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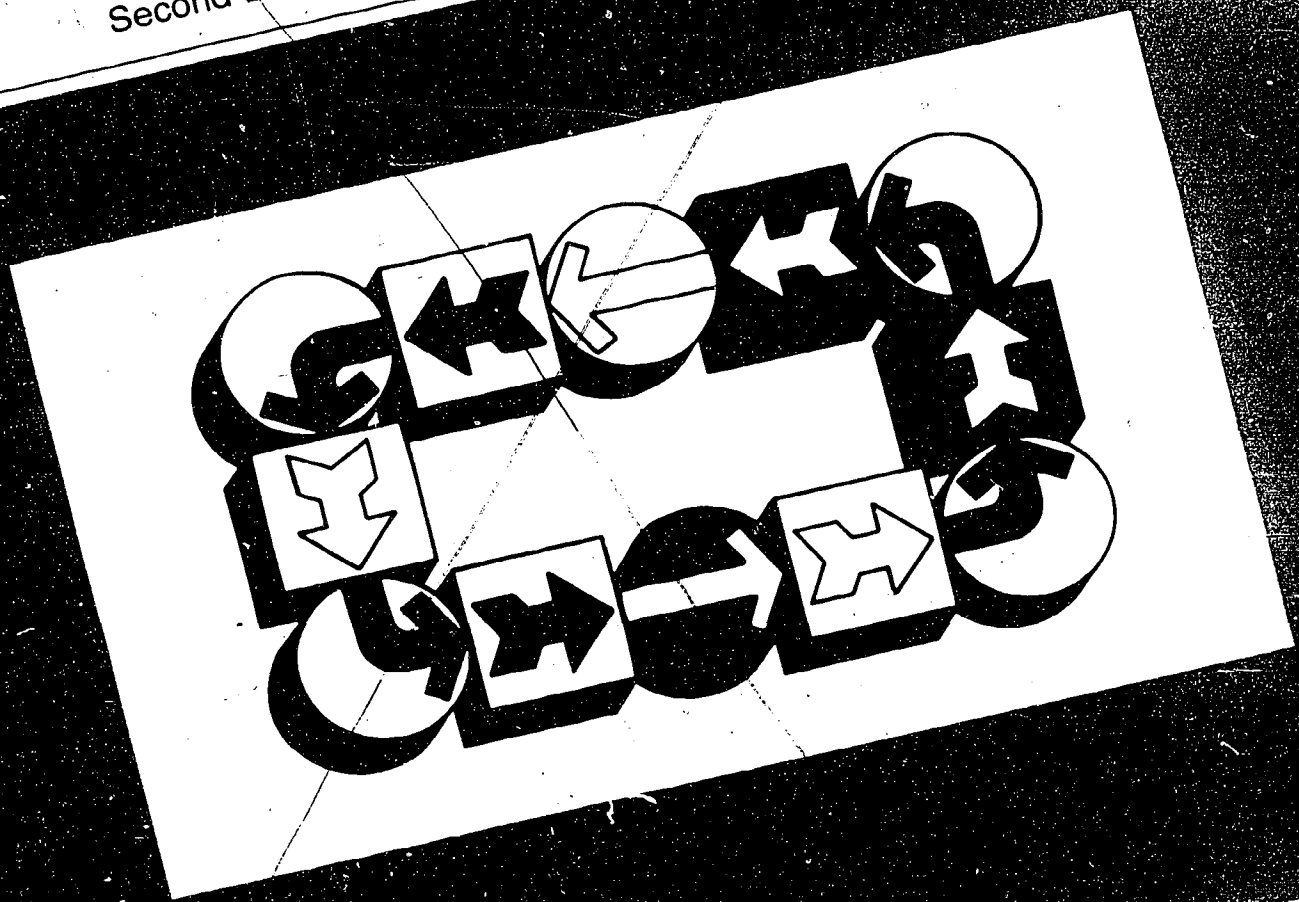
ABSTRACT

This module, one in a series of 127 performance-based teacher education (PBTE) learning packages, focuses on 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 materials are designed for use by teachers-in-training, working individually or in groups under the direction of teacher educators or other resource persons. The learning experiences in this module are designed to help prospective teachers to develop competency in preparing the kinds of lesson plans needed for an effective manipulative skill demonstration. In addition, using the module will help prospective teachers to gain skills in actually preparing for and demonstrating the manipulative skills needed by students in their occupational specialty. The module is comprised of a terminal objective, enabling objectives, prerequisites, a list of outside resources, and three learning experiences. Learning experiences relate to one of the module's enabling objectives and contain several activities and self-checks with model answers. The final learning experience is an actual teaching situation to be assessed by a resource person. (KC)

Demonstrate a Manipulative Skill

Second Edition



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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.

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- Installing educational programs and products.
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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.

MODULE C-16

Demonstrate a Manipulative Skill

Second Edition

Module C-16 of Category C—Instructional Execution
PROFESSIONAL TEACHER EDUCATION MODULE SERIES

The National Center for Research in Vocational Education
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INTRODUCTION

Good teachers are constantly searching for ways to present their lessons in a stimulating and interesting way. The procedures and methods that are most appropriate to any one lesson will depend on the nature of the subject matter being taught and the different ways in which people learn.

In vocational-technical education, a major part of the teaching responsibility involves manipulative operations—changing the form of something or moving something. Students in all vocational areas will need to master certain manipulative skills: preparing a crepe suzette, making a dowel joint, changing a typewriter ribbon or cash register tape, sterilizing surgical instruments, or operating a milking machine. Since this is a dominant part of vocational programs, all vocational teachers should be competent in effective ways of teaching manipulative operations.

The demonstration is a basic and popular method of presenting a manipulative skill. Demonstrations may be defined as visual explanations of important facts, ideas, or processes. In broader terms, demonstrations are considered to be audiovisual explanations. Students observing a teacher effectively demonstrating a manipulative skill can see each step of the process performed and hear explanations of key points that are essential to successfully performing the skill.

In individualized, competency-based programs, too, the manipulative skill demonstration is important. However, in these programs, the teacher may present the demonstrations to an individual or a small group or, even more frequently, may videotape the performance for individual viewing.

However, without proper planning and preparation, a demonstration can be very unproductive. If students cannot see all aspects of the presentation or hear the teacher's explanations, if all materials and equipment are not available or serviceable, if key steps are overlooked—then, the value of the presentation is lost.

The learning experiences in this module are designed to help you develop competency in preparing the kind of lesson plan needed for an effective manipulative skill demonstration. In addition, you will gain skill in actually preparing for and demonstrating the manipulative skills needed by students in your occupational specialty.

ABOUT THIS MODULE

Objectives

Terminal Objective: In an actual teaching situation, demonstrate a manipulative skill. Your performance will be assessed by your resource person, using the Teacher Performance Assessment Form, pp. 35–36 (*Learning Experience III*).

Enabling Objectives:

1. After completing the required reading, demonstrate knowledge of the steps and procedures involved in demonstrating a manipulative skill (*Learning Experience I*).
2. In a simulated classroom or laboratory situation, demonstrate a manipulative skill (*Learning Experience II*).

Prerequisites

To complete this module, you must have competency in developing a lesson plan. If you do not already have this competency, meet with your resource person to determine what method you will use to gain this skill. One option is to complete the information and practice activities in the following module:

- *Develop a Lesson Plan*, Module B–4

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

Optional

The videotape, "Demonstration," Educational Television Service, Stillwater, Oklahoma.

A locally produced videotape (or a television program) of a teacher demonstrating a manipulative skill that you can view for the purpose of critiquing that teacher's performance.

Videotape equipment to use in viewing a videotaped manipulative skill demonstration.

Learning Experience II

Required

2–5 peers to role-play students to whom you are demonstrating a manipulative skill and to critique your performance. If peers are unavailable, you may present your lesson to your *resource person*.

Optional

A resource person to review the adequacy of your lesson plan.

Videotape equipment to use in taping, viewing, and self-evaluating your demonstration.

Learning Experience III

Required

An actual teaching situation in which you can demonstrate a manipulative skill.

A resource person to assess your competency in demonstrating a manipulative skill.

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 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.

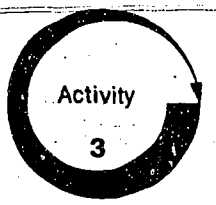
Learning Experience I

OVERVIEW

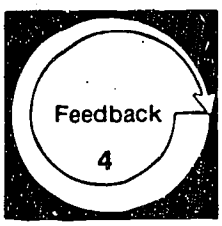
After completing the required reading, demonstrate knowledge of the steps and procedures involved in demonstrating a manipulative skill.

You will be reading the information sheet, Demonstrating a Manipulative Skill, pp. 6–11.

You may wish to view the videotape entitled "Demonstration" or a locally produced videotape of a teacher demonstrating a manipulative skill and to critique that teacher's performance. You might also wish to view a demonstration being presented on television as part of the regular broadcasting schedule.



You will be demonstrating knowledge of the steps and procedures involved in demonstrating a manipulative skill by completing the Self-Check, pp. 12–14.



You will be evaluating your competency by comparing your completed Self-Check with the Model Answers, p. 15.

Since vocational and technical courses involve so many manipulative operations, it is essential that instructors be highly skilled in training students in these operations. For information defining the demonstration method of teaching and explaining the steps and procedures involved in this method, read the following information sheet.

DEMONSTRATING A MANIPULATIVE SKILL

One of the basic methods for introducing new skills to students is through a demonstration. Wiring an electrical outlet, making a buttonhole, planting a tree, or producing a customer statement with a billing machine—each involves manipulative skills that can be presented through demonstration.

Showing students how new skills should be performed appears so direct and simple to the inexperienced teacher that it would seem hard to go wrong. Many teachers fail to present new skills effectively, however, because they neglect one or more of a few simple procedures that are essential to good demonstrations.

It is generally agreed that the demonstration method should consist of the following four basic steps:

1. **Preparation**—This step involves preparing the students for the lesson and motivating them to watch and listen.
2. **Presentation**—During the lesson, you need to present the skills, showing students the succession of steps and exploring key points that make the operation a success.
3. **Application**—Following your presentation, you need to provide each student with an opportunity to practice the skill under supervision.
4. **Testing or Follow-up**—The final step is to evaluate each student's performance of the skill.

The lesson plan shown in sample 1 provides for planning these four basic steps. You may have used a similar format in the prerequisite module, *Develop a Lesson Plan*, or your resource person may provide a similar planning form for you to use.

Although the application and testing or follow-up steps are essential parts of teaching a manipulative skill, the major focus of the remainder of this information sheet will be upon what you, as a vocational-technical instructor, need to do in **planning** for the demonstration, **preparing** the students, and **presenting** the demonstration.[1]

Planning for the Demonstration

First, you should examine the **student performance objectives** for the lesson to be sure that the lesson to be presented is indeed appropriate for and lends itself to the demonstration method. In other words, there is a manipulative skill to be learned. Second, you should have clearly in mind what is to be demonstrated.

Furthermore, you may find that one lesson will not be sufficient. If there are many technical terms (or other cognitive information) that students need to know in order to understand the demonstration, then an informational lesson should be planned to precede the demonstration. When this is done, students will be better prepared to follow your directions and explanations during the demonstration.

Normally, a demonstration should not last for more than 15–20 minutes, since students are called upon for a rather high degree of attention and concentration during a demonstration. Often, manipulative skills that involve a great number of steps can be broken down into segments of two or more demonstrations.

You then need to prepare a **lesson plan** that identifies each step necessary in performing the specific skill to be demonstrated. These steps should be organized and listed in a sequence that is appropriate to the skill being demonstrated. In most cases, there will be a chronological sequence (first you do this; second you do that).

The lesson plan should also identify, in conjunction with each step, key points or specific techniques essential to successfully performing that step. Safety practices specific to the operation should also be listed under key points.

The presentation section of the plan shown in sample 1 makes provision for listing steps in one column and key points in another column. Teachers often reproduce this section of their lesson plan as a job sheet or operation sheet. These sheets can then be provided to each student during or following the demonstration for reference during the application phase of the lesson.

1. To gain skill in the areas of application, testing, and follow-up, you may wish to refer to Module C-7, *Direct Student Laboratory Experience*; and Module D-4, *Assess Student Performance: Skills*.

SAMPLE 1

MODEL LESSON PLAN: Manipulative Skills

Unit 3
Lesson 2

JOB (or operation): Using the Marking Gauge

AIM (objective or purpose): Use the marking gauge in the construction of custom cabinetwork

TOOLS AND EQUIPMENT: standard marking gauge for woodworking; 1-foot rule; try square; pencil

MATERIALS: cabinet frame, ready for laying out mortise and tenon

TEACHING AIDS: chart showing gauge parts; working drawing of cabinet

REFERENCES: Fierer. Cabinetmaking and Millwork.

METHOD: Four-Step Method

I. PREPARATION (of the student): [introduction]

The marking gauge is one of the tools most commonly used by cabinetmakers.

It provides a very accurate method of marking lines on wood parallel to a side or edge. Also, more rapid than using rule and straightedge.

It requires more skill in its use than it looks.

II. PRESENTATION (of the skills):

Steps	Key Points (things to remember to do or say)
Set the gauge to desired measure.	Name parts of gauge (use chart). Show how to adjust head.
Check the setup with a rule— Measure between spur and beam.	Better accuracy—try on scrap.
Hold gauge in right hand.	Demonstrate correct grip.
Run the gauge against the stock.	Demonstrate wrist action. Run gauge away from operator.
Darken with pencil if necessary	
Mark all pieces at the same time before resetting gauge.	Lay out mortise and tenon joint as example (use working drawings for specs). Emphasize accuracy.

III. APPLICATION (practice by student under close supervision)

Practice using gauge on scrap stock until correct technique is established.

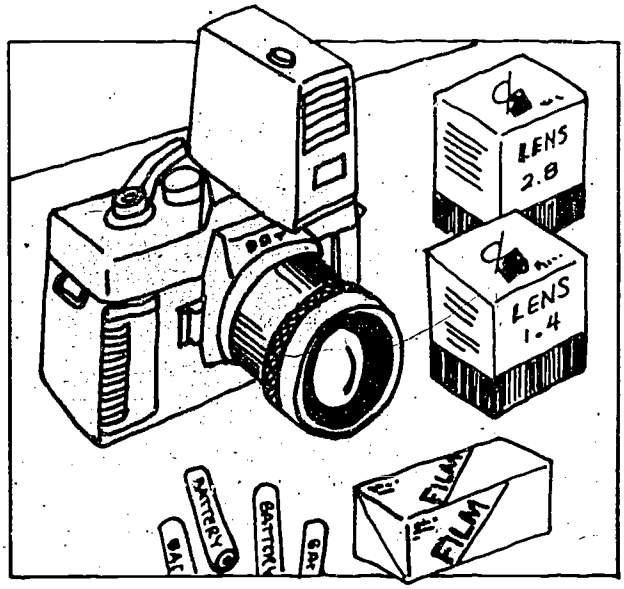
Each student will present a marked piece of scrap stock for check by instructor.

IV. TEST (performance of skill to acceptable standards)

Students will gauge the stock for a mortise and tenon joint to required dimensions. Instructor will check against working drawings.

Suggested Reading for Student:

Hammond. Wood Technology, pp. 61-63.



After the lesson plan has been prepared you need to make sure that all **tools, materials, supplies,** and **visuals** are at hand before you start the demonstration. A sure way to destroy the effectiveness of an otherwise good demonstration is to have to interrupt the demonstration at a critical point to hunt up a needed item.

In addition, you need to make sure that all items are in good condition and properly organized in advance. Consider the humiliation of finding out in the middle of your demonstration that your knife is dull, your wrench is broken, or you brought the wrong lens for the camera.

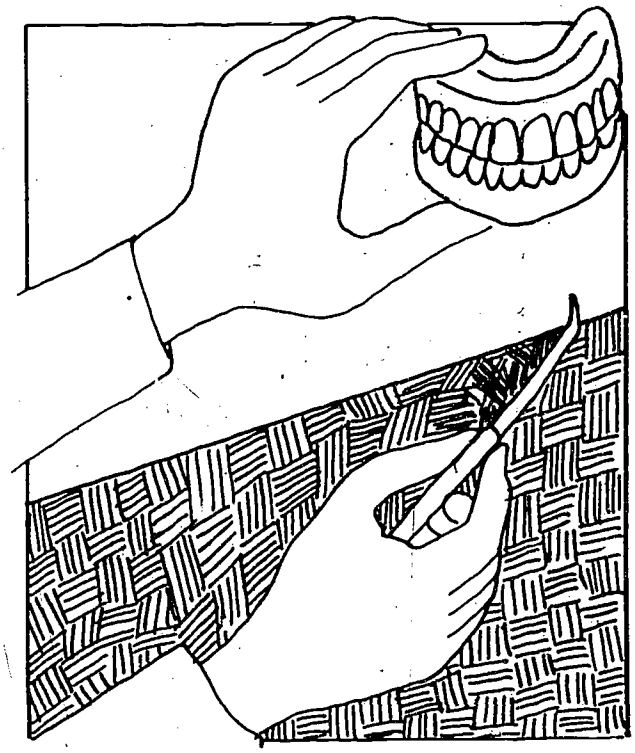
Sometimes, partially completed items must be prepared ahead of time if the processes or operations being demonstrated require that considerable time be spent in completing one step of the process. If several minutes or hours of doing the same thing are required or a lapse of time is necessary (such as might be the case when a recipe calls for refrigerating a mix), you should complete this time-consuming step ahead of time. Then, during the demonstration, you can bring out and substitute the previously prepared item when needed in order to be able to complete the demonstration in a reasonable amount of time.

The plan shown in sample 1 provides for listing the equipment, tools, materials, and teaching aids needed for the demonstration.

As part of your preparation, you need to arrange the **physical setting** in which you will conduct the demonstration so that each student will be able to see every movement and hear every direction or explanation clearly. The conditions under which you perform the demonstration should closely match actual conditions on the job if appropriate or possible.

However, if the student is to learn from observing you, then both students and equipment will need to be arranged so this can happen. If direction of movement is of special importance, students should be positioned to view the demonstration over your shoulder or from approximately the same angle as they would view their own performance of the operation.

If the demonstration is one involving precision movement or very small objects, you might be able to arrange for students to view it close up on a television monitor. You could also develop visuals showing enlargements of the parts or models showing the needed details, which you could use at critical points in the demonstration.



Do **not** attempt to pass objects around the group for inspection during a demonstration. This is a sure way to divert attention from the demonstration itself.

It is also important to consider students' **physical comfort.** Attention may fall off rapidly if students are forced into uncomfortable positions in order to observe. If possible, arrange seating around the demonstration area, preferably using tablet armchairs so that students can take notes as the demonstration proceeds. If the group is large or the demonstration surface is difficult to see, risers (such as are often used in a gymnasium) may be a good solution.

Poor lighting, poor ventilation, or a noisy location in the laboratory can also adversely affect student's attention. You can improve lighting by arranging

special light stands that flood the demonstration site with light. This will not only increase the students' chance to see what is going on, but it will also dramatize the setting and concentrate students' attention. Noise and distraction from other laboratory activities can be controlled by surrounding the demonstration area with movable screens.

For demonstrations involving hazardous operations, you may need to provide students with safety goggles or protective clothing. If the demonstrated operation can be expected to produce noxious fumes, arrange a floor ventilating fan to move the air away from the student observers.

Before presenting your demonstration to your students, it is often advisable to **practice** your demonstration, step by step, following the outline you will use. This is especially important when you have not given the particular demonstration for some period of time.

This practice should help build your own confidence in being able to present the demonstration skillfully. It can also serve as a check to see that you have not omitted essential steps or failed to have all equipment and materials properly prepared. It may feel awkward at first, but it is often helpful to practice in front of a full-length mirror so you can see how your performance will look to students.

Preparing the Students

You need to introduce the demonstration with a discussion of the job to be done. A series of well-chosen questions can lead the students into the topic. You should have outlined in your lesson plan, in the preparation section, how you intend to gain students' interest.

Unless you are able to explain what you are going to do and are able to connect it with what the students already know or have done, students may miss several essential points. They may be concentrating on discovering the point of the demonstration, rather than focusing on the demonstration itself.

Through questioning and discussion, you can determine whether the students know what is to be done and find out what they know about it. Show enthusiasm in questioning,[2] citing specific applications and showing the importance of being able to do the job well.

Presenting the Demonstration

The following are important procedures to follow in presenting the demonstration for which you have prepared:

- Show and explain the procedure completely by going through the process step by step.
- Perform the demonstration slowly enough so that students do not miss key points. Present one step at a time. Emphasize special techniques for doing a good job.
- Be sure to explain new terms. Have a chalkboard handy, with new terms written on it. Talk to your students, not to your equipment. Stop talking when you are at a critical or hazardous point.
- Emphasize safe practices as you proceed. Do not show "how **not** to do it." Use only the correct practices yourself during the demonstration.
- Be definite. Show the best procedure to do the job—the one that is commonly used in the field. Don't confuse students by showing several procedures.
- Question students as the demonstration proceeds to ensure their understanding of each step and to get them to think through the operation.
- Watch for nonverbal clues from students indicating how well they are following or responding to the demonstration. Blank expressions, furtive glances at the clock, or perplexed expressions should cue you to the need to repeat some portion of the demonstration or recapture attention before proceeding.
- Set up standards of workmanship. Do a good thorough job that will challenge your students' ability.
- Encourage your students. Show how easy it is to perform difficult manipulative operations when they are done properly.
- Summarize the steps and key points. You may find it necessary to repeat the demonstration for some students.
- Ask summarizing questions. Do not simply say, "Are there any questions?" Plan specific questions to ask—ones that require students to respond in such a way that you will get feedback on how well they have understood the demonstration.

2. To gain skill in the use of questions, you may wish to refer to Module C-12, *Employ Oral Questioning Techniques*

One way of involving students in summarization and reinforcement following your demonstration is to have a student repeat the demonstration. The following is one of several variations in the demonstration method that may be used to actively involve students in the demonstration:

- First, the teacher performs the operation and tells what is occurring.
- Then, a student performs the operation while the teacher tells what is occurring.
- Then, another student performs the operation and tells what is occurring.

When students are involved in the demonstration as outlined, opportunity for reinforcement of learning is provided. In addition, you are provided with immediate feedback regarding the effectiveness of the demonstration. However, do not put a slower learner on the spot, forcing him/her to fail publicly and face humiliation or perhaps danger.

When you are assured that the students understand the process and are ready to practice the skill demonstrated, students should be directed to the application phase of the lesson. During this phase, provision should be made for students to practice the skills in the laboratory, on the job, or at home.

Optional Activity 2

For a view of how one teacher learned to make effective manipulative skill demonstrations, you may wish to view the videotape, "Demonstration," produced by the Departments of Agricultural and Home Economics Education and the School of Occupational and Adult Education at Oklahoma State University. This videotape shows a teacher demonstrating the same skill twice, once poorly and once effectively. It is very helpful in illustrating why it is important to follow the recommended steps and procedures in planning and demonstrating a manipulative skill.

Your institution may have available other videotapes showing examples of teachers demonstrating manipulative skills. If so, you may wish to view one or more of these videotapes. You might also choose to critique the performance of each teacher in demonstrating a manipulative skill, using the criteria provided in this module or critique forms or checklists provided by your resource person.

Another possibility is to identify a television program involving a manipulative skill demonstration. For example, a home economics teacher could watch a cooking expert such as Julia Child to see how she demonstrates cooking skills.

The following items check your comprehension of the material in the information sheet, Demonstrating a Manipulative Skill, pp. 6–11. Each of the six 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. Explain why the demonstration method is especially appropriate for teaching manipulative skills.

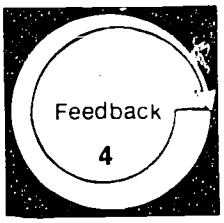
2. If an instructor is highly experienced in a particular manipulative skill, why should that instructor prepare a lesson plan before giving a demonstration?

3. Why should a teacher practice the demonstration prior to presenting it to the class?

4. Is showing students several ways of performing the skill a good idea? Why or why not?

5. How can a teacher be sure that the students understand what is being done during the demonstration and why it is being done?

6. What types of summarization activities can an instructor use to conclude a demonstration effectively?



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. When a manipulative skill is to be learned by students, they need to learn a number of things all at once: (1) a succession of steps, (2) the order in which to perform those steps, (3) the techniques involved in performing those steps, and (4) the safety precautions involved. The most straightforward way to learn all this is to **see** it actually performed and **hear** it explained simultaneously, i.e., to have it demonstrated.

2. Being able to perform a skill yourself does not guarantee that you can **explain** how to perform that skill. For persons who are especially skilled at an operation, that operation has become almost automatic. When you first learned division and multiplication in grammar school, you had to go through careful consecutive steps on paper to get your answers. As time went on, a lot of those steps were condensed or done in your head. It became easy and self-evident.

   To teach the skill, it is necessary to break that skill back down into those steps. To be sure that (1) the operation is presented in logical steps the students can follow, (2) all steps are presented, (3) key points are highlighted, (4) the safety practices central to the successful performance of the operation are not overlooked, and (5) all tools, supplies, equipment, and visuals necessary to present that demonstration have been identified, you need to prepare a lesson plan.

3. Practice is an excellent technique for (1) making you more confident in your ability to present the demonstration, (2) giving a little polish to the demonstration, (3) catching errors or potential problem areas, and (4) checking to see if all steps have been included and all necessary equipment and materials are available and in good condition.

4. It is not a good idea to present more than one way to perform a manipulative skill. Mastering all the steps involved in one method is possible. Trying to master two or more methods for performing a brand new skill can be confusing. It is far better to limit the amount of new information you expect students to absorb at one time. If it is important for students to know how to perform the skill using more than one method, these demonstrations should be presented separately.

5. During the demonstration, you can get feedback concerning whether students are following and understanding the procedure by asking key questions. These questions should be prepared ahead of time to ensure that you will get feedback at key points throughout the demonstration.

   Another source of feedback is available from students' nonverbal responses. If a student is daydreaming or has a perplexed look on his/her face, then you are getting very real feedback that the student is not following the demonstration.

6. To summarize, the instructor can merely restate the steps and key points or run through the demonstration again briefly. However, it is preferable to involve students in the summarization. This can be done by having students restate the steps and key points or by asking key questions.

   One good method for summarizing, involving students, reinforcing the learning, and getting feedback all at the same time is to follow your demonstration by (1) having a student perform the operation while you explain the procedure and then (2) having another student perform and explain the operation unaided, but under your supervision.

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, Demonstrating a Manipulative Skill, pp. 6–11, or check with your resource person if necessary.

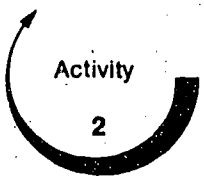
NOTES

Learning Experience II

OVERVIEW

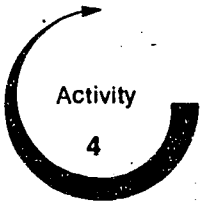
In a simulated classroom or laboratory situation, demonstrate a manipulative skill.

You will be selecting a student performance objective in your occupational specialty that lends itself to the demonstration of a manipulative skill.

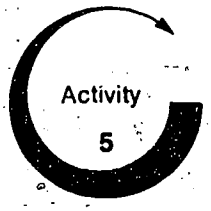


You will be selecting, modifying, or developing a lesson plan designed to achieve that objective using a manipulative skill demonstration.

You may wish to have your resource person review the adequacy of your plan.

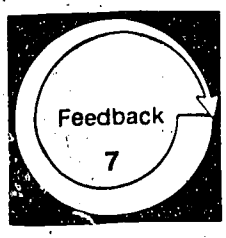


You will be selecting, obtaining, or preparing the materials and equipment needed for your demonstration.

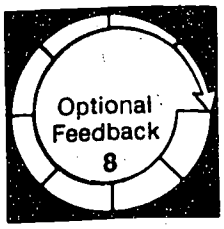


You will be presenting the lesson to a group of peers or to your resource person.

You may wish to record your demonstration on videotape for self-evaluation purposes.



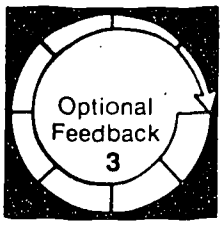
Your competency in demonstrating a manipulative skill will be evaluated by your peers or by your resource person, using copies of the Lesson Presentation Checklist, pp. 21–32.



If you videotape your demonstration, you may wish to evaluate your own performance, using a copy of the Lesson Presentation Checklist, pp. 21–32.

Select a student performance objective in your occupational specialty that could be achieved, at least partially, by a manipulative skill demonstration. (In a real-world situation, you start with an objective and then select the most appropriate materials and teaching methods. In this practice situation, however, you need to select an objective that lends itself to demonstrating a manipulative skill.)

Prepare a detailed lesson plan that includes an explanation of how the manipulative skill will be demonstrated. Instead of developing a lesson plan, you may select a lesson plan that you have developed previously and adapt that plan so that it includes a manipulative skill demonstration.

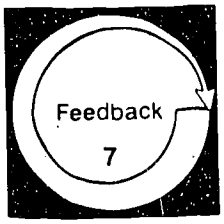


You may wish to have your resource person review the adequacy of your plan. He/she could use the Teacher Performance Assessment Form in Module B–4, *Develop a Lesson Plan*, as a guide.

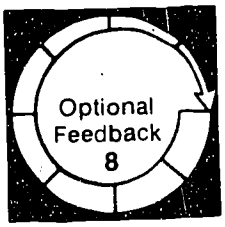
Based on your lesson plan, select, obtain, or prepare the materials and equipment you will need for your demonstration.

In a simulated classroom or laboratory situation, present your lesson to a group of two to five peers. These peers will serve two functions: (1) they will role-play the students to whom you are presenting your lesson, and (2) they will evaluate your performance. If peers are not available to you, you may present your lesson to your resource person.

If you wish to self-evaluate, you may record your performance on videotape so you may view your own demonstration at a later time.



Multiple copies of the Lesson Presentation Checklist are provided in this learning experience, pp, 21–32. Give a copy to each peer or to your resource person before making your presentation in order to ensure that each knows what to look for in your lesson. However, indicate that, during the lesson, all attention is to be directed toward you and that the checklists are to be completed **after** the lesson is finished.



If you videotaped your lesson, you may wish to self-evaluate using a copy of the Lesson Presentation Checklist, pp. 21–32.

LESSON PRESENTATION 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
1. The physical environment was reasonably comfortable	☐	☐	☐	☐
2. The physical setting for the demonstration was as close to actual conditions on the job as possible	☐	☐	☐	☐
3. All necessary tools, materials, supplies, and visuals were organized and at hand when the teacher needed them	☐	☐	☐	☐
4. All tools, materials, supplies, and visuals were in good condition	☐	☐	☐	☐
5. The teacher introduced the demonstration with explanations of: a. what was going to be demonstrated	☐	☐	☐	☐
b. how it fit in with what the class already knew or had experienced	☐	☐	☐	☐
c. how it fit in with future activities	☐	☐	☐	☐
6. The teacher defined any new terms that would be encountered during the demonstration	☐	☐	☐	☐
7. The teacher motivated the class to want to learn the new skill	☐	☐	☐	☐
8. Each step necessary to the operation was demonstrated	☐	☐	☐	☐
9. Each step was explained as it was demonstrated	☐	☐	☐	☐
10. The steps were presented in a logical order	☐	☐	☐	☐
11. Key points or specific techniques essential to performing each step were explained	☐	☐	☐	☐
12. Safety practices specific to the operation were covered	☐	☐	☐	☐
13. If a step involved very small parts or intricate processes, the teacher used visuals or models to clarify the step	☐	☐	☐	☐
14. If a step was normally time-consuming (e.g., "refrigerate batter overnight"), the teacher had completed the step ahead of time	☐	☐	☐	☐
15. The procedure followed for the operation was the one most commonly used in the field	☐	☐	☐	☐

	N/A	No	Partial	Full
16. The steps were presented slowly enough that students did not miss key points	☐	☐	☐	☐
17. Every movement in the demonstration was clearly visible	☐	☐	☐	☐
18. If direction of movement was of special importance, students were positioned accordingly	☐	☐	☐	☐
19. The teacher could be clearly heard	☐	☐	☐	☐
20. The teacher talked to the students, and not to the materials	☐	☐	☐	☐
21. The teacher performed the operation with ease	☐	☐	☐	☐
22. The teacher set up standards of workmanship by doing a good, thorough job	☐	☐	☐	☐
23. The teacher encouraged questions	☐	☐	☐	☐
24. The teacher asked key questions throughout to ensure that the students understood the demonstration	☐	☐	☐	☐
25. The teacher included some activity to summarize the steps and key points	☐	☐	☐	☐
26. The scope of the demonstration was sufficiently limited that students could absorb it all	☐	☐	☐	☐

Level of Performance: All items must receive FULL or N/A responses. If any item receives a NO or PARTIAL 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).

LESSON PRESENTATION CHECKLIST

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Date

Resource Person

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	N/A	No	Partial	Full
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2. The physical setting for the demonstration was as close to actual conditions on the job as possible	☐	☐	☐	☐
3. All necessary tools, materials, supplies, and visuals were organized and at hand when the teacher needed them	☐	☐	☐	☐
4. All tools, materials, supplies, and visuals were in good condition	☐	☐	☐	☐
5. The teacher introduced the demonstration with explanations of: a. what was going to be demonstrated	☐	☐	☐	☐
b. how it fit in with what the class already knew or had experienced	☐	☐	☐	☐
c. how it fit in with future activities	☐	☐	☐	☐
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8. Each step necessary to the operation was demonstrated	☐	☐	☐	☐
9. Each step was explained as it was demonstrated	☐	☐	☐	☐
10. The steps were presented in a logical order	☐	☐	☐	☐
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14. If a step was normally time-consuming (e.g., "refrigerate batter overnight"), the teacher had completed the step ahead of time	☐	☐	☐	☐
15. The procedure followed for the operation was the one most commonly used in the field	☐	☐	☐	☐

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16. The steps were presented slowly enough that students did not miss key points	☐	☐	☐	☐
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24. The teacher asked key questions throughout to ensure that the students understood the demonstration	☐	☐	☐	☐
25. The teacher included some activity to summarize the steps and key points	☐	☐	☐	☐
26. The scope of the demonstration was sufficiently limited so students could absorb it all	☐	☐	☐	☐

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26. The scope of the demonstration was sufficiently limited that students could absorb it all	☐	☐	☐	☐

Level of Performance: All items must receive FULL or N/A responses. If any item receives a NO or PARTIAL 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).

Learning Experience III

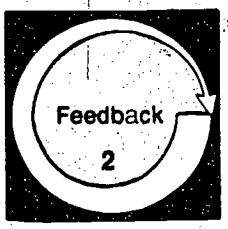
FINAL EXPERIENCE

In an **actual teaching situation,*** demonstrate a manipulative skill.

As you plan your lessons, decide when a manipulative skill demonstration could be used effectively to aid in meeting the lesson objectives. Based on that decision, demonstrate a manipulative skill. This will include—

- selecting, modifying, or developing a lesson plan that includes detailed plans for presenting such a demonstration
- locating and/or developing all necessary equipment and materials
- preparing the physical setting for the demonstration
- presenting the lesson to the class

NOTE: Your resource person may want you to submit your written lesson plan to him/her for evaluation before you present your lesson. It may be helpful for your resource person to use the TPAF from Module B–4, *Develop a Lesson Plan*, to guide his/her evaluation.



Arrange in advance to have your resource person observe your lesson presentation.

Your total competency will be assessed by your resource person, using the Teacher Performance Assessment Form, pp. 35–36.

Based upon the criteria specified in this assessment instrument, your resource person will determine whether you are competent in demonstrating a manipulative skill.

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

NOTES

TEACHER PERFORMANCE ASSESSMENT FORM

Demonstrate a Manipulative Skill (C–16)

Name _____

Date _____

Resource Person _____

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.

	LEVEL OF PERFORMANCE					
	N/A	None	Poor	Fair	Good	Excellent
1. The physical environment was reasonably comfortable	☐	☐	☐	☐	☐	☐
2. The physical setting for the demonstration was as close to actual conditions on the job as possible	☐	☐	☐	☐	☐	☐
3. All necessary tools, materials, supplies, and visuals were organized and at hand when the teacher needed them	☐	☐	☐	☐	☐	☐
4. All tools, materials, supplies, and visuals were in good condition	☐	☐	☐	☐	☐	☐
5. The teacher introduced the demonstration with explanations of:						
a. what was going to be demonstrated	☐	☐	☐	☐	☐	☐
b. how it fit in with what the class already knew or had experienced	☐	☐	☐	☐	☐	☐
c. how it fit in with future activities	☐	☐	☐	☐	☐	☐
6. The teacher defined any new terms that would be encountered during the demonstration	☐	☐	☐	☐	☐	☐
7. The teacher motivated the class to want to learn the new skill	☐	☐	☐	☐	☐	☐
8. Each step necessary to the operation was demonstrated	☐	☐	☐	☐	☐	☐
9. Each step was explained as it was demonstrated	☐	☐	☐	☐	☐	☐
10. The steps were presented in a logical order	☐	☐	☐	☐	☐	☐
11. Key points or specific techniques essential to performing each step were explained	☐	☐	☐	☐	☐	☐
12. Safety practices specific to the operation were covered.	☐	☐	☐	☐	☐	☐
13. If a step involved very small parts or intricate processes, the teacher used visuals or models to clarify the step	☐	☐	☐	☐	☐	☐

	N/A	None	Poor	Fair	Good	Excellent
14. If a step was normally time-consuming (e.g., "refrigerate batter overnight"), the teacher had completed the step ahead of time	☐	☐	☐	☐	☐	☐
15. The procedure followed for the operation was the one most commonly used in the field	☐	☐	☐	☐	☐	☐
16. The steps were presented slowly enough that students did not miss key points	☐	☐	☐	☐	☐	☐
17. Every movement in the demonstration was clearly visible	☐	☐	☐	☐	☐	☐
18. If direction of movement was of special importance, students were positioned accordingly	☐	☐	☐	☐	☐	☐
19. The teacher could be clearly heard	☐	☐	☐	☐	☐	☐
20. The teacher talked to the students, and not to the materials	☐	☐	☐	☐	☐	☐
21. The teacher performed the operation with ease	☐	☐	☐	☐	☐	☐
22. The teacher set up standards of workmanship by doing a good, thorough job	☐	☐	☐	☐	☐	☐
23. The teacher encouraged questions	☐	☐	☐	☐	☐	☐
24. The teacher asked key questions throughout to ensure that the students understood the demonstration	☐	☐	☐	☐	☐	☐
25. The teacher included some activity to summarize the steps and key points	☐	☐	☐	☐	☐	☐
26. The scope of the demonstration was sufficiently limited that students could absorb it all	☐	☐	☐	☐	☐	☐

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

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