stated	☐	☐	☐	☐
3. The problem or situation is complete—all needed details are included	☐	☐	☐	☐
4. The needed supplies and equipment are specified	☐	☐	☐	☐
5. Subcriteria for performance are specified	☐	☐	☐	☐
6. Appropriate evaluation devices are specified	☐	☐	☐	☐
The Performance Checklist				
7. A clearly descriptive title is provided	☐	☐	☐	☐
8. Space is provided for the teacher to do the following:				
a. record the student's name	☐	☐	☐	☐
b. record the date	☐	☐	☐	☐
c. make written comments about the student's performance	☐	☐	☐	☐
9. Directions are provided that:				
a. clearly explain how the checklist is to be used	☐	☐	☐	☐
b. clearly explain the rating scale to be used	☐	☐	☐	☐
10. The checklist items:				
a. are derived from the objectives to be achieved	☐	☐	☐	☐
b. include **all** essential criteria (process, product, time, safety) or all essential process steps	☐	☐	☐	☐
c. include **only** essential criteria	☐	☐	☐	☐
d. are stated in observable performance terms	☐	☐	☐	☐
e. are clearly stated and would be easily interpreted by all users	☐	☐	☐	☐
f. are arranged in a logical sequence	☐	☐	☐	☐

	N/A	No	Partial	Full
11. The rating scale:				
a. is appropriate for the type of performance involved	☐	☐	☐	☐
b. allows the teacher to measure accomplishment or quality, as needed	☐	☐	☐	☐
c. includes at least a five-point scale, with descriptors provided for at least three ratings, if a multi-level rating scale is used	☐	☐	☐	☐
12. The overall checklist:				
a. is reasonable in length	☐	☐	☐	☐
b. includes an appropriate level of performance	☐	☐	☐	☐

Level of Performance: All items must receive FULL c[illegible]esponses. If any item receives a NO or PARTIAL response, review the material in the information [illegible] Constructing Psychomotor Performance Tests, pp. 16–22, revise your performance test accordingly, or [illegible]ck with your resource person if necessary.

Learning Experience III

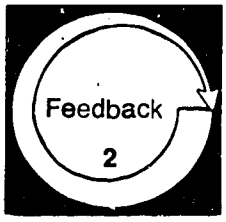
FINAL EXPERIENCE

In an **actual teaching situation,*** assess student psychomotor (skills) performance.

As you fulfill your teaching duties, determine when the nature of the student performance objectives requires the assessment of psychomotor skills. Based on that decision, assess student psychomotor performance. This will include—

- constructing a performance test to measure student progress toward achieving the identified psychomotor objectives
- developing a performance checklist to measure both process and product
- administering the test to students individually or in small groups

NOTE: As you complete each of the above activities, document your actions (in writing, on tape, through a log) for assessment purposes.



Arrange to have your resource person review your performance test, performance checklist, and other documentation (e.g., audiotape of follow-up discussions with students).

Your total competency will be assessed by your resource person, using the Teacher Performance Assessment Form, pp. 27–28.

Based upon the criteria specified in this assessment instrument, your resource person will determine whether you are competent in assessing student psychomotor (skills) performance.

*For a definition of "actual teaching situation," see the inside back cover.

NOTES

TEACHER PERFORMANCE ASSESSMENT FORM

Assess Student Performance: Skills (D–4)

Directions: Indicate the level of the teacher's accomplishment by placing an X in the appropriate box under the LEVEL OF PERFORMANCE heading. If, because of special circumstances, a performance component was not applicable, or impossible to execute, place an X in the N/A box.

Name

Date

Resource Person

	LEVEL OF PERFORMANCE					
	N/A	None	Poor	Fair	Good	Excellent
The Performance Test						
1. The problem or situation is appropriate for the psychomotor objective	☐	☐	☐	☐	☐	☐
2. The problem or situation is clearly stated	☐	☐	☐	☐	☐	☐
3. The problem or situation is complete—all needed details are included	☐	☐	☐	☐	☐	☐
4. The needed supplies and equipment are specified	☐	☐	☐	☐	☐	☐
5. Subcriteria for performance are specified	☐	☐	☐	☐	☐	☐
6. Appropriate evaluation devices are specified	☐	☐	☐	☐	☐	☐
The Performance Checklist						
7. A clearly descriptive title is provided	☐	☐	☐	☐	☐	☐
8. Space is provided for the teacher to do the following:						
a. record the student's name	☐	☐	☐	☐	☐	☐
b. record the date	☐	☐	☐	☐	☐	☐
c. make written comments about the student's performance	☐	☐	☐	☐	☐	☐
9. Directions are provided that:						
a. clearly explain how the checklist is to be used	☐	☐	☐	☐	☐	☐
b. clearly explain the rating scale to be used	☐	☐	☐	☐	☐	☐
10. The checklist items:						
a. are derived from the objectives to be achieved	☐	☐	☐	☐	☐	☐
b. include **all** essential criteria (process, product, time, safety) or all essential process steps	☐	☐	☐	☐	☐	☐
c. include **only** essential criteria	☐	☐	☐	☐	☐	☐
d. are stated in observable performance terms	☐	☐	☐	☐	☐	☐

	N/A	None	Poor	Fair	Good	Excellent
e. are clearly stated and would be easily interpreted by all users	☐	☐	☐	☐	☐	☐
f. are arranged in a logical sequence	☐	☐	☐	☐	☐	☐
11. The rating scale:						
a. is appropriate for the type of performance involved	☐	☐	☐	☐	☐	☐
b. allows the teacher to measure accomplishment or quality, as needed	☐	☐	☐	☐	☐	☐
c. includes at least a five-point scale, with descriptors provided for at least three ratings, if a multi-level rating scale is used	☐	☐	☐	☐	☐	☐
12. The overall checklist:						
a. is reasonable in length	☐	☐	☐	☐	☐	☐
b. includes an appropriate level of performance	☐	☐	☐	☐	☐	☐
Administration						
13. The performance test was discussed with the students prior to giving the test	☐	☐	☐	☐	☐	☐
14. The students were given time to practice prior to the test	☐	☐	☐	☐	☐	☐
15. The students were prepared to self-evaluate their performance (optional)	☐	☐	☐	☐	☐	☐
16. The performance testing situation was arranged to allow for teacher observation	☐	☐	☐	☐	☐	☐
17. Materials and equipment needed were assembled and arranged in advance	☐	☐	☐	☐	☐	☐
18. Quiet was maintained in the testing area	☐	☐	☐	☐	☐	☐
19. The teacher observed and recorded his or her observations while the testing was occurring	☐	☐	☐	☐	☐	☐
20. Students not involved in testing were provided with meaningful activities to complete	☐	☐	☐	☐	☐	☐
21. The teacher discussed with each student the results of his/her performance	☐	☐	☐	☐	☐	☐

Level of Performance: All items must receive N/A, GOOD, or EXCELLENT responses. If any item receives a NONE, POOR, or FAIR response, the teacher and resource person should meet to determine what additional activities the teacher needs to complete in order to reach competency in the weak area(s).

ABOUT USING THE NATIONAL CENTER'S PBTE MODULES

Organization

Each module is designed to help you gain competency in a particular skill area considered important to teaching success. A module is made up of a series of learning experiences, some providing background information, some providing practice experiences, and others combining these two functions. Completing these experiences should **enable** you to achieve the **terminal** objective in the final learning experience. The final experience in each module always requires you to demonstrate the skill in an actual teaching situation when you are an intern, a student teacher, an inservice teacher, or occupational trainer.

Procedures

Modules are designed to allow you to individualize your teacher education program. You need to take only those modules covering skills that you do not already possess. Similarly, you need not complete any learning experience within a module if you already have the skill needed to complete it. Therefore, before taking any module, you should carefully review (1) the introduction, (2) the objectives listed on p. 4, (3) the overviews preceding each learning experience, and (4) the final experience. After comparing your present needs and competencies with the information you have read in these sections, you should be ready to make one of the following decisions:

- That you do not have the competencies indicated and should complete the entire module
- That you are competent in one or more of the enabling objectives leading to the final learning experience and, thus, can omit those learning experiences
- That you are already competent in this area and are ready to complete the final learning experience in order to "test out"
- That the module is inappropriate to your needs at this time

When you are ready to complete the final learning experience **and** have access to an actual teaching situation, make the necessary arrangements with your resource person. If you do not complete the final experience successfully, meet with your resource person and arrange to (1) repeat the experience or (2) complete (or review) previous sections of the module or other related activities suggested by your resource person before attempting to repeat the final experience.

Options for recycling are also available in each of the learning experiences preceding the final experience. Any time you do not meet the minimum level of performance required to meet an objective, you and your resource person may meet to select activities to help you reach competency. This could involve (1) completing parts of the module previously skipped, (2) repeating activities, (3) reading supplementary resources or completing additional activities suggested by the resource person, (4) designing your own learning experience, or (5) completing some other activity suggested by you or your resource person.

Terminology

Actual Teaching Situation: A situation in which you are actually working with and responsible for teaching secondary or postsecondary vocational students or other occupational trainees. An intern, a student teacher, an inservice teacher, or other occupational trainer would be functioning in an actual teaching situation. If you do **not** have access to an actual teaching situation when you are taking the module, you can complete the module **up to** the final learning experience. You would then complete the final learning experience later (i.e., when you have access to an actual teaching situation).

Alternate Activity or Feedback: An item that may **substitute** for required items that, due to special circumstances, you are unable to complete.

Occupational Specialty: A specific area of preparation within a vocational service area (e.g., the service area Trade and Industrial Education includes occupational specialties such as automobile mechanics, welding, and electricity.

Optional Activity or Feedback: An item that is not required but that is designed to **supplement** and enrich the required items in a learning experience.

Resource Person: The person in charge of your educational program (e.g., the professor, instructor, administrator, instructional supervisor, cooperating/supervising/classroom teacher, or training supervisor who is guiding you in completing this module).

Student: The person who is receiving occupational instruction in a secondary, postsecondary, or other training program.

Vocational Service Area: A major vocational field: agricultural education, business and office education, marketing and distributive education, health occupations education, home economics education, industrial arts education, technical education, or trade and industrial education.

You or the Teacher/Instructor: The person who is completing the module.

Levels of Performance for Final Assessment

N/A: The criterion was not met because it was **not applicable** to the situation.

None: No attempt was made to meet the criterion, although it was relevant.

Poor: The teacher is unable to perform this skill or has only **very limited ability** to perform it.

Fair: The teacher is unable to perform this skill in an acceptable manner but has **some ability** to perform it.

Good: The teacher is able to perform this skill in an **effective** manner.

Excellent: The teacher is able to perform this skill in a **very effective** manner.

Titles of the National Center's Performance-Based Teacher Education Modules

Category A: Program Planning, Development, and Evaluation

A-1 Prepare for a Community Survey
A-2 Conduct a Community Survey
A-3 Report the Findings of a Community Survey
A-4 Organize an Occupational Advisory Committee
A-5 Maintain an Occupational Advisory Committee
A-6 Develop Program Goals and Objectives
A-7 Conduct an Occupational Analysis
A-8 Develop a Course of Study
A-9 Develop Long-Range Program Plans
A-10 Conduct a Student Follow-Up Study
A-11 Evaluate Your Vocational Program

Category B: Instructional Planning

B-1 Determine Needs and Interests of Students
B-2 Develop Student Performance Objectives
B-3 Develop a Unit of Instruction
B-4 Develop a Lesson Plan
B-5 Select Student Instructional Materials
B-6 Prepare Teacher-Made Instructional Materials

Category C: Instructional Execution

C-1 Direct Field Trips
C-2 Conduct Group Discussions, Panel Discussions, and Symposiums
C-3 Employ Brainstorming, Buzz Group, and Question Box Techniques
C-4 Direct Students in Instructing Other Students
C-5 Employ Simulation Techniques
C-6 Guide Student Study
C-7 Direct Student Laboratory Experience
C-8 Direct Students in Applying Problem-Solving Techniques
C-9 Employ the Project Method
C-10 Introduce a Lesson
C-11 Summarize a Lesson
C-12 Employ Oral Questioning Techniques
C-13 Employ Reinforcement Techniques
C-14 Provide Instruction for Slower and More Capable Learners
C-15 Present an Illustrated Talk
C-16 Demonstrate a Manipulative Skill
C-17 Demonstrate a Concept or Principle
C-18 Individualize Instruction
C-19 Employ the Team Teaching Approach
C-20 Use Subject Matter Experts to Present Information
C-21 Prepare Bulletin Boards and Exhibits
C-22 Present Information with Models, Real Objects, and Flannel Boards
C-23 Present Information with Overhead and Opaque Materials
C-24 Present Information with Filmstrips and Slides
C-25 Present Information with Films
C-26 Present Information with Audio Recordings
C-27 Present Information with Televised and Videotaped Materials
C-28 Employ Programmed Instruction
C-29 Present Information with the Chalkboard and Flip Chart
C-30 Provide for Students' Learning Styles

Category D: Instructional Evaluation

D-1 Establish Student Performance Criteria
D-2 Assess Student Performance: Knowledge
D-3 Assess Student Performance: Attitudes
D-4 Assess Student Performance: Skills
D-5 Determine Student Grades
D-6 Evaluate Your Instructional Effectiveness

Category E: Instructional Management

E-1 Project Instructional Resource Needs
E-2 Manage Your Budgeting and Reporting Responsibilities
E-3 Arrange for Improvement of Your Vocational Facilities
E-4 Maintain a Filing System
E-5 Provide for Student Safety
E-6 Provide for the First Aid Needs of Students
E-7 Assist Students in Developing Self-Discipline
E-8 Organize the Vocational Laboratory
E-9 Manage the Vocational Laboratory
E-10 Combat Problems of Student Chemical Use

Category F: Guidance

F-1 Gather Student Data Using Formal Data-Collection Techniques
F-2 Gather Student Data Through Personal Contacts
F-3 Use Conferences to Help Meet Student Needs
F-4 Provide Information on Educational and Career Opportunities
F-5 Assist Students in Applying for Employment or Further Education

Category G: School-Community Relations

G-1 Develop a School-Community Relations Plan for Your Vocational Program
G-2 Give Presentations to Promote Your Vocational Program
G-3 Develop Brochures to Promote Your Vocational Program
G-4 Prepare Displays to Promote Your Vocational Program
G-5 Prepare News Releases and Articles Concerning Your Vocational Program
G-6 Arrange for Television and Radio Presentations Concerning Your Vocational Program
G-7 Conduct an Open House
G-8 Work with Members of the Community
G-9 Work with State and Local Educators
G-10 Obtain Feedback about Your Vocational Program

Category H: Vocational Student Organization

H-1 Develop a Personal Philosophy Concerning Vocational Student Organizations
H-2 Establish a Vocational Student Organization
H-3 Prepare Vocational Student Organization Members for Leadership Roles
H-4 Assist Vocational Student Organization Members in Developing and Financing a Yearly Program of Activities
H-5 Supervise Activities of the Vocational Student Organization
H-6 Guide Participation in Vocational Student Organization Contests

Category I: Professional Role and Development

I-1 Keep Up to Date Professionally
I-2 Serve Your Teaching Profession
I-3 Develop an Active Personal Philosophy of Education
I-4 Serve the School and Community
I-5 Obtain a Suitable Teaching Position
I-6 Provide Laboratory Experiences for Prospective Teachers
I-7 Plan the Student Teaching Experience
I-8 Supervise Student Teachers

Category J: Coordination of Cooperative Education

J-1 Establish Guidelines for Your Cooperative Vocational Program
J-2 Manage the Attendance, Transfers, and Terminations of Co-Op Students
J-3 Enroll Students in Your Co-Op Program
J-4 Secure Training Stations for Your Co-Op Program
J-5 Place Co-Op Students on the Job
J-6 Develop the Training Ability of On-the-Job Instructors
J-7 Coordinate On-the-Job Instruction
J-8 Evaluate Co-Op Students' On-the-Job Performance
J-9 Prepare for Students' Related Instruction
J-10 Supervise an Employer-Employee Appreciation Event

Category K: Implementing Competency-Based Education (CBE)

K-1 Prepare Yourself for CBE
K-2 Organize the Content for a CBE Program
K-3 Organize Your Class and Lab to Install CBE
K-4 Provide Instructional Materials for CBE
K-5 Manage the Daily Routines of Your CBE Program
K-6 Guide Your Students Through the CBE Program

Category L: Serving Students with Special/Exceptional Needs

L-1 Prepare Yourself to Serve Exceptional Students
L-2 Identify and Diagnose Exceptional Students
L-3 Plan Instruction for Exceptional Students
L-4 Provide Appropriate Instructional Materials for Exceptional Students
L-5 Modify the Learning Environment for Exceptional Students
L-6 Promote Peer Acceptance of Exceptional Students
L-7 Use Instructional Techniques to Meet the Needs of Exceptional Students
L-8 Improve Your Communication Skills
L-9 Assess the Progress of Exceptional Students
L-10 Counsel Exceptional Students with Personal-Social Problems
L-11 Assist Exceptional Students in Developing Career Planning Skills
L-12 Prepare Exceptional Students for Employability
L-13 Promote Your Vocational Program with Exceptional Students

Category M: Assisting Students in Improving Their Basic Skills

M-1 Assist Students in Achieving Basic Reading Skills
M-2 Assist Students in Developing Technical Reading Skills
M-3 Assist Students in Improving Their Writing Skills
M-4 Assist Students in Improving Their Oral Communication Skills
M-5 Assist Students in Improving Their Math Skills
M-6 Assist Students in Improving Their Survival Skills

RELATED PUBLICATIONS

Student Guide to Using Performance-Based Teacher Education Materials
Resource Person Guide to Using Performance-Based Teacher Education Materials
Guide to the Implementation of Performance-Based Teacher Education
Performance-Based Teacher Education: The State of the Art, General Education and Vocational Education

For information regarding availability and prices of these materials contact—AAVIM, American Association for Vocational Instructional Materials, 120 Driftmier Engineering Center, University of Georgia, Athens, Georgia 30602, (404) 542-2586

ISBN 0-89606-139-6