ABSTRACT

        This module is one of a series of more than 125
performance-based teacher education (PBTE) learning packages focusing
upon specific professional competencies of vocational instructors.
The competencies upon which these modules are based were identified
and verified through research as being important to successful
occupational teaching at all levels of instruction. The modules are
suitable for the preparation of instructors in all occupational
areas. This module is designed to give prospective teachers skill in
locating and evaluating existing materials, in developing materials
of their own, and in organizing their materials into a simple
instructional delivery system, easily usable by students and
consistent with the essential elements and facilitating
characteristics of competency-based education (CBE). The module
consists of a terminal objective, enabling objectives, prerequisites,
resources, and four learning experiences. The learning experiences,
each based on an enabling objective, contain activities, information,
case studies, examples, and feedback. The final learning experience
is an actual teaching situation in which the prospective teacher is
to provide instructional materials for CBE and be assessed by a
resource person. (KC)

Provide Instructional Materials for CBE

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

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

FOREWORD

MODULE
K-4

Provide Instructional Materials for CBE

Module K-4 of Category K—Implementing Competency-Based Education (CBE)
PROFESSIONAL TEACHER EDUCATION MODULE SERIES

Lois G. Harrington, Program Associate

The National Center for Research in Vocational Education
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                        │  ORGANIZE THE    │
                        │  CONTENT FOR     │
                        │  A CBE PROGRAM   │
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                                                        │  MANAGE THE         │
                                                        │  DAILY ROUTINES OF  │
                                                        │  YOUR CBE PROGRAM   │
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│  PREPARE    │         │  ORGANIZE YOUR   │
│  YOURSELF   │─────────│  CLASS AND LAB   │
│  FOR CBE    │         │  TO INSTALL CBE  │
└─────────────┘         └──────────────────┘
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                                                        │  GUIDE YOUR         │
                                                        │  STUDENTS THROUGH   │
                        ┌──────────────────┐            │  THE CBE PROGRAM    │
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                        │  INSTRUCTIONAL   │
                        │  MATERIALS       │
                        │  FOR CBE         │
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CBE IMPLEMENTATION PROCESS

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An effective competency-based program involves more than having a list of verified competencies and a strong instructional management system. You need to devise a system to provide instruction to students covering those competencies. And this instructional system must be consistent with the essential elements and facilitating characteristics of competency-based education (CBE).

How do you as a vocational-technical instructor locate or develop the instructional materials needed to support such a program? This module is designed to give you skill in locating and evaluating existing materials, in developing materials of your own, and in organizing your materials into a simple instructional delivery system, easily usable by students.

With the right materials, the right variety of materials, and a system for guiding students in their use, you will find that you are well on your way to having a competency-based program that is both effective and manageable.

To see how this module relates to the other modules in Category K, refer to the diagram on p. 2.

ABOUT THIS MODULE

Objectives

Terminal Objective: In an actual teaching situation, provide instructional materials for CBE. Your performance will be assessed by your resource person, using the Teacher Performance Assessment Form, pp. 55–57 (*Learning Experience IV*).

Enabling Objectives:

1. After completing the required reading, evaluate a CBE learning package covering a competency in your occupational area (*Learning Experience I*).
2. After completing the required reading, critique the adequacy of a given learning guide (*Learning Experience II*).
3. Given a list of simple competencies, develop a complete learning guide covering a competency that you select from the list (*Learning Experience III*).

Prerequisites

The modules in Category K are not designed for the prospective teacher with no prior training and/or experience. They assume that you have achieved a minimal level of content knowledge in your occupational specialty and skill in the core teacher competencies of instructional planning, execution, and evaluation. They then build on or expand that knowledge and skill level, specifically in terms of implementing competency-based education.

In addition, to complete this module, you should have knowledge of the essential elements and facilitating characteristics of CBE. If you do not already meet this requirement, meet with your resource person to determine what method you will use to do so. One option is to complete the information and practice activities in the following module:

* *Prepare Yourself for CBE*, Module K-1

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
Required

Existing sources of materials through which you can locate and obtain a CBE learning package covering a competency in your occupational area.

A resource person to evaluate your competency in evaluating a CBE learning package.

Learning Experience II
Optional

Reference: Fardig, Glen E. *How to Write Student Learning Guides: A Handbook.* Orlando, FL: Orange County Public Schools, 1982.

Reference: Andreyka, Robert E., and Beverly, Lisa. *Manual for Writing Student Learning Guides: The Ridge Format.* Winter Haven, FL: Ridge Vocational-Technical Center, 1981.

Reference: Pucel, David J. "Instructor-Developed CBVE Materials." *School Shop.* 39 (April 1980): 38–41.

Reference: Sabin, William A. *The Gregg Reference Manual.* New York, NY: McGraw-Hill Book Company, Gregg Division, most recent edition.

Learning Experience III
Required

A resource person to evaluate your competency in developing a complete learning guide.

Learning Experience IV
Required

An actual teaching situation in which you can provide instructional materials for CBE.

A resource person to assess your competency in providing instructional materials for CBE.

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

Enabling Objective

After completing the required reading, evaluate a CBE learning package covering a competency in your occupational area.

Activity 1

You will be reading the information sheet, Selecting and Organizing CBE Instructional Materials, pp. 6–15.

Activity 2

You will be locating and obtaining a CBE learning package covering a competency in your occupational area and evaluating it against a given set of evaluation criteria.

Feedback 3
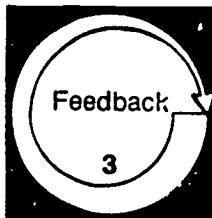
Your competency in evaluating a CBE learning package will be evaluated by your resource person, using the Learning Package Evaluation Checklist, p. 17.

The instructional materials requir d to support a competency-based instructional program are many and varied. For information on the characteristics of competency-based materials and on the procedures for locating, evaluating, and organizing existing materials, read the following information sheet.

SELECTING AND ORGANIZING CBE INSTRUCTIONAL MATERIALS

Well- eveloped, specifically targeted, and carefully tested instructional materials are crucial to the success of a competency-based instructional program. The five essential elements of competency-based education (CBE) all have implications for the kinds of instructional materials needed. In addition, several of the facilitating characteristics of CBE—relating to individualized instruction, self-pacing, frequent feedback, and field-based instruction—require that materials with unique qualities must be provided to students.[1]

What this means is that you will find it difficult, if not impossible, to establish a fully operational CBE program using a single textbook and your own presentations as the primary modes of instruction. Such an approach does not lend itself to the implementation of individualized, self-paced instruction. The instructional materials must allow students to learn and move along independently, without constant direction, correction, and instruction from you, the busy instructor.

Furthermore, it is highly unlikely that any one existing text will be geared exactly to the competencies you have identified for your program—competencies that reflect actual local occupational requirements. There is likely to be far too much extraneous matter, and the terminology used may not match that of your program competencies.

The standard texts and other training materials with which you are familiar will undoubtedly have much that you can use (e.g., descriptions of technical procedures, related information, theory, illustrations). However, effective CBE instructional materials require additional components—student learning activities and performance tests, for example. Thus, to support your CBE program, it is likely that some instructional materials will have to be developed, selected, or adapted.

In addition, a learning management system will have to be provided for routing students through those materials. If you are to serve effectively as a resource person—being free to advise, instruct, facilitate, and evaluate—this system must allow students to take personal responsibility for progressing from activity to activity—in other words, responsibility for their own learning. For that to occur, some sort of "road map for learning" is required.

Sound like a lot of work? Initially, it may be. But the responsibility is probably not yours alone. Administrators or support personnel may have responsibility for locating and reviewing materials—at least as a first step. The decision to develop materials or to use existing materials may have already been made by the administration when the CBE program model was established. Any decisions you make would then be based on this model.

And, once the instructional system is in place and operational, the development work is basically complete (except for periodic review and update). If you have the right materials for your competencies and your students, and if you have devised a simple, clear way of guiding students in the use of those materials, then you will be free to give students the assistance they need as they move through the program.

Student Learning Materials

These "road maps to learning" are, in CBE, referred to as learning packages, and there are two basic kinds: learning guides and modules. Both include a competency statement and/or performance objective, learning activity directions, an explanation of how performance will be evaluated, and a description of the criteria against which performance will be measured.

There are, however, differences between the two types of learning packages. A learning guide is relatively concise (1–10 pages) and typically refers the student to other sources for information (e.g., texts, workbooks, audiovisuals, instruction sheets, self-checks, answer keys, checklists)—sources not provided within the learning guide itself (see sample 1). It **guides** the student's use of a variety of other materials.

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1. For a review of the essential elements and facilitating characteristics of CBE, you may wish to refer to Module K-1, *Prepare Yourself for CBE.*

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SAMPLE 1

ONE FORM OF LEARNING GUIDE

| Student Competency Sheet |

Unit: 04   D.C. Theory

Competency Statement: 09   Measure the voltage, current, and total resistance in a series circuit

Performance Objective: 01   Given access to meters and given any series wired circuit board, measure and record the circuit voltage, current, and total resistance within the time allocated by the instructor. Your readings must be within ±2% of the actual value, as predetermined by the instructor. Your care and use of meters must be in accordance with the meter checklist. You may not use references.

Learning Activities:

1. Read the entire Student Competency Sheet. If you can perform the Performance Objective, ask the instructor for the Criterion Evaluation for this unit. If not, proceed to Learning Activity 2.
2. Read Chapter 3, pp. 43–45, of *Electricity and Electronics*, and complete the following:
   a. Explain what a series circuit is.
   b. How would you explain current in a series circuit?
   c. What happens if you increase resistance while maintaining a constant voltage?
      Discuss your answers with the instructor.
   d. Complete Topic 9 in *Fundamentals of Electricity and Electronics*. Have your instructor check your progress.
3. If you have difficulty in completing the above activity or if so directed by the instructor, read Unit 4 of *D.C. Circuits: An Individualized Approach to Electronics*, and complete the following:
   a. Answer all the questions included in the reading assignment.
   b. Obtain a voltmeter and a circuit board, and practice measuring the voltage in several circuits.
      Have the instructor check your progress.
4. Obtain a series wired circuit board and the necessary voltmeter, ammeter, and ohmmeter, and practice using the meters to measure values of current, voltage, and resistance until you become proficient in their use. Have the instructor evaluate your performance.

Supplemental Reading:

1. Chapter 11 of *Basic Electricity: Theory and Practice*
2. Chapter 4 of *Fundamentals of Electricity*
3. Pp. 1–14 of *Basic Electricity*, Volume 2

Criterion Evaluation:

Given access to the necessary meters, measure and record the requested values of voltage, current, and resistance of the series circuit furnished by the instructor. You must complete the exercise in ten minutes and all answers must be within ±2% of their actual value. In obtaining measurements, the use and care of meters must be in accordance with the meter checklist. You may not use references.

    Required Measurements:
    1. Applied voltage
    2. Total current
    3. Total resistance
    4. Voltage drop R1
    5. Voltage drop R2
    6. Voltage drop R3
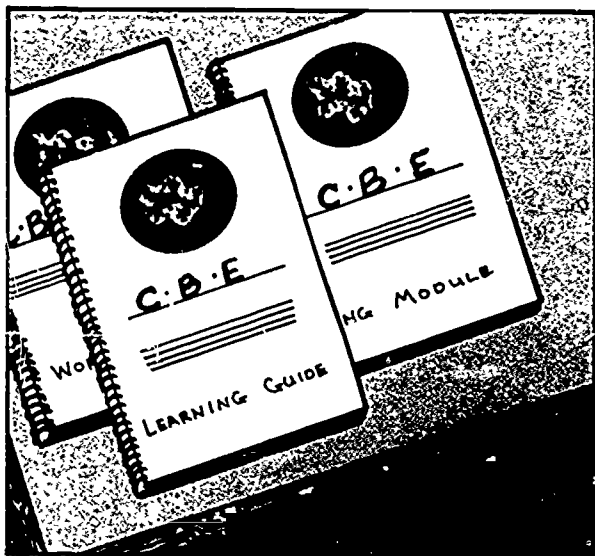
A module, on the other hand, is typically self-contained, with 10–30 pages or more. All the materials and directions that a student needs in order to achieve the competency and to demonstrate this achievement through evaluation of performance are contained within the module. The document you are now reading is a module.

This is, however, an oversimplification. Granted, the module is self-contained in the sense that instruction sheets or information sheets, which cover the cognitive material needed to achieve the competency, are usually provided within its covers. Nonetheless, if the different learning styles of students are to be met, then options for different learning paths to competence must be provided. Thus, the module, too, must refer to outside sources (e.g., media, field trips, alternate or supplementary readings).

Provision of a variety of learning paths is also important for students who are "recycling" because they did not achieve competence. Rather than rereading the same information sheet that failed to teach them the first time, they need another resource to tap.

It is probably best not to become too concerned about the differences between learning packages, but to focus on their similarities instead. Both provide students with the guidance they need to work through the instructional program.

Systems for Organizing Materials

Let's look at **some** alternative systems for providing materials and a structure for their use. One must start with two basic assumptions: (1) the competencies for your program have been identified and verified, and (2) each student has a list that indicates the competencies he/she is to achieve in order to reach occupational competence (or one level of occupational competence). What happens next? How does the student know what to do to achieve each competency?

One option is to have a specially developed self-contained module for each competency (or cluster of competencies). The student works through a module for each competency (learning, practicing, performing, and being evaluated). When competence is achieved, he/she moves on to the next module.

The self-contained module can be packaged in a variety of ways: stapled, bound in a plastic binder, placed in a loose-leaf notebook, and so on. Note that the more permanent bindings have the advantage of preventing the loss of individual pages. A disadvantage, however, is that it is more difficult to revise the module. The reverse is true with loose-leaf binders. Pages can be lost or misplaced or misordered. On the other hand, by simply slipping in an additional or substitute page, the module can be updated or revised.

Another option is to identify—for each competency—existing materials that are not necessarily competency-based. All resources for a given competency could be placed (1) in a file folder in a filing cabinet, (2) in a resource box on a shelf in the resource center, or (3) in the resource center, according to the existing cataloging system. This approach tells students where to go, but not what to do. What students are to do must be structured by teacher-prepared learning guides.

These learning guides can be placed in the front of each competency file or resource box. Or each student could have a notebook containing not only his/her learning contract or competency list, but also a learning guide for each competency to be achieved. Or there could be a master file of all learning guides—in a single file drawer, rack, or teacher-controlled notebook—that students could refer to or draw from.

Locating Existing Materials

In this information sheet, let us focus on what materials are available to you as you organize the instruction for your CBE program. What sources can you tap to locate the following types of materials:

- CBE modules, which you can use "as is" or adapt for use in your CBE program
- CBE learning guides, which you can use "as is" or adapt for use in your CBE program
- Other materials, which are not fully developed learning packages, but which provide elements that you could use in developing your own learning packages

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Since CBE is coming into its own, there are many sources available. Sample 2 presents an extensive, though not exhaustive, list of the places you can contact to obtain materials you can use in your CBE program.

Evaluating Existing Materials

As you are no doubt aware, instructional materials—whether produced by commercial publishers or educational agencies—can vary greatly in quality. They cannot be taken at face value. In particular, not all materials that claim to be competency-based really are. And not all CBE materials are of good quality.

Therefore, any material you consider using should first be evaluated using the criteria against which you would measure any instructional material, CBE or otherwise. In other words, criteria such as the following should be used:

- Is the content on target? Does it deal specifically with the skills my students need to achieve?
- Is the content concise, including only key content and not extraneous material that will only confuse the students?
- Is the content accurate and up-to-date? Totally? In part?
- Is the material appropriate for my students (e.g., age, reading ability, occupational development)?
- Can my students understand the vocabulary used?
- Will this material motivate my students?
- Is this material geared to the abilities, needs, and interests of all my students? Some of my students?
- Do I have access to the equipment (e.g., projector, slide/tape equipment) necessary to use this material?

- Do I have the facilities (e.g., lab space, equipment, supplies) necessary to use this material effectively?
- Do I have access to the funds necessary to purchase this material?
- Is the material well produced technically? (For example, is the film's sound clear and audible? Is the print in the text easy to read?)
- Has the material been tested? (Does the author or producer have evidence that it will do what it is intended to do?)

There are some additional criteria that need to be considered if the material you are evaluating is a CBE learning package that you intend to use basically "as is" with students. Although the specific criteria may vary depending on the way you or your institution (or district or state) define the fundamental characteristics of a learning package, the evaluation checklist should be similar to the one shown in sample 3.

Bear in mind that there are some materials that you may select not for use with students, but for use in guiding you in developing your own materials—instructional resources for you, the teacher, rather than for students.

By taking the time to review the materials already available to you—and by carefully considering each in light of some specific quality criteria—you can save yourself a good deal of unnecessary effort. There may be materials you can use just as they are. Ideally, you could find a set of CBE learning packages that fit your students and your competencies precisely—but don't count on it

It is more likely that you will find some materials that, with some adaptation, can be made to fit local needs. At the very least, however, you should be able to locate a variety of excellent materials that can, through your development of learning packages, be drawn together into a total, well-organized CBE instructional system.

SAMPLE 2

SOURCES OF INSTRUCTIONAL MATERIALS FOR A CBE PROGRAM

National Sources

Open Entries
The Center for Studies in Vocational Education
Stone Building
Florida State University
2003 Apalachee Parkway
Tallahassee, FL 32301

Open Entries is the quarterly newsletter of the Communication Network for Competency-Based Vocational Education. Its purpose is to provide a nationwide system for the exchange of information about CBE materials, methods, conferences, workshops, and demonstration sites. By subscribing to this publication, you can learn what others are doing or send out a plea for help in a particular area.

Interstate Distributive Education Curriculum Consortium (IDECC)
The Ohio State University
1564 West First Avenue
Columbus, OH 43212

IDECC, a consortium of 28 states, was established in the early 1970s to develop a competency-based learning system for the improvement of instruction in distributive education. Using a research base of validated competencies for over 100 marketing-related occupations or occupational clusters, the consortium has developed—and is continuing to develop and update—a series of field-tested learning activity packages (LAPs). Member states have access not only to these LAPs, but also to a computer management matrix, which helps teachers to plan and manage the CBE program, and which keys competencies to LAPs.

Each LAP has a student version and teacher version. The student LAP includes a pretest, objectives, activity directions, alternate learning activities, needed materials (e.g., information sheets, exercise sheets), and a glossary. The teacher LAP provides scripts for group presentations, transparency masters, alternate group activities, a posttest, and answer keys.

Mid-America Vocational Curriculum Consortium (MAVCC)
1500 West Seventh Avenue
Stillwater, OK 74074

MAVCC has available numerous curricular materials, including 26 "units of instruction" in the areas of trade and industrial education (e.g., electronics, small engine repair, residential plumbing, health occupations, air conditioning, automotives), home economics (e.g., child care, foods, clothing), agriculture/horticulture, and distributive education/marketing (e.g., merchandising, manufacturing). Although designated as units of instruction and not as strictly competency-based, these materials contain some of the elements of a CBE learning package, including objectives, suggested activities, and criterion-referenced tests.

The National Center for Research in Vocational Education
National Center Publications
The Ohio State University
1960 Kenny Road
Columbus, OH 43210

Available from the National Center are 55 metric education packages, each targeted to a different occupational area. Each package includes performance objectives, learning activities, supporting information, suggested teaching techniques, objective-based evaluation items, and answer keys.

Competency-Based Individualized Vocational Education Consortium (CIVEC)
Curriculum Publications Clearinghouse
Western Illinois University
Horrabin Hall 47
Macomb, IL 61455

Student learning guides have been prepared by CIVEC to cover more than 18 occupational areas, including welding, dental assistant, data processing, machine trades, nurse's aide, horticulture, clerical-office, media specialist, clothing, farm management, drafting, coal mining technology, aviation mechanics, machinist, health occupations, auto mechanics, child care, and office occupations. Each learning guide contains a performance objective, a learning contract, steps in performance of tasks, resource lists, activity sheets, written criterion exam, performance checklist, and answer keys.

Vocational-Technical Education Consortium of States (V-TECS)
Curriculum Publications Clearinghouse
Western Illinois University
46 Horrabin Hall
Macomb, IL 61455

V-TECS produces resource materials for use in curriculum development, program planning, and program evaluation. Over 100 catalogs have been prepared for specific occupational titles and include the following: duty/task list, performance objectives, performance guides (steps for performing the task), equipment/tool lists, bibliography of resource literature, and validation information. Some V-TECS catalogs include criterion-referenced measures in addition to the other components. Instructors in member states may get the catalogs from their state departments of education. Others will need to order directly from V-TECS.

*ERIC Clearinghouse on Adult, Career,
and Vocational Education*
The National Center for Research in Vocational
Education
The Ohio State University
1960 Kenny Road
Columbus, OH 43210

The 19 Educational Resources Information Center (ERIC) clearinghouses acquire, select, and process research, instructional, and related materials. These are announced in Resources in Education (RIE) and are available through the ERIC Document Reproduction Service. Indexes to and summaries of a variety of materials intended primarily for use by vocational educators are prepared by the ERIC Clearinghouse on Adult, Career, and Vocational Education. These are announced bimonthly in Resources in Vocational Education (RIVE). Relevant journal articles are annotated and announced in Current Index to Journals in Education (CIJE). Computer searches of the ERIC microfiche collection can be run for users on a cost-recovery basis.

**National Network for Curriculum Coordination
in Vocational and Technical Education (NNCCVTE)**

The U.S. Department of Education supports NNCCVTE, which includes six regional curriculum coordination centers, to facilitate sharing of curriculum materials on a nationwide basis. These centers maintain libraries of curricular materials, including occupational analyses, and also have reference documents that might help locate occupational analyses available elsewhere. To acquire materials on a specific topic, contact the NNCCVTE state liaison representative through your state department of education.

*East Central Network
for Curriculum Coordination (ECNCC)*
Attn: Task List Coordinator
Sangamon State University
E-22
Springfield, IL 62708

ECNCC, largest of the six regional curriculum coordination centers in NNCCVTE, is establishing a Task List Access System to promote the exchange of lists of identified tasks workers perform in a given occupation—the tasks students must master to be competent in that occupation. As of this writing, the access file contains about 500 task lists from the major program areas of agriculture, business, health care, home economics, and trade and industrial education. To obtain copies of lists already in the file, contact your NNCCVTE state liaison representative. To contribute to the file, write the task list coordinator at ECNCC.

Professional Associations

Professional associations serving teachers or workers in the various occupational service areas can also be contacted to see if they have supported or are supporting the development of any CBE or CBE-related materials. Examples of this type of development are as follows. The ED number listed refers to the index number in the ERIC system.

American Home Economics Association (AHEA)
Washington, DC

AHEA has supported the development of an Occupational Home Economics Series, comprising ten CBE modules. Each module has listings of competencies, student behavioral objectives, teaching strategies, and teaching resources; an assessment section (with pre- and posttests and a perfor-

mance assessment instrument); an appendix that includes both learner and teacher information sheets (worksheets, fact sheets, activity sheets, answer sheets); and an introduction that describes how the materials were developed and tested, directions for teacher use, and a rationale and job description for the occupational area. The modules are available from the U.S. Government Printing Office, Washington, DC 20402. ED 155 384

Associated General Contractors
1957 East Street, N.W.
Washington, DC 20006

This organization has supported the development of instructional units for such areas as bricklaying, cement masonry, and commercial carpentry. Each unit includes student behavioral objectives, suggested activities, information sheets, transparency masters, job sheets, assignment sheets, answer sheets, paper-and-pencil and criterion-referenced performance tests, and test answers. ED 156 922; ED 156 920; ED 170 614

University Resources

The following are some examples of the types of materials that are being developed through university special projects or curriculum labs—materials that could be useful in a CBE program:

Allied Health Professions Project
University of California
1003 Wilshire Boulevard
Santa Monica, CA 90401

This project resulted in the production of a series of task analyses and modules to support individualized instruction in the clinical laboratory occupations. Each module includes directions for student use, performance objectives, a vocabulary list, a general introduction, a skill lesson (specific objective, materials and equipment listing, and step-by-step illustrated procedure), a performance checklist, enrichment activities, and reading assignments. ED 069 897

Vocational Curriculum Materials Center
Pittsburg State University
Pittsburg, KS 66762

As part of a Basic Core Curriculum Project, 29 units of instruction were prepared in the area of horticulture. Each unit includes a terminal objective, specific objectives, information sheets, assignment sheets, and a unit test. ED 185 368 - ED 185 370

**Ohio Agricultural Education
Curriculum Materials Service**
Room 254, 2120 Fyffe Road
The Ohio State University
Columbus, OH 43210

This center has produced a number of student manuals, teacher supplements, slide series, cassettes, transparency masters, sample exams, forms, and task sheets for a wide range of agriculture-related courses. The materials are tied to the Agdex Filing System. Although not competency-based in nature, they could be used as resources within a CBE program or as teacher resources in producing learning packages.

Instructional Materials Laboratory
Trade and Industrial Education
The Ohio State University
112 Townshend Hall
1885 Neil Avenue Mall
Columbus, OH 43210

Like many curriculum labs and centers, this laboratory has developed and published a variety of occupational and task analyses. This particular lab has released analyses for over 100 T&I occupational areas. It has also produced many other instructional guides, manuals, etc.

South Carolina Vocational Education Media Center
Clemson University
10 Tillman Hall
Clemson, SC 29631

This center has produced 13 sets of learning activity packages (LAPs) based on the performance objectives in the V-TECS Secretarial Catalog. Designed for self-paced, individualized instruction, the 87 LAPs typically include a student manual, instructor's manual, filmstrips, and transparency masters. A student manual contains information, related activities, self-tests, and an answer key. An instructor's manual contains teaching instructions, a list of the equipment and materials needed, samples, and a filmstrip script.

In addition, the center has produced 14 food service worker modules (ED 176 044), 96 tractor mechanics LAPs (ED 171 933; ED 171 934; ED 181 265 - ED 181 267), 25 greenhouse production LAPs (ED 179 801), 15 floriculture LAPs (ED 181 264), and 84 gardening and groundskeeping LAPs (ED 181 268; ED 185 358). Each LAP contains the following: introduction; directions; objectives; learning activities; lists of tools, equipment, materials, and supplies needed; safety considerations; activity instructions; self-check; final checkout activity; and final checklist.

Occupational Curriculum Laboratory
East Texas State University
Commerce, TX 75428

This lab has produced teachers' guides and units of instruction for health occupations education (10 units), office education (46 units), office duplication practices (33 units), general construction trades (43 units), and general mechanical repair (19 units). Each unit contains performance objectives, outline of minimum student activities, information sheets, transparency masters, job sheets, student assignment sheets, objective tests, and answer sheets. These materials could be useful in developing CBE materials locally. ED 170 601 - ED 170 613

Division of Vocational-Technical Education
Virginia Polytechnic Institute and State University
Blacksburg, VA 24060

At VPI, a course for receiving clerks was developed, involving module topic outlines on nine topics and the development of prototype modules. Each outline included a concept statement, performance objectives, generalizations, occupational competencies, suggested learning activities, and criterion-referenced measures. ED 159 423

Many state departments of education and state curriculum labs have also developed a number of related materials. Six specific examples follow; you should check with your own state as well.

Competency Based Vocational Education Unit
Division of Materials and Curriculum
1912 Capital Plaza Tower
Frankfort, KY 40601

Over 1,500 modules have been developed in Kentucky in 28 occupations, representing all vocational service areas. Each module is developed based on one performance objective and includes instruction sheets, self-checks, and final checkout activities. The modules are supplemented by slide/tapes and instructor manuals.

Curriculum Development Unit
New Mexico State Department of Education
Education Building
Santa Fe, NM 87503

This unit has developed ten mini-manuals on office communication proofreading. Each mini-manual includes terminal and specific objectives, information, tasks for practice, and a test. Answer keys are provided in teacher manuals. ED 146 320 - ED 146 328

The Center for Studies in Vocational Education
2003 Apalachee Parkway
Tallahassee, FL 32301

Supported by the Florida Division of Vocational Education, this center has produced competency-based instructional materials for a number of programs. Of particular note are learning packages for farm management.

Curriculum & Instructional Materials Center (CIMC)
Oklahoma State Department of Vocational
   and Technical Education
1500 West Seventh Avenue
Stillwater, OK 74074

Part of NNCCVTE, this center also does a good deal of development work. Covering all vocational service areas, their materials are in the form of loose-leaf units of instruction. Each unit contains objectives, suggested activities, information sheets, transparency masters, assignment sheets, job sheets, criterion-referenced unit tests, and answer sheets. This center has also produced a large number of competency profiles.

Vocational Curriculum Laboratory
Cedar Lakes Conference Center
Ripley, WV 25271

A unit of the West Virginia Department of Education, Bureau of Vocational-Technical and Adult Education, this center has helped to support the development of a number of competency-based curricula for vocational education areas, including prevocational business and office, home management, and nursing assistant. Each curriculum package includes a teacher's section, an introduction, student competency sheets and learning activity directions, supplements, and evaluation sheets.

Wisconsin Vocational Studies Center
University of Wisconsin
Madison, WI 53706

This center has developed seven instructional modules (instructional units) on solar energy systems. Supported by a glossary and transparency masters, each module contains unit and specific objectives, reading material, an assignment sheet, activities, a unit test, and an answer key. ED 167 362

Locally Produced Resources

Some secondary and postsecondary schools have developed their own CBE materials. In contacting these schools, the only caution would be that, in some cases, supplies may be limited.

Competency-Based Vocational Education Demonstration Site
Ridge Vocational-Technical Center
7700 State Route 544 North
Winter Haven, FL 33880
(813) 422-6402

Minnesota Curriculum Services Center
3554 White Bear Avenue
White Bear Lake, MN 55110
(612) 770-3943

Media Center
State Fair Community College
1900 Clarendon Road
Sedalia, MO 65301
(816) 826-7100

Competency-Based Vocational Education Project
Orange County Public Schools
434 North Tampa Avenue
Orlando, FL 32802
(305) 422-3200

PACE Project
Hocking Technical College
Nelsonville, OH 45764
(614) 753-3591

Skyline Career Development Center
Dallas Independent School District
Dallas, TX
Contact: Harper & Row, NY, NY

Fox Valley Technical Institute
Educational Resource Center
P.O. Box 2277
Appleton, WI 54913
(414) 735-5633

Clearinghouse
Holland College, Royalty Centre
Enman Crescent
West Royalty, Prince Edward Island
CANADA, C1A 7N9
(902) 892-9124 or (902) 892-2401

SAMPLE 3

CBE MATERIALS CHECKLIST

Directions: Rate the CBE instructional materials against each of the following criteria. Place an X in the NO, PARTIAL, or YES box beside each item to indicate how well the materials meet that criterion. If a criterion is not applicable to the materials in question, place an X in the N/A box.

Name _____

Title of Materials _____

Date. _____

RATING

	N/A	No	Partial	Yes
1. The learning package contains the following basic components:				
a. clear directions for using the learning package or a self-explanatory format	☐	☐	☐	☐
b. a rationale or introduction explaining the purpose and importance of the skill being covered	☐	☐	☐	☐
c. a competency statement and/or performance objective	☐	☐	☐	☐
d. clear, complete explanations of the activities to be completed in order to achieve each enabler and final competence	☐	☐	☐	☐
e. instruction sheets or reference to other resources references containing the needed information	☐	☐	☐	☐
f. devices for immediate feedback	☐	☐	☐	☐
g. a performance checklist designed to measure actual student performance of the competency	☐	☐	☐	☐
2. The learning package also contains the following components (depending on your criteria for learning package content and format):				
a. a listing of prerequisites	☐	☐	☐	☐
b. a listing of special terminology, and any resources and materials required	☐	☐	☐	☐
c. a preassessment device	☐	☐	☐	☐
3. The learning package either includes all necessary materials or clearly specifies what outside materials are needed	☐	☐	☐	☐
4. The learning package contains a variety of activities to suit a range of learning abilities and styles	☐	☐	☐	☐
5. Opportunities for recycling activities are included	☐	☐	☐	☐
6. The learning package provides opportunities for students to interact with peers, instructor, and others	☐	☐	☐	☐
7. Supplementary enrichment activities are provided to meet the needs of interested students	☐	☐	☐	☐

8. Although the learning package could be enhanced by group activities, a student could complete it on an independent basis .... □ □ □ □

9. The learning package activities are sequenced in a logical order □ □ □ □

10. The reading level, technical level, and interest level are appropriate to the target student group .... □ □ □ □

11. The learning package is well produced (e.g., good grammar, correct spelling, clear layout, clean copy) .... □ □ □ □

12. The learning package is attractive .... □ □ □ □

Activity 2
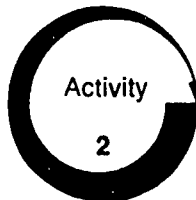
Using existing sources of materials, locate and obtain a CBE learning package (learning guide or module) covering a competency in your occupational area. (If circumstances make it difficult for you to acquire a learning package through outside sources, you may check with your resource person. He/she may have sample learning packages you can use.)

Review the learning package against a valid set of evaluation criteria—either those provided on pp. 14–15, or others suggested by your resource person.

On the basis of your evaluation results, **describe in writing** how you would rate the package. Overall rating? Specific strengths? Specific weaknesses? Would you use it? How? What, if anything, would you do to modify it?

Feedback 3
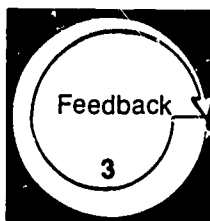
After you have prepared your written evaluation of the learning package you obtained, arrange to have your resource person review and evaluate your work. Give him/her the learning package, the evaluation criteria you used, and the Learning Package Evaluation Checklist, p. 17, to use in evaluating your work.

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LEARNING PACKAGE EVALUATION 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. In preparing his/her evaluation, the instructor considered all the essential criteria that a learning package should meet	☐	☐	☐	☐
2. The instructor's overall rating of the learning package was fair and accurate	☐	☐	☐	☐
3. The instructor identified all the key strengths of the package accurately	☐	☐	☐	☐
4. The instructor identified all the key weaknesses of the package accurately	☐	☐	☐	☐
5 The instructor's decisions concerning whether and how he/she would use the package were appropriate, given its quality and content	☐	☐	☐	☐
6. Proposed modifications to the package would, in fact, increase its appropriateness or usability	☐	☐	☐	☐

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).

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Learning Experience II

Enabling Objective

After completing the required reading, critique the adequacy of a given learning guide.

Activity 1

You will be reading the information sheet, Developing or Adapting CBE Learning Packages, pp. 20–41.

Optional Activity 2

You may wish to read one or more of the following supplementary references: Fardig, *How to Write Student Learning Guides: A Handbook;* Andreyka and Beverly, *Manual for Writing Student Learning Guides: The Ridge Format;* and/or Pucel, "Instructor-Developed CBVE Materials," *School Shop.*

Optional Activity 3

You may wish to review the following style/grammar text: *The Gregg Reference Manual.*

Activity 4

You will be reviewing the student learning guide on cashing checks, pp. 43–46, and critiquing the adequacy of that learning guide's format and content.

Feedback 5
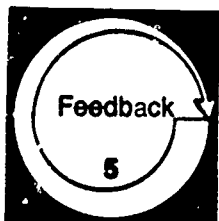
You will be evaluating your competency in critiquing the adequacy of a given learning guide by comparing your completed critique with the Model Critique, pp. 47–48.

If you are unable to locate high-quality CBE materials that fit your occupational area and the needs and abilities of your students, you may need to adapt existing materials or develop your own. For information about how to adapt or develop a CBE learning package, read the following information sheet.

DEVELOPING OR ADAPTING CBE LEARNING PACKAGES

Whether each of your learning packages is going to be in the form of separately filed components, a competency sheet or learning guide, or a self-contained module, certain basic questions must be answered, as follows:

- Where does the development process start?
- Who will be responsible for the development of the CBE learning packages?

- What format will be used?
- What components must the learning packages contain?
- What developmental procedures will be followed?

Let's discuss each of these questions in detail.

Where to Start?

The instructional materials development process starts **after** you have identified, verified, and (in some cases) clustered a set of competencies for your occupational area. Learning packages can then be developed to provide instruction covering all the competencies. Grouping the skills to form learning packages can be handled in various ways, depending on the complexity of the skills involved and the learning package format to be used.

For example, if the skills are substantial and difficult for students to achieve, then an individual learning package for each skill is recommended. If many

of the skills are relatively simple and quickly achievable, related competencies can be clustered, and a single learning package could cover a cluster of skills. If you plan to produce learning packages in the form of loose-leaf notebooks containing individual competency sheets, each notebook might cover a cluster.

These are just a few examples of the types of considerations that affect the number of packages you will need to develop in order to cover the program competencies.
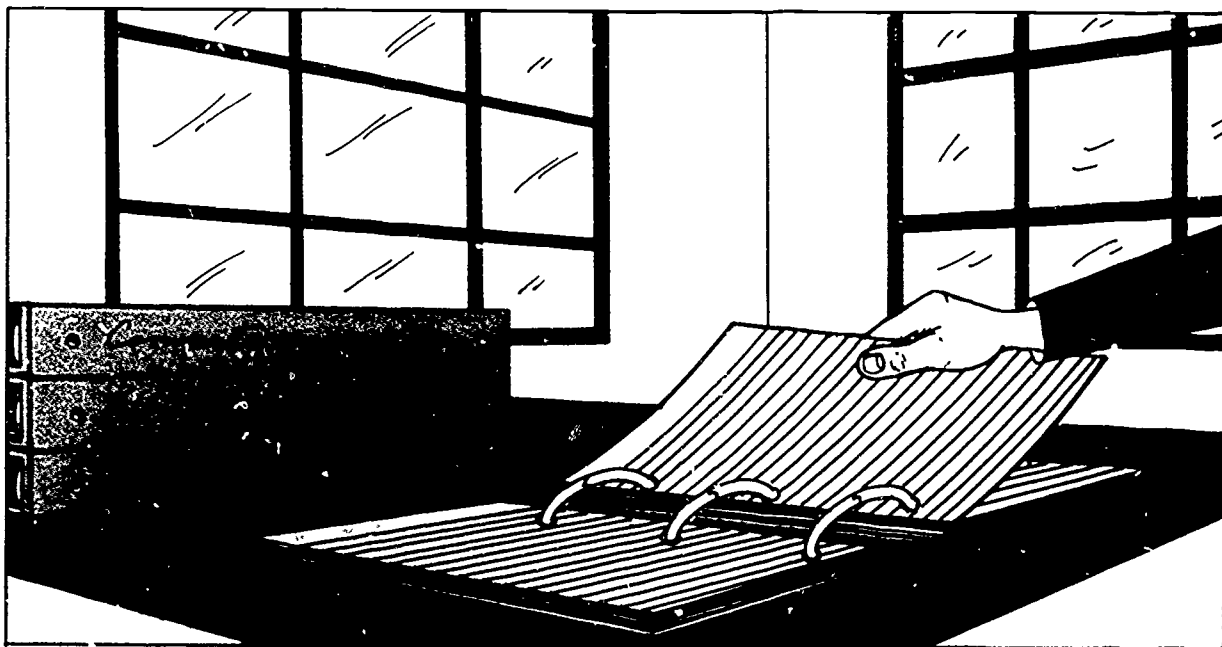
Who?

In many institutions, individual instructors are given total responsibility for the development, continual updating, and revision of the learning packages students will use. Given a list of the competencies to be achieved by students, they decide how each competency will be taught—what prerequisites are required, what instructional strategies will be employed, what criteria will be used to evaluate student performance. These decisions are used to organize the content of the learning packages.

In other institutions or school systems—particularly where more than one instructor will be using the finished materials—the development of learning packages is a team effort. A group of instructors in the same occupational area get together and work out the overall approach, the instructional pattern, and the level of the materials. Then each instructor is assigned a series of packages to complete, perhaps in an area of his/her special interest or expertise.

Even more efficient (if the institution can afford it) is the use of specially formed instructional materials development teams. Such a team may consist of a curriculum specialist, a media specialist, a typist, and one or more instructors in the target occupation. The team organizes for a concentrated materials development effort, which may take about four months for the typical program. When the task is completed and all learning packages have been written, the specialists move on to work on another program with another group of instructors.

No matter how it is done, it is a job that requires a big investment in time and effort. Materials development is best accomplished when blocks of time can be set aside for the purpose. Attempting to work a few minutes here and there as teaching conditions will allow is most inefficient.

Some institutions are able to provide released time for instructors to develop learning packages. Others schedule one day a week for curriculum development. Still others make materials development a summer job for teachers.

If you are to be involved in the development of learning packages—either alone or as part of a development team—it is important that you have adequate training, personal commitment, funds, and time to do the job needed to produce high-quality, usable, effective materials. Ideally, the administration will provide you with an opportunity to attend one or more workshops covering how to develop the specific type of learning packages to be used in your institution.

What Format?

It is by far best (in fact, almost a necessity) that all learning packages to be developed in an institution or district follow the same format. In terms of instructional management and materials production, this need for standardization of format cannot be overemphasized. It simplifies many aspects of materials development and use in a number of ways.

For example, a single workshop on the development of learning packages will meet the needs of all prospective developers. A curriculum developer working with staff will have a single format to deal with. Instructors teaching one program can teach another, knowing the materials' format and directions for use will be the same. Students taking several program offerings will not have to adjust to a new materials' format in each offering.

In short, the format becomes a framework—familiar to all who must use it—and the content receives the focus of attention.

Furthermore, the more that you can incorporate "boilerplate" material into the development process, the easier—in general—the process becomes. By boilerplate material, we mean material that is standard for all packages and that can be duplicated for use over and over.

Pages providing general instructions in how to use the learning package are an example of boilerplate material. The pages provided as samples in the next section of this information sheet are another example. There is a standard format for each component to be included. All the instructor needs to do is select the right quantity of the right pages and type in the requisite information, as specified on the formatted pages.

This particular format is the work of Orange County Public Schools in Orlando, Florida. It is a modification of a format designed by 916 Area Vocational

Technical Institute in White Bear Lake, Minnesota, which is being used in over 130 schools nationwide. Formats of the kind shown here are proven to be successful; students find them easy to use—and they learn.

While there is no need to reinvent a good learning guide format, you may want to produce one that is specifically designed for your institution. You can design a special logo, modernize and make the type more attractive, or emphasize a particular feature. If your print shop has the capability, you could produce your learning guides in two colors or with a unique binding or cover.
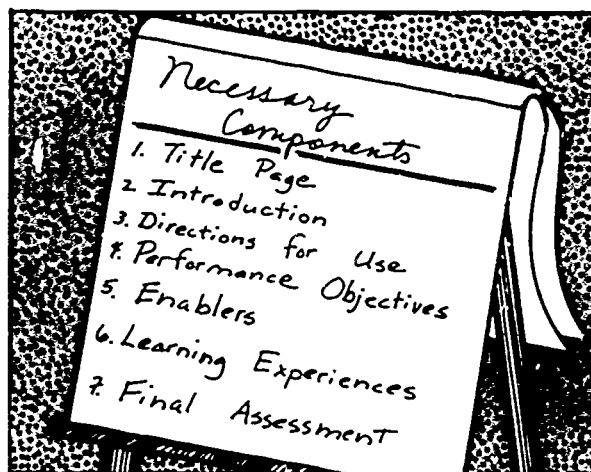
What Components?

Although CBE learning packages come in a variety of shapes, sizes, formats, and levels of detail, there are certain components each should contain. Following are descriptions and samples of each of these components. Although the discussion applies, in most cases, to any type of learning package, we will focus on the development of learning guides, because this is the type of learning package most commonly used in secondary and postsecondary CBE programs.

Title Page

This section should give such identifying information as the program or course name, duty area, competency statement (learning guide title), and competency number(s).

In sample 4, you will note that part of this page includes title page information. The course title is *Child-Care Worker.* The duty/unit is *Performing Food Service Activities.* The competency is *Supervise mealtime activities,* and the competency number is *076.0.* As illustrated in this sample, the competency statement should be prominently displayed—easy to find and read—because that is what students will be interested in.

Notice in sample 4 that space is provided at the side of the page for coded information identifying the course and competency numbers. Some formats also provide space for coded information identifying such items as the vocational-technical department, required prerequisites, and revision dates.

Introduction

Sometimes called the *rationale* or *purpose,* the introduction should briefly explain to students what competency is to be achieved, why it is important, and how it relates to other skills they are acquiring.

An introduction should be kept relatively short (around 50–150 words). It should not attempt to cover everything the student needs to know about the skill. Save detailed instructions and information for the activities. Also, use the second person singular—*you*—to personalize what you are saying and to arouse the student's interest in the subject. The introduction is also an appropriate place to define a few key terms.

The introduction in sample 4 explains why supervising children's mealtime activities is important (sentence one), the purpose of such supervision (sentence two), and other tasks involved in effective supervision (sentence three). The term *you* is used to create the feeling that the discussion is addressed directly to the reader. Another example of an introduction can be found on p. 3 of the module you are now reading.

Directions for Use

Students need to be given clear directions for how to use learning guides. These directions for use are often of two types: those **general** to a given set or series of learning guides and those unique to the **specific** guide in question.

General directions may be handled in one of several ways. They may be included as boilerplate information in each learning package (as they are on the inside back cover of the module you are reading). More frequently, they are covered in a separate user's guide or are presented as part of a workshop or training session in which students learn to use the learning guides effectively.

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SAMPLE 4

LEARNING GUIDE: COVER PAGE

STUDENT LEARNING GUIDE

COURSE TITLE: CHILD-CARE WORKER

DUTY/UNIT: PERFORMING FOOD SERVICE ACTIVITIES

COMPETENCY: SUPERVISE MEALTIME ACTIVITIES

INTRODUCTION:

Mealtime should be a time of enjoyment and learning for the children in your care. You will want to help these children (1) to develop independence in serving themselves, (2) to eat with good table manners, (3) to try new foods, and (4) to develop positive attitudes toward food and eating. You will also need to know how to serve food efficiently and attractively. This learning guide will help you acquire these important skills.

PERFORMANCE OBJECTIVE:

Given access to a group of children, serve three meals or snacks, and supervise the mealtime activities of the group. Your performance will be evaluated by your instructor, using the performance test checklist.

PERFORMANCE ENABLERS:

1. Demonstrate knowledge of the procedures involved in supervising children at mealtime.

2. Demonstrate knowledge of the procedures involved in serving meals to children.

3. In a day-care setting, practice working with other child-care workers and with children at mealtime.

Any specific directions, however, are most often provided in the learning guide to which they apply. For example, any prerequisite skills should be specified. In addition, if students may opt—on the basis of prior competence—to skip the preliminary experiences and "test out" of a particular learning guide, this procedure should be explained (as shown in the first learning activity in sample 1, p. 7).

Performance Objectives

There are differences of opinion among instructional materials developers about the place of performance objectives in student learning guides. Some contend that a task or competency statement (e.g., Weld 3-pass tee joints in flat position) is all that is needed; after all, the final performance test and checklist describe the conditions of performance and provide the criteria for evaluation.

At the other extreme are those that feel that a complete student performance objective (or behavioral objective) is required—one that clearly states (1) the overall performance required (activity to be performed), usually a restatement of the competency; (2) the **specific** conditions under which it will be performed; and (3) the **specific** criteria to be met.

Such student performance objectives can be quite lengthy and involved. However, they may be quite useful in occupational programs that are in the transition stage of moving to CBE—programs that don't yet have complete student learning materials. In those situations, developing a student performance objective for each competency statement can be a definite step toward creating a systematic program emphasizing student performance.

In between these two extremes are those people that agree that the objective statement need not be self-contained—including all the minute conditions and all the criteria—as long as that information is provided somewhere within the learning guide. However, they feel that providing a performance objective in the front of the learning guide—as in sample 4, p. 23—better informs the student about what must be accomplished in order to demonstrate proficiency in that competency.

As illustrated in sample 4, this latter type of performance objective includes a statement of the competency to be achieved and of the **key** conditions under which the competency is to be performed. It then refers the student to the device in the learning guide where the performance criteria can be found (e.g., in the performance checklist).

For example, if the competency were Measure blood pressure, the performance objective might read as follows:

Given a 'patient' and the necessary equipment, measure the patient's blood pressure using standard medical procedures. Your performance will be assessed by your instructor using the final performance checklist contained in your learning guide.

These performance objectives are sometimes called terminal objectives (in this module, for example) because they specify the **final** outcome to be achieved. More sensitive souls prefer not to use the term terminal, however, because of its other meaning; they would prefer not in any way to suggest that completion of a learning guide could be fatal.

If you do decide to use objectives, each learning guide should spell out, in performance terms, the competency to be achieved in that guide. If the basis of the program is, for example, a V-TECS listing of objectives for the occupation, the performance objectives for the learning guides are usually taken directly from the V-TECS catalog, without change.

If some other competency identification procedure is used (e.g., the DACUM process), the performance objectives can generally be derived simply by translating the statements on the task or competency list into objective-type statements. In other words, for each task statement on the list, you would need to add information about the conditions under which the task must be performed and the criteria to be met.

However, this translation process may not always be as straightforward as it seems. Another potential source of confusion for the developers of learning guides concerns the meaning of the terms occupational task statement and performance objective. A task statement describes what an **incumbent worker** in the occupation does on the job. A performance objective describes what a **student** is supposed to be able to do in order to meet the requirements of the vocational-technical training program. One is occupational, the other instructional.

The two should be very close, but they may not always be identical. For example, a nursing skill might be to apply resuscitation techniques to an unconscious infant. However, because that isn't feasible in a training program, the performance objective may call for demonstrating the techniques on a mannequin. Similarly, for a task that is typically done in the field, the performance objective may require that the student demonstrate it in the laboratory.

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Enablers

Enablers (also called *performance enablers, enabling objectives,* or *elaborations*) are designed to enable, or help, students to achieve a particular occupational skill. The enablers grow out of the process of task analysis—a process in which each competency (or task) is analyzed to determine what steps and procedures are involved in performing the competency, what background knowledge needs to be acquired, and what attitudes are involved.

Sample 5 shows a form that can be used for breaking down a competency into these component parts. Enablers can then be developed that (1) cover those elements, (2) give students the chance to **practice** the competency, and (3) lead students in a **logical sequence** to achievement of the final performance objective.

If there is a body of **knowledge** that the student must know in order to perform properly, the enablers might read as follows:

- Define the 20 terms related to respiratory disease.
- Name the major parts of a machine lathe.

There will also be enablers that provide **practice** of the skill; for example:

- Perform resuscitation procedures on a laboratory mannequin.
- Remove and replace various washing machine motors.

Additional examples of knowledge and practice enablers were shown in sample 4, p. 23.

You may also uncover necessary **related skills** (e.g., in math and communications) embedded in the task. Such enablers might be as follows:

- Calculate the mean and standard deviation of marketing data.
- Write simple directions for product assembly.

Remember, the enablers are designed to help students achieve the final performance objective. They are not ends in themselves. If a student can perform a competency successfully without going through the enablers, fine (though this is rarely the case). If you discover through student use that the enablers don't really help students achieve the competency, the enablers must be changed or deleted.

Learning Experiences

For each enabler, there should be a learning experience that is keyed directly to the achievement of that enabler. Some learning experiences should provide students with the necessary background information. Some should provide students with an op-portunity to practice the skill in as **realistic** (close to actual job conditions and requirements) as possible. Some learning experiences may include a combination of information and practice.

Regardless of how the learning experiences are structured, however, achievement of the enablers should lead, in turn, to the attainment of the final performance objective.

Within each learning experience, you will need to provide (1) learning activities, (2) evaluation activities, and (3) feedback devices. Let's look at these three elements a little more closely.

Learning activities. A learning activity is, as its name suggests, an activity designed to promote student learning. Thus, such activities provide the student with needed information and opportunities to apply that information or to practice the competency to be achieved. In designing learning experiences, it is critical that a **variety** of learning activities be provided. You need to guard against the temptation to limit yourself to just a few types of learning activities—ones with which you are familiar, ones that you particularly like.

The following are examples of some learning activities that are particularly suitable for use in individualized learning guides and usable in some form for both secondary and postsecondary students:

- Reading short, relevant textbook sections dealing specifically with the competency
- Reviewing standard reference manuals or shop manuals in the vocational-technical field
- Reading special articles available in the school library
- Solving practice computational problems and exercises
- Viewing or listening to audio or audiovisual materials
- Operating working models or mock-ups
- Role-playing a performance in a simulated situation
- Observing a skilled worker in a real work situation
- Videotaping performance for self-evaluation purposes
- Observing a teacher-led minidemonstration of a special procedure
- Constructing projects or producing services
- Participating in skills practice or drill to perfect a specific technique
- Memorizing specific and much-used information, formulas, or terminology
- Performing specific experiments in the laboratory, and reporting results

SAMPLE 5

TASK ANALYSIS FORM

General Secretary

Competency: Produce Business Letters

In performing this competency, the secretary will need to do the following:

Conduct These Activities	Know the Following	Exhibit These Attitudes
1. Select appropriate materials	Types of stationery Type styles Number and type of copies needed	
2. Use correct letter format	Business letter parts Business letter styles	
3. Check for correct punctuation and spelling	Punctuation and spelling rules	
4. Edit letter as needed	Editing procedures Grammar	Caring attitude
5. Type letter	Accurate and efficient operation of typewriters	Exhibit concern for quality of finished product
6. Make appropriate corrections	Correction materials Correction procedures	Appreciation for accuracy and neatness
7. Proof completed letter	Proofreading skills	Appreciation for accuracy and neatness

- Writing technical reports, reactions to case studies, reports for group discussion
- Preparing schematic drawings, charts, graphs, plans, layouts, styling illustrations, and other visual materials
- Critiquing or evaluating an example of a finished product or the performance of a skill

A variety of up-to-date materials should also be included insofar as possible. Do not include only readings (references to texts and instruction sheets). In developing a learning guide for any given skill, make a real effort to identify other types of media that provide or supplement the content—particularly media that can be used by students working individually.

Identify sources of free and commercial media and send for catalogs. Consider slide/tapes, filmstrip/tapes (or just slides and filmstrips), film loops, and so on. Nor should you fail to consider the kinds of

media that can be locally produced, such as videotapes, picture books, and slide series. Models, real objects, potential resource persons, and on and on—all modes should be considered so that you can meet the various learning abilities and styles of your students.

In sample 6—another page from the child-care learning guide—the learning activities (learning steps) and related resources required to meet the second performance enabler are explained. Notice the variety of activities: reading outside resources, reading an instruction sheet contained within the learning guide, listening to audiotapes of the readings, viewing a videotape, and making an on-site observation.

Back to the subject of clear directions, note that each step in the sample is clearly stated and that additional clarification is provided, if needed, in the column labeled "Special Instructions."

SAMPLE 6

LEARNING GUIDE: LEARNING EXPERIENCE

LEARNING EXPERIENCES

PERFORMANCE ENABLER NO. 2

Demonstrate knowledge of the procedures involved in serving meals to children.

LEARNING ACTIVITIES	SPECIAL INSTRUCTIONS
Read Draper, Caring for Children, pp. 216-217 and 358-362.	You may wish to listen to the audiotapes of these readings. You will find them in the resource center.
Read Barclay and others, Teen Guide to Homemaking, pp. 466-470.	
Read the instruction sheet, "Tips for Meal Service for Children," p. 9.	
View the videotape, CW-6, "How to Get Children to Try New Foods."	If you need help in setting up the videotape playback unit, ask your instructor for assistance.
Visit a child-care center and observe children being served snacks and/or a meal. Record your observations on the form in the instruction sheet, "Observation Form for Mealtimes," p. 11.	Ask your instructor to help you arrange for a visit to an appropriate child-care center. Complete the observation form immediately after leaving the center, not in the presence of the child-care workers.
To check your knowledge of the procedures involved in serving snacks and meals, write a paper listing five or more ways in which you would attempt to make mealtime more attractive or beneficial to the children in the setting you visited.	Arrange with your instructor to discuss your visit and review your paper with you.

COURSE NO. 5385

COMPETENCY NO. 076.0

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Evaluation activities. Evaluation activities should also be built into the learning experiences to allow for continual feedback on student progress. If the student reads an instruction sheet or outside text, he/she should be tested immediately on his/her knowledge of the content covered.

The type of evaluation activity you provide will depend on what you wish to test. For example, if you wish to test the student's **recall** or **recognition** of information, short-answer items (completion, matching, true-false, multiple-choice) can be used. Sample 7 shows a self-check of this type from the child-care learning guide.

If you want to ask questions that will require the student to **think**, essay items may be most appropriate. If you want to evaluate the student's ability to **apply** information, you may want to require him or her to critique a case study, solve the problem presented in a case situation, or participate in a simulation activity.

Feedback devices. Ideally, the evaluation activities should allow the student to check his or her own performance. The knowledge test would be followed by model answers or an answer key (see sample 8). The case study would be followed by a model critique. The simulation activity would be followed by a checklist for the student to use in evaluating his/her performance.

Some instructors prefer to keep assessment totally in their own hands, contending that if students have access to the answers, they will cheat. This is an impractical notion—and generally unfounded as well.

First of all, instructors will quickly discover that time will not permit them to personally evaluate each student at each step. Second, you can't develop responsibility in students unless you delegate it to them.

Third, evaluation is ultimately based on actual performance. If students "cheat" on earlier activities, either (1) they learn through the reinforcement provided by reviewing the answers, or (2) they do not succeed in actually performing the competency and must recycle. Most students quickly learn to use self-evaluation to truly measure their ability, so that they can test out successfully in the future.

Final Assessment

In CBE, assessment of student proficiency requires actual performance of the competency as the major source of evidence. The final assessment experience is often the same as the practice experience(s)—except that the student now considers him/herself ready to be assessed by the instructor.

Remember, students who are confident that they already possess a competency covered by a particular learning guide should be able to demonstrate proficiency by going directly to the final assessment, without completing the prior learning experiences.

The criteria you will use in evaluating students' performance should be clearly spelled out in the learning guide. These criteria are derived from the competency (task) analysis and should reflect actual job requirements. They should be stated in observable, performance terms to impose as much objectivity as possible.

The final assessment experience and the evaluation tool must both be designed to fit the competency. If, for example, the competency is *Calculate values of voltage, current, and resistance,* then the final assessment may be a paper-and-pencil test, with performance evaluated using an answer key.

For the majority of competencies, however (e.g., *Edit typed copy, Develop a menu for a given occasion,* or *Gap a spark plug*), the final assessment should involve using a criterion-referenced checklist to evaluate the student's actual proficiency in performing those skills. For such competencies, the use of a paper-and-pencil objective test as a **final** assessment tool is **not** acceptable. You cannot measure a student's ability to perform by testing only that student's **knowledge** of how to perform.

The test situation you devise should be as close as possible to the actual situation a worker might be faced with on the job. The same tools, materials, and conditions should be provided. This may mean that live work, real patrons, or a field setting will be necessary. If only a simulated situation is possible, you might need to specify the use of a mannequin, a simulator, or a role-playing situation.

There are also practical problems to consider. First, the test situation must not take so much instructor time as to make it unfeasible. Remember, performance tests are administered to each student individually.

For the same reason, the test procedures should not consume a great amount of materials and supplies. It could get prohibitively expensive, for example, if every student in a home furnishing program were to block and cut upholstery fabric for a sofa slip cover, just to be evaluated on one competency.

Finally, for skills such as diagnosing or troubleshooting, the problem involved must not be the same for every student—or the test would lose its value as word got around. However, all problems must be at an equally difficult level.

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SAMPLE 7

LEARNING GUIDE: SELF-CHECK

DIRECTIONS

Check your knowledge of good techniques for supervising children's mealtimes by responding to the following statements. Write "do" in front of each statement that is correct, and write "don't" in front of each statement that describes an incorrect procedure. When you have finished, check your answers with those on the next page.

DO'S AND DON'TS OF SUPERVISING SNACK AND MEALTIME ACTIVITIES

_____ 1. Direct each child to "clean up" his/her plate.

_____ 2. Give the children a chance to calm down before mealtime by reading them a story.

_____ 3. Allow each child to eat whatever he/she likes.

_____ 4. Tell the children they can't have dessert if they use incorrect table manners.

_____ 5. Require each child to take one bite of each new food that is offered.

_____ 6. Give each child an opportunity to serve him/herself.

_____ 7. Cut up each child's meat before you begin.

_____ 8. Practice strict discipline at the table.

_____ 9. Be pleasant, cheerful, and relaxed with the children during mealtime.

_____10. Take the opportunity of mealtime to tell children about the illness of a missing child or about misbehavior problems.

_____11. Assist all children in thoroughly washing and drying their hands to make sure they are clean before eating.

_____12. For comfort, make sure each child is seated in a chair that is the right height.

_____13. Encourage responsibility in the children by letting them clear their trays or dishes from the table.

_____14. Use positive guidance phrases that tell the children "what to do" rather than "what not to do."

_____15. Take as little time for meals as possible in order to get back to more important activities.

PERFORMANCE ENABLER NO. 1

COURSE 5385

COMPETENCY NO. 076.0

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SAMPLE 8

LEARNING GUIDE: ANSWER SHEET

SELF-CHECK ANSWER SHEET

PERFORMANCE ENABLER NO.   1

COURSE NO.   5385

COMPETENCY NO.   076.0

1. don't

2. do

3. do

4. don't

5. do

6. do

7. don't

8. don't

9. do

10. don't

11. don't

12. do

13. do

14. do

15. don't

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Checklist Items. Criterion-referenced checklists can measure **process, product, time, attitudes,** or more often, **a combination** of those elements. Although developing written checklists may sound difficult, vocational-technical instructors generally have such criteria clearly in mind whenever they judge a student's work.

As a result, it's usually merely a matter of getting these criteria down on paper—formalizing them in writing—so they can be shared with students. Students thus know what standards they're working toward and can evaluate their own performance during practice activities.

A checklist should have at least the following important qualities:

- One checklist should be constructed for each major competency in the program.
- The checklist should be short enough to make it practical for the instructor to use. Perhaps 5 to 10 items are sufficient for a simple skill, 10 to 20 items (at the most) for complex competencies.
- The criteria included must be critical to successful performance of the skill. Minor or trivial criteria just make the instructor's evaluation job more difficult and time-consuming.
- Each criterion should have some qualitative base. It is not enough to record that the student did something; he/she may have done it poorly or very well, and this needs to be shown.
- The items must be simple and unambiguous— quickly read and understood by the students and the busy instructor.
- Items should be stated in parallel terms (e.g., all in the past tense).

Sample 9 shows the final assessment activity and performance checklist for a welding learning guide. It includes primarily criteria related to a final **product.** A product is something tangible—such as a machined part, a set of manicured fingernails, or a healthy philodendron plant.

In occupational training, a finished product sometimes provides the most valid evidence of student proficiency. A product is readily measured, and the measurement can be done with the relative objectivity. Criterion statements can be made to clearly describe an acceptable product with a great deal of accuracy (e.g., *Diameter must be plus or minus 1/1000 inch* or *The document must be typed without errors, erasures, or strikeovers*).

Sample 10 shows the final assessment activity and performance checklist for the child-care learning guide. It includes primarily criteria relating to the **process** followed in performing the skill. It is important to evaluate process in situations such as the following:

- No tangible final product is produced (e.g., *Greet visitors to the office*)
- Critical inner parts of a final product are hidden from view (as in a surgical dressing, where inner aseptic measures and medications are of even greater importance than the outer visible areas)
- Sanitation or safety procedures are of extreme importance and must be meticulously observed
- Evaluation involves "live customer" work (as in cosmetology, where an error in the hair dyeing or permanent process could have long-lasting unhappy consequences)

The following is another example of process criterion statements:

- When answering the telephone the student:
  a. identified him/herself clearly
  b. used a pleasant tone of voice
  c. determined accurately what the caller wanted

Often, **attitudes** are crucial to occupational skills. And they're not as impossible to measure as is usually supposed. Measurement just requires a little attention and thought on your part. You need to determine what **behaviors** would indicate the presence of the desired attitudes.

We all say things like, "He's a very courteous person" or "She's a real leader." How do we come to those conclusions? We get clues from a person's actions: he says please and thank you; she volunteers for extra work, and her peers ask for her help.

Some skills involve important **time** factors that must be measured. The batter must be beaten for five minutes. The typist must be able to type 45 words per minute to achieve entry-level competence.
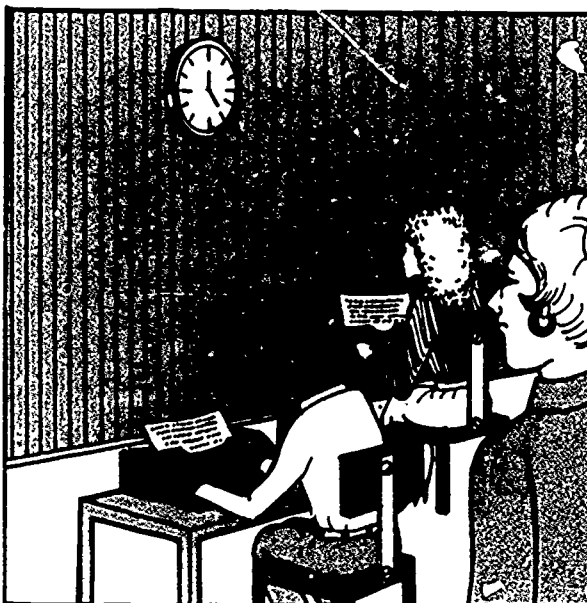
SAMPLE 9

LEARNING GUIDE: PERFORMANCE TEST A

PERFORMANCE TEST

PAGE 1 OF 1

STUDENT'S NAME	DATE

COMPETENCY	TEST ATTEMPT
WELD 3-PASS AND 6-PASS TEE JOINTS IN FLAT POSITION	1ST 2ND 3RD

COURSE NO. 9943

COMPETENCY NO. E-05

DIRECTIONS

At a school work station, weld 3-pass and 6-pass tee joints in the flat position. Based upon items listed below, your instructor's evaluation will determine whether you are competent in this task.

OVERALL EVALUA

LEVEL ACHIEVED	PERFORMANCE LEVELS	
	5	CAN PERFORM THIS SKILL WITHOUT SUPERVISION AND WITH INITIATIVE AND ADAPTABILITY TO PROBLEM SITUATIONS.
	4	CAN PERFORM THIS SKILL SATISFACTORILY WITHOUT ASSISTANCE OR SUPERVISION.
	3	CAN PERFORM THIS SKILL SATISFACTORILY BUT REQUIRES SOME ASSISTANCE AND/OR SUPERVISION.
	2	CAN PERFORM PARTS OF THIS SKILL SATISFACTORILY, BUT REQUIRES CONSIDERABLE ASSISTANCE AND/OR SUPERVISION.
	1	CANNOT PERFORM THIS SKILL.

INSTRUCTOR WILL INITIAL LEVEL ACHIEVED

PERFORMANCE STANDARDS FOR ACCEPTABLE ACHIEVEMENT, ALL ITEMS SHOULD RECEIVE A "YES" OR "N/A" RESPONSE.	YES	NO	NOT APPL.
The Process			
1. The student wore appropriate safety apparel			
2. The student used appropriate safety equipment			
3. The student followed all applicable safety procedures . . .			
The Product			
4. The leg lengths of all 3-pass welds were approximately equal			
5. The welds were free of undercut and porosity.			
6. The finished welds were approximately the same size from end to end on each work piece			
7. Distortion was held to a minimum.			
8. Craters were filled			
9. The throat sizes of all 6-pass welds were approximately equal			
10. The surface ripple of all weld beads was uniform.			

SOURCE: Content adapted from Ridge-Vo-Tech Center, Winter Haven, Florida, 1980.

LEARNING GUIDE: PERFORMANCE TEST B

PERFORMANCE TEST

PAGE 19 OF 26

STUDENT'S NAME	DATE

COMPETENCY	TEST ATTEMPT
SUPERVISE MEALTIME ACTIVITIES	1ST 2ND 3RD

COURSE NO. 5385

COMPETENCY NO. 076.0

DIRECTIONS

Your instructor will assign you a group of children. (1) Serve three meals or snacks to this group. (2) Supervise the group at snack and/or mealtime on three separate occasions. Your instructor will observe and evaluate your performance using the performance test checklist.

OVERALL EVALUATION

LEVEL ACHIEVED	PERFORMANCE LEVELS
	5 CAN PERFORM THIS SKILL WITHOUT SUPERVISION AND WITH INITIATIVE AND ADAPTABILITY TO PROBLEM SITUATIONS.
	4 CAN PERFORM THIS SKILL SATISFACTORILY WITHOUT ASSISTANCE OR SUPERVISION.
	3 CAN PERFORM THIS SKILL SATISFACTORILY BUT REQUIRES SOME ASSISTANCE AND/OR SUPERVISION.
	2 CAN PERFORM PARTS OF THIS SKILL SATISFACTORILY, BUT REQUIRES CONSIDERABLE ASSISTANCE AND/OR SUPERVISION.
	1 CANNOT PERFORM THIS SKILL.

INSTRUCTOR WILL INITIAL LEVEL ACHIEVED

PERFORMANCE STANDARDS FOR ACCEPTABLE ACHIEVEMENT, ALL ITEMS SHOULD RECEIVE A "YES" OR "N/A" RESPONSE.	YES	NO	NOT APPL.
In preparing to serve food, the student:			
1. provided suitable activities prior to mealtime			
2. organized the area for snack time.			
3. allowed children sufficient hand-washing time.			
4. established a comfortable and relaxed atmosphere			
When serving food to the children, the student:			
5. served food at the regularly scheduled time.			
6. served the food efficiently and smoothly			
7. assisted the children in serving food when appropriate			
8. used garnishes to make the food more attractive.			
9. served correctly sized portions.			
10. provided second helpings when they were asked for.			
While supervising snack or mealtime activity, the student:			
11. guided children toward independence in serving and eating. . . .			
12. allowed children sufficient time for mealtime.			
13. set an example by using acceptable table manners			
14. assisted children in wiping up spills.			
15. encouraged children to try new foods			
16. assigned the children duties during snack time			

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Time standards may come from specific industry documents, such as flat-rate manuals. Or they may derive from general trade agreements and union contracts.

It is important, however, that the time a student takes to **perform** a task to demonstrate entry-level competence is not confused with the time the student needs in order to **learn** that task. In CBE programs, the student should be allowed whatever time is needed (within reason) to learn. Once the task has been mastered, the trainee must then be able to perform it within the time specified by the criteria.

Usually, a single type of criterion is not used alone; it is used in **combination** with others. It is necessary to assess not only the quality of the final product, for example, but also the correctness of the process by which it was completed, as well as how long it took the student to complete it.

Thus, if the short order cook is to prepare and serve a customer's order, we can measure the **time** taken and the **process** followed (e.g., the steps were completed in the most time-efficient order); the **product** (e.g., the order was complete; the customer was satisfied with the appearance, texture, taste); and the cook's **attitudes** (e.g., the cook smiled frequently, used a pleasant tone of voice, was patient when the customer couldn't make up his/her mind).

Sometimes there may be only one criterion (or two) for a particular skill. For example, the weld must not break under the stress test. The machined piece must be within given tolerances. The typist must type 45 words per minute error-free. The only caution here is to be very sure that you have selected a valid and defensible criterion for the skill involved—that you haven't used a percentage to avoid developing the lengthier checklist required.

It is worth reemphasizing that the measurable assessment criteria in a CBE program must be those of the occupation—the ones used by people who assess workers on the job (the foreman, supervisor, or other professional in charge). They cannot be arbitrarily selected by the instructor on the basis of personal preference. All trainees who are to be credited with having achieved a competency must be subject to the same criteria of acceptability.

Rating scales. Every checklist implies some sort of rating scale: yes/no, poor/fair/good/excellent, not acceptable/acceptable/outstanding, or some other. In fact, **each criterion** included in the checklist must be rated, and the **overall proficiency** of the student in the demonstrated competency must be given a rating.

Developing a rating scale for your institution will be one of the more important things you will do as you install CBE. The final result will need to be consistent with the instructional model of the institution and yet fit within the student assessment procedures you devise.

For these reasons, deciding on the rating scale to be used must be done early, as you organize the instructional program. It must not be left until you are in the middle of preparing learning guides.[2]

As far as the production of the actual checklist is concerned, the rating scale to be used must be clearly shown. And beside each criterion, a series of boxes or columns should be provided to allow you to record your rating of the item. If there is a scale to rate the student's overall proficiency in the competency, this scale should also appear on the checklist. (See sample 9, p. 32, and sample 10, p. 33).

Level of performance. Some explanation must be provided concerning how well the student must perform—what ratings are acceptable. In samples 9 and 10, for example, it says at the outset that "for acceptable achievement, all items should receive a YES or N/A response." In the Teacher Performance Assessment Form (TPAF) in the module you are reading (see pp. 55–57), the level of performance states, "All items must receive N/A, GOOD, or EX-CELLENT responses."

In addition, you may wish to specify—on the checklist—what the learner is to do if that level is not reached. For example, in the TPAF, it states, "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)."

In other words, the learner is given a chance to keep working on the skill until he/she is successful. This may not be stated on each checklist, however. In some CBE programs, this type of information is provided instead during orientation sessions or in orientation materials.

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2. To gain skill in selecting or devising appropriate rating scales, you may wish to refer to Module K-3, *Organize Your Class and Lab to Install CBE.*

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An Additional Component: The Instruction Sheet

If instruction sheets are to be included in your learning package, these may take several forms, as follows:

- **Job sheet**—This form of instruction sheet is designed to give instructions and specifications for doing a complete piece of work (a job). It may include detailed directions in verbal form and/or consist of a working drawing. (Example: *Produce Copies of a Standard Business Card*)
- **Operation sheet**—This is used for teaching a single basic operation or process. The instructions on an operation sheet are adaptable to any job or problem where the operation appears. (Example: *How to Operate the Microwave Oven*)
- **Information sheet**—This type of sheet supplies the student with information that is not readily available from other sources—at least not at the level or in the exact form desired. It may contain information about new techniques or styles, career information, or the technical data needed to do an assigned job. (Example: *Unleaded Gasoline: Its Advantages and Disadvantages*)

As indicated in the previous descriptions, the impetus for producing teacher-developed instruction sheets comes from the need to provide students with up-to-date occupational information in a form that is exactly geared to their informational needs and reading abilities.

Samples 11 and 12 show instruction sheets that are typical of and appropriate to the learning guides you will develop. In general, instruction sheets should be developed according to the following guidelines:

- Use language that is straightforward and easily understood by the students for whom the

sheet is intended. Define new terms, and do not use words or phrases that are unusual or ambiguous.
- Supplement the words with sketches, illustrations, and diagrams for greater clarity.
- Give specific directions that are clear and concise. Carefully think through the sequence of the directions.
- Limit each instruction sheet to one or two sheets of paper if possible, but avoid crowding the page.
- Separate the various items, points, or paragraphs by spacing, and by numbers, letters, or bullets (you are reading a bulleted list).
- Develop a uniform format for all instruction sheets so students can easily find the desired information. Space the various divisions of the sheet—such as title, purpose, illustrations, and text—to produce an easily read and attractive document. Using a distinctive color of paper for the instruction sheets also helps students to find and use them.
- Use underlining to emphasize or to distinguish between headings, subheadings, and content.
- Be consistent in your use of terminology to avoid confusion.
- Include only relevant information. Avoid filling the sheet with irrelevent or unnecessary information, no matter how fascinating it may seem.

One further guideline: If, in developing instruction sheets, you draw on copyrighted materials (either by paraphrasing or quoting directly), make sure you give full credit (e.g., in a footnote). Legally, you are required to do so; ethically, you should want to do so. Theft of **ideas** is still theft.

What Developmental Guidelines?

Existing CBE learning guides—those developed elsewhere—are usually adapted, not adopted, for use. Instructors often make materials their own by supplementing and reworking the materials they use, especially in light of their own particular students. This is good.

Just because you suddenly acquire a set of excellent CBE learning guides, this doesn't automatically negate the value of the handouts, readings, demonstrations, exercises, and so on, that you've used successfully for years. Your CBE program should incorporate all the strengths of your prior instructional efforts. CBE simply allows you to organize things in a new and more functional mode.

Preparing to Write Materials

One way to make the transition from conventional instruction to adapting, developing, or supplementing learning guides is to create one file folder per competency. Then you can gather all your usual lesson plans, duplication masters, handouts, exercise sheets, testing devices, and so on, and file each in the appropriate competency file. As you then work on each learning guide, you will have a rich resource file to draw from.

If this sounds to you like a huge task, there are other options—although none quite so efficient.

SAMPLE 11

LEARNING GUIDE: INSTRUCTION SHEET A

INSTRUCTION SHEET   PAGE 1 OF 2

<table>
<tr><td rowspan="3">

SETTING UP WORK STATION AND TACK WELDING TEE JOINTS

<u>Getting Set Up:</u>

CAUTION: BE SURE MAIN ELECTRICAL SWITCH IS IN <u>OFF</u> POSITION!

1. Inspect electrode holder, ground clamp, and cables for the following:

   a. Broken or loose insulators

   b. Loose wires

   c. Cracked or cut insulation

2. Clean weld table, and attach ground clamp.

3. Set welding machine for proper polarity and amperage.

<u>Steps:</u>

1. Take one piece of metal, $\frac{1}{4}$" x 3" x 8", and place it flat on the table.

2. Take a second piece, $\frac{1}{4}$" x 1$\frac{1}{2}$" x 8", and place it on its edge--approximately in the center of the 3-inch-wide piece--to form an upside-down "T." See Illustration A below.

</td><td>PERFORMANCE ENABLER NO. 1</td></tr>
<tr><td>COURSE NO. 9943</td></tr>
<tr><td>COMPETENCY NO. E-05</td></tr>
</table>

$\frac{1}{4}$" x 1$\frac{1}{2}$" x 8" on edge $\frac{1}{4}$" x 3" x 8" flat on table
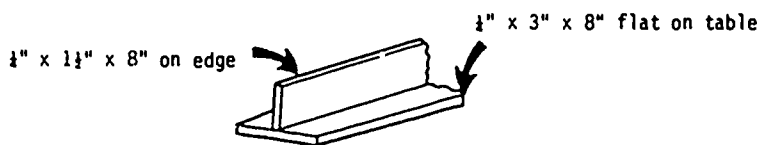
Illustration A

3. Turn on the main electrical switch, and turn on the welding machine.

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4. Securely tack weld both ends of the tee joint. See Illustration B below.

Tack weld both ends.

Illustration B

5. Turn assembly over, and tack weld remaining 1½-inch-wide piece on the opposite side of the assembly. See Illustration C below.
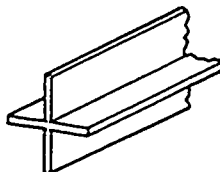
Illustration C

6. Tack weld the second set of tee joints in the same manner.

PERFORMANCE ENABLER NO. 1

COURSE NO. 9943

COMPETENCY NO. E-05

SAMPLE 12

LEARNING GUIDE: INSTRUCTION SHEET B

TIPS FOR MEAL SERVICE FOR CHILDREN

1. Serve food at a scheduled time, because following a fairly regular eating routine is good for a child.

2. Serve foods in a form a child can easily handle, keeping in mind the size of a child's hand and his/her chewing skills.

3. Introduce new foods in small amounts and one at a time. Serve a new food along with something the children like.

4. Serve small portions, and allow an opportunity for the children to have a second helping.

5. Use child-sized portions and utensils and flat-bottomed mugs.

6. Plan for variety in foods. Children like colorful foods. A garnish can add a touch of bright color and pep up a colorless plate.

7. Offer food in a variety of tastes, such as mild, tart, bland, sweet, salty, and sour. Children are often more sensitive to strong flavors than adults, so it is best not to include more than one strongly flavored food in a meal.

8. Offer food in a variety of shapes and sizes. Sandwiches cut in interesting shapes have more child-appeal, and the smaller pieces are easier for a child to handle.

9. Don't fry a child's food or cook it with a lot of seasoning.

10. Offer sweets only at the end of the meal.

11. Arrange the food on the plate for eye appeal and ease in eating.

12. Offer the foods in a variety of forms. Menus may be varied by preparing foods in different ways. Children like to be able to identify the foods they eat.

13. Serve hot foods hot, and cold foods chilled.

14. Serve plates from the left of the child with your left hand. Place beverages from the right with your right hand. This will help avoid accidents, and with practice, this established routine adds to the ease of service.

15. Use care in order to avoid accidents in serving food. If an accident occurs, wipe it up without comment. Don't scold a child for moving and making you spill food.

PERFORMANCE ENABLER NO. 2

COURSE NO. 5305

COMPETENCY NO. 076.0

Perhaps your present filing system, to some extent, will allow you to retrieve the relevant materials you need. Or perhaps your lesson plans are highly detailed and well organized, providing a resource tool as you work on your learning guides.

The main point is, however, that this sort of preparation needs to be given some attention. It would be a shame to ignore some of the excellent materials and techniques you have used in the past simply because you didn't take time to organize them in a way that ensured that all those relevant to a particular learning guide could be identified and retrieved.

If you are actually developing learning guides from scratch, your materials are part of that "scratch." Once you have your format and your performance objectives and enablers defined, your existing materials—probably broken into smaller units—can become elements of the learning package. Your handouts can become instruction sheets in the learning package. Your transparencies can be photocopied and reduced to become learning package illustrations.

Activities in your lesson plans and excellent reading assignments you've always used can become learning package activities—as long as all materials and activities are still relevant and up-to-date and as long as new activities and materials are considered. Develop and add a performance checklist, and you've got yourself a learning package.

If you have good lesson plans that deliver on the competencies in your program, converting the teacher-oriented plans to student learning guides should be relatively easy. The same lesson parts should be in both: introduction (why learn it), essential background information, demonstration of the skill, guided practice, independent practice, and evaluation. It should be simply a matter of reworking each part so students can pursue the lesson independently.

As shown in sample 13, instructor actions in a traditional lesson plan can become learning steps in a student learning guide. Media and resources are still needed—not for the instructor's use, but for student use. The instructor's lectures and demonstrations are readily translated into information sheets and videotapes. The existing lesson plan, designed for group instruction, thus becomes a basis for a complete and logically sequenced learning guide, available to students when they are ready for the lesson.

Writing the Materials

If your learning guides are to be of high quality and usable by students, they must be written well and at the appropriate level. Writing well means that ex-

planations are brief and clear. Sentences are complete (subject, verb, object) and correctly punctuated. Words are spelled right and capitalized according to the rules.

It also means that the content is logically organized, with transitions provided between ideas. Paragraphs start with a clear, appropriate topic sentence. And the words chosen are not only the best words to clearly state the idea, but are words in your students' vocabularies. Finally, once written, a reading-level check indicates that your material is appropriate for your students.

You can improve your writing skills, if necessary, by referring to appropriate English texts or taking a technical writing course as part of your professional development activities. Preservice or inservice English teachers can be another resource. They may be willing to review your materials and let you know where your writing needs to be strengthened—and to help you do so.

Duplicating the Materials

Before your developed materials can be duplicated, a number of questions must have been answered. How will the materials be produced (e.g., typed, typeset)? How will the materials be reproduced (e.g., mimeograph, photocopier, offset)? Will copies be consumable or reissued over and over again? Will the school supply copies to the students, or will students be asked to purchase their own copies? And so on.

The answers to these questions hinge primarily on money. Funds for the duplication effort must have been set aside in the district, institution, program, or departmental budget. How much money is available will very much affect the duplication process used. (Note, however, that limited funds should never be used as an excuse to prepare poorly duplicated materials. Students should not be expected to struggle through a program using illegible copies of learning guides.)

The institutional level, too, will affect your duplication decisions. For example, postsecondary institutions frequently make instructional materials available for student purchase through an institutional bookstore. At the secondary level, required materials are commonly provided to students—on loan—at no charge. Therefore, if you want the materials to be consumable at the secondary level, you must have the budget to support this.

Another consideration is what printing facilities you have available to you. Does the school have a special arrangement with a local print shop? Does the school have a print shop that could produce the

CONVERTING A LESSON PLAN TO A STUDENT LEARNING GUIDE

TEACHER-ORIENTED LESSON PLAN

Task: Prepare coffee with an electric percolator

Instructor actions	Media/Resources
1. Present a lecture on why learn to make coffee. a. What is coffee? b. What is it used for? c. Why is it important?	1. Overhead transparencies
2. Quickly review procedure sheet on how to make the coffee with the students. Sample questions: Why is it important to use cold water?	2. Procedure sheet on how to prepare the coffee
3. Present the demonstration, using the procedure sheet as a guide.	3. Procedure sheet and needed materials (should actually be listed)
4. Assign students to practice exercise, and supervise practice.	4. Assignment sheet Materials for students
5. Ask students to continue practicing until they feel they have mastered the task.	5. Materials for students
6. Evaluate: a. Written test b. Performance test	6. a. Written test and answer sheet b. Performance checklist

STUDENT-ORIENTED LEARNING GUIDE

Task: Prepare coffee with an electric percolator

Learning steps	Media/Resources
1. Read information sheet 12 to determine why prepare coffee.	1. Information sheet 12
2. Review procedure sheet 12 on the basic steps of how to prepare the coffee.	2. Procedure sheet 12
3. View videotape 12 on how to actually prepare the coffee.	3. Videotape 12
4. Ask for the assignment sheet on how to prepare coffee so you can do it.	4. a. Instructor b. Assignment sheet c. Materials
5. Practice making coffee until you feel competent.	5 Materials
6. Ask instructor for evaluation.	6. Instructor

SOURCE David J Pucel. "Instructor-Developed CBVE Materials." *School Shop*, 39 (April 1980): 38–41

materials in the needed quantity and quality? If funds are extremely limited and the school has only a photocopying machine, that may be the most reasonable option.

Whatever decisions are made, the result should be that you have the right **quantity** of materials, available at the **time** when you need them, and of sufficient **quality** to be attractive to and usable by your students.

Evaluating the Materials

CBE learning guides—once acquired, adapted, or developed—are not finished for all time. Technologies change, students change, and you develop new instructional skills and discover new ideas and supporting materials. Furthermore, actual usage of the guides by students will point out elements that need to be modified or changed. Consequently, review and revision (or refinement) of your learning guides should be a continual (or at least periodic) process.

Informal evaluation of the guides is possible on a day-to-day basis. As students use the guides, their successes, difficulties, and questions will indicate whether the materials are clear and usable. If six students have to ask you to clarify the directions for a particular activity, for example, you can probably assume that those directions need to be reviewed and revised.

To secure more formal evaluation data, one option used by developers of learning guides is to include a materials assessment form in each package. Each user thus has the opportunity to let you know about his/her experiences with and perceptions about the materials. For example, the form could include the following types of questions:

- Was the guide easy to use?
- Were all the directions clear?
- Was the reading level about right for you?
- Did the activities help you achieve the competency?
- What did you like least about the guide?
- What did you like most about the guide?
- Did you enjoy using this guide? Why or why not?
- How long did it take you to complete this guide?

Users' responses can pinpoint the need for revision. They can also alert you to the types of assistance you, as a learning manager, need to provide to future users.

For instance, assume that you find that it takes most users about three hours to complete a particular guide. If, then, one of your students, John, has spent three days and is still not competent, you will know that he needs your attention. Perhaps he is just a slower learner; a little encouragement could help. Perhaps he is procrastinating and needs a slight nudge. Or perhaps he needs some individual assistance to get over a hump.

By planning in advance to secure informal and formal feedback—on a regular basis—about the materials you have developed and by revising the materials accordingly, your learning guides can continue to meet your instructional needs in the best possible way.

Optional Activity 2
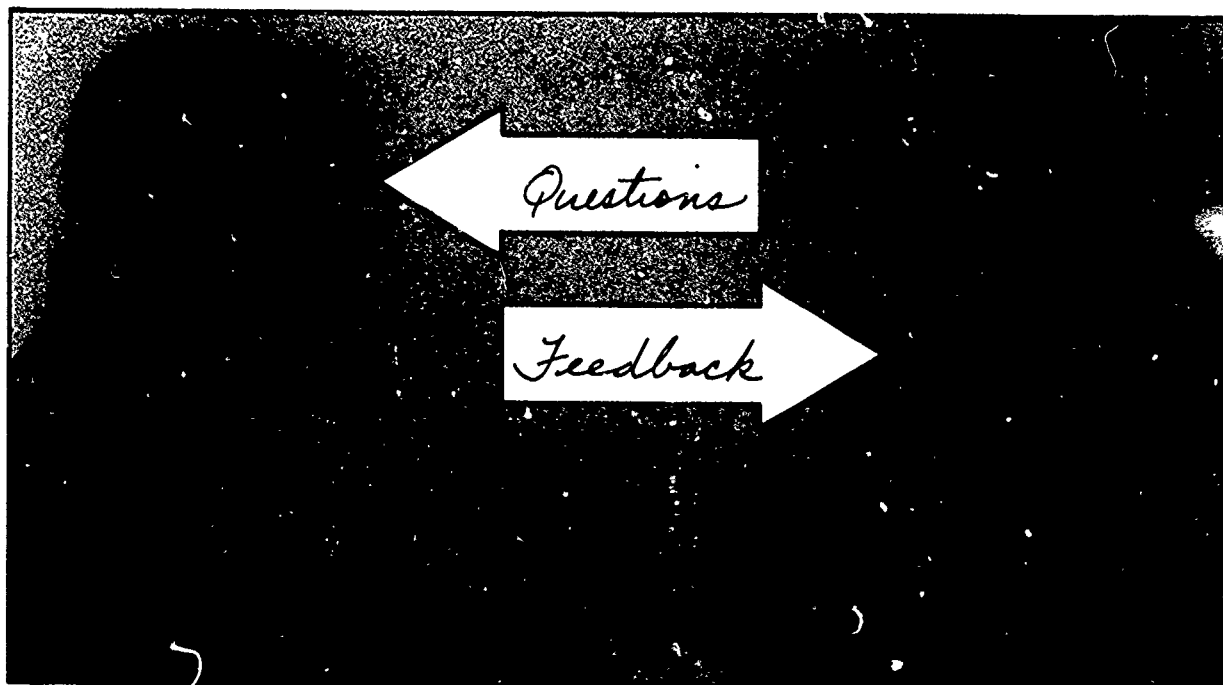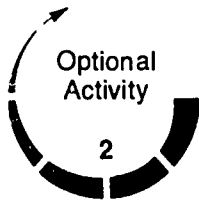
To explore other approaches to the development of learning packages, you may wish to read one or both of the following supplementary references: Fardig, *How to Write Student Learning Guides: A Handbook;* and/or Andreyka and Beverly, *Manual for Writing Student Learning Guides: The Ridge Format.*

You may also wish to read Pucel, "Instructor-Developed CBVE Materials," *School Shop.* This article makes clear the relationship between a conventional lesson plan and a competency-based instructional guide, and shows how to translate one into the other.

Optional Activity 3

For help in improving your writing skills, the following source is highly recommended: Sabin, *The Gregg Reference Manual.*

Pages xi–xxvi provide five brief essays that deal with a number of specific points of style and how to fit one's use of language to the situation. These are not your typical tedious murmurings of the English scholar. The author deals with each topic with practicality and a refreshing sense of humor.

The remainder of the book deals with writing rules (grammar, usage, style), but it is more thorough than most and is so thoroughly indexed and cross-referenced that finding things is very easy.

You should at least read the essays, but if you want just one "grammar book" for your professional library, this would be a good choice.

Activity 4

Review the student learning guide on cashing checks, pp. 43–46, and on the basis of your knowledge of the key components and characteristics of a CBE learning guide, critique the adequacy of that guide's format and content.

STUDENT LEARNING GUIDE BT-17

COMPETENCY: Cashing checks

Introduction

Ofttimes, a patron who appears before the teller's window at a local bank is there for the unpretentious justification that he/she is interested in cashing a check of which he/she has been the recipient, or a personal check of his/her own which he/she has written in order to withdraw monies from his/her own checking account. Before the teller can dispense to such a customer the designated legal tender desired, a number of procedural steps must be effected by the teller in relation to the check itself in order to ascertain if the check is legally acceptable in every way. Subsequent to a determination of the legal acceptability of the check, the teller then needs to process the check in an appropriate and thorough manner. Within the latitude of this competency-based instructional learning package, prospective bank tellers will acquire knowledge of and skill in the full range of complex competencies requisite to the cashing of a check within the confines of a bank.

Objectives

Enablers:

After completing the readings, demonstrate knowledge of the procedures for validating and processing a check or batch of checks.

Performance Objective:

Given a simulated teller window prepared for cashing checks, a teller's stamp, and an adding machine, cash a single check and a batch of checks. Your performance will be assessed by your instructor, using the Performance Test at the end of this learning guide.

Prerequisites

To complete this learning guide, you must have competency in using an adding machine and in making out cash tickets.

LEARNING EXPERIENCE 1

Enabler: After completing the readings, demonstrate knowledge of the procedures for validating and processing a check or batch of checks.

Read the following: Jones and Laughlin, The Bank Teller, pp. 81-101
Carraway, Bank Teller Skills, pp. 12-22
Hughes et al, "So You Want to Be a Bank Teller," pp. 32-49
Moore, Cashing a Check, pp. 3-9
Brunty and Ross, Check Cashing Made Easy, pp. 8-12
Instruction sheet on paying out currency, p. 3 of this guide

Prepare a one- to three-page report listing and explaining the steps involved in cashing a check.

Ask your instructor to review your report and judge whether you know the procedures for validating and processing a check or batch of checks.

INSTRUCTION SHEET: PAYING OUT CURRENCY

Handling currency is one of the most important functions you perform.
Skill in handling currency can be acquired only through practice and
application.   In paying out currency, the following points should always
be remembered:

1. Save time by asking the customer in which denominations he or she
    prefers to have the currency.

2. Get the amount clearly in your mind.   When paying out currency
    from a split check, be sure to verify the currency count with
    your adding machine, and check with the tape once more before
    handing out the currency to the customer.

3. Count out large bills first.

4. Always perform two cash counts:

    a. First as the currency is removed from the drawer

    b. Second as the currency is paid out to the customer

5. Pick up each bill with the forefinger and thumb, rolled to
    separate it from the remaining bills, and place it in the other
    hand with the balance of bills to be paid out.

6. Don't count the currency faster than the customer can count;
    the customer will often recount and hold up the line while
    doing so.

7. If the customer changes his or her mind about the demonimations,
    the request should be complied with cheerfully.

PERFORMANCE TEST

Student Learning Guide BT-17

Competency: Cashing checks

Performance Objective:

Given a simulated teller window prepared for cashing checks, a teller's stamp, and an adding machine, cash a single check and a batch of checks. Your performance will be assessed by your instructor, using the Performance Test at the end of this learning guide.

Performance Standards:

	Yes	No	N/A

In cashing checks, the student:

1. identified which checks were acceptable for cashing . . . . ☐ ☐ ☐

2. cashed a single check . . . . ☐ ☐ ☐

3. cashed a batch of checks. . . . . ☐ ☐ ☐

4. followed all steps in the check-cashing process . . . . ☐ ☐ ☐

Level of Performance: For acceptable achievement, all items should receive a YES or N/A response.
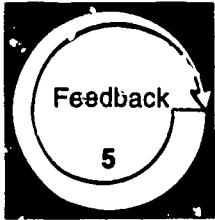
Compare your written critique of the learning guide on cashing checks with the model critique given below. Your response need not exactly duplicate the model response; however, you should have covered the same major points.

MODEL CRITIQUE

Module format. This format, which involves typing of all parts, is more complex and time-consuming than necessary. It would be far easier for the developer to use preprinted format pages, containing all the standard boilerplate material. It would then be a fairly simple task to fill in the content.

Such an approach would also be easier for the users. They would quickly become accustomed to the standard format pages and could focus their attention on what is important: the content.

Title page. The title page does include some identifying information: learning guide number, competency statement, objectives, and prerequisites. However, it does not include the program name or the duty area, nor is any space provided for coded information. Although these latter items are less crucial, they are generally helpful in increasing the usability of materials.

The title has not been written in performance terms. It should say *Cash a Check* not *Cashing Checks*. However, the scope of the competency covered is probably quite reasonable for a CBE learning guide.

The statement of the objectives seems adequate. The performance objective has conditions, action, and reference to the criteria to be met, and the one enabler is sufficiently clear. However, there is no enabler covering practice activities; we go right from the cognitive enabler to the performance objective, with no opportunity for practice provided.

The prerequisites appear to be justified and sufficient. Since the performance objective calls for the use of the adding machine, it seems reasonable to require skill in that operation as a prerequisite.

Directions for use. There are almost none! It may be that students in this hypothetical program learn to use the learning guides in an orientation. It may be that, although there are no boilerplate format pages, a standard format is followed. Nevertheless, some internal directions are required.

For example, there are no special instructions provided with the learning activities. Where can those references be found? In a resource center? In a resource box in the classroom?

In addition, the directions provided concerning the report to be written say little beyond, "Write one." The users are told how many pages it should be and the general topic it should cover, but more specific directions might have been helpful—particularly since no criteria are provided.

Introduction. In this guide, the introduction is found on the title page, which is perfectly acceptable. The most glaring error in the introduction is the level at which it is written. This in turn affects its ability to accomplish any of its purposes very well.

The sentences are too long, and there are too many lengthy terms where a simple term would do quite nicely. This would affect students' ability to comprehend the content of the introduction—which would not provide them with much motiviation to go beyond the introduction.

Furthermore, if users don't understand what they've read, they won't be able to grasp why the skill is important to them. Finally, this introduction makes this relatively simple skill seem so complex that many students might not even attempt to achieve it.

Learning experience 1. It is perfectly reasonable to start a learning guide with a cognitive (knowledge) experience, but there are seeming problems with the actual information presented.

First, there is probably no good reason for asking students to read five different outside references (62 pages) to get the needed information. If each source contains completely different aspects of the content, this should have been explained to the users in the activity directions. If the information in the various references overlaps considerably, the developer of the guide should have compiled the needed information into a simple, brief instruction sheet.

The instruction sheet on paying out currency may be too brief. A student with no previous knowledge of this subject may easily find this explanation inadequate. In addition, *currency* and *denominations* may not be terms with which the student is familiar; defining them could be helpful.

Instead of simply stating the steps, explanations of each step in the process could have been provided. More could also have been said about why these are the correct steps (e.g., why is it important to count out large bills first?). And some of these steps (e.g., Step 5) might have been easier to understand had illustrations been provided.

However, in terms of readability, providing a numbered list of steps in the instruction sheet is helpful.

The self-check may or may not be satisfactory. If the users are getting different pieces of information from all these various sources, writing a report that pulls it all together might be beneficial. However, if the report simply requires students to parrot back the steps listed in the references, that is not an effective measure of their understanding of the concepts.

The feedback device is also very weak. No criteria are provided to assess the adequacy of the report. Such criteria are needed (1) to allow students to know clearly the bases on which they will be rated and (2) to guide the instructor in thoroughly and objectively rating the students' work.

It would probably have been preferable to provide a self-check that could have been easily evaluated by the student using an answer key. Involving the instructor too often cuts down on the time the instructor has available to fulfill his or her other critical functions in facilitating individualized instruction.

A general flaw in this learning experience is its brevity. No media are included, yet a videotaped demonstration of someone processing a check and paying out currency could have been quite helpful. And no variety of learning routes is provided. Students must complete learning activities relying totally on the printed word. No other options are available; no recycling options are available.

Performance test. The overriding problem here is that the student has been routed directly from passive reading to the performance test, with no opportunity for practice. In fact, the instruction sheet states that skill in handling currency can be acquired only through practice—yet no opportunity for practice is provided.

The students should have ample practice before testing out so that they are confident in their ability to perform the skill at the time of final assessment.

In addition, the skill of paying out currency is not tested in the performance test—unless it's included implicitly in Item 4.

On the positive side, the type of evaluation tool provided (a performance checklist) is appropriate for the competency (cash checks). However, although one can't be totally sure from the information provided, it may be that the simulation described is not as realistic as it could be.

For example, a teller must often deal with the pressure of a line of people, all in a hurry, waiting to have a variety of transactions processed. The affective skills of dealing with these people are important. The simulation does not cover this aspect of cashing a check, and the three simplistic tasks may not provide a thorough enough picture of a student's ability to cash checks.

The assessment form does include a specified acceptable level of performance. However, it contains too few items, and they are, for the most part, too broad. The student has been asked to perform three tasks, and this checklist primarily just asks, did he/she perform them? The criteria have no qualitative base. The key indicators of competency—process, product. attitudes, time—should have been included, as appropriate.

Item 4, for example, should have been broken out, and the actual steps (process) should have been listed. The skill of paying out currency should have been included. Items related to product, attitudes, and time factors—missing entirely from the checklist—should have been considered.

Finally, there is no explanation concerning how an overall rating will be determined. Will there be an overall rating given? Through what means? In the samples provided in the information sheet in this learning experience, for example, a 1–5 performance-level scale ("cannot perform" to "can perform without supervision") is used—and explained at the top of the performance test.

Overall, although it is neatly typed (with words spelled and capitalized correctly), this a learning guide that needs a good deal of revision.

Level of Performance: Your written critique of the learning guide should have covered the same major points as the model critique. If you missed some points or have questions about any additional points you made, review the material in the information sheet, Developing or Adapting CBE Learning Packages, pp. 20–41, or check with your resource person if necessary.

# Learning Experience III

Enabling Objective

Given a list of simple competencies, develop a complete learning guide covering a competency that you select from the list.

Activity 1

You will be selecting a learning guide topic from the competencies provided on the Suggested Competencies List, p. 50.

Activity 2

You will be developing a learning guide covering the competency you select.

Feedback 3
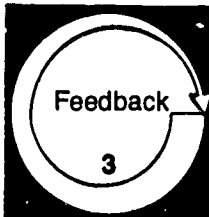
Your competency in developing a learning guide will be evaluated by your resource person, using the Learning Guide Checklist, pp. 51–52.

Activity 1

Following is a list of simple, everyday competencies, each of which could be covered in a brief instructional learning guide. Review the list and select one competency with which you are sufficiently familiar that you could explain to someone else how to perform that skill. (If you would prefer to write on another topic with which you are more familiar, or which is of more interest to you, check with your resource person.)

SUGGESTED COMPETENCIES LIST

- Brush Your Teeth
- Change a Tire
- Set up Your Own Personal Filing System
- Put out a Kitchen Fire
- Pump Your Own Gas at a Self-Service Station
- Plan a Home Garden
- Remove a Stubborn Stain from Clothing
- Prepare Eggs Benedict (or some other dish)

- Repair a Frayed Electrical Cord
- Service Your Spark Plugs
- Refinish a Rocking Chair (or some other piece of furniture)
- Treat a Victim of Choking (or some other emergency condition)
- Housebreak Your Puppy

Activity 2

Develop a learning guide covering the competency you selected. In developing this learning guide, assume that you are writing it for the same target audience that you will be dealing with when you are actually developing your own learning guides. You may use a format similar to the one provided in the samples in Learning Experience II in this module, another format recommended by your resource person, or one of your own choosing. This activity will include doing the following:

- Developing the performance objective
- Thinking through the topic thoroughly
- Analyzing the competency to determine the knowledge, skills, and attitudes required
- Identifying enablers that will provide knowledge and practice
- Developing a series of learning experiences—one per enabler—that include the following, as necessary:

  - Instruction sheets
  - Practice activities
  - Activities designed to provide continual and immediate feedback
  - Model answers, answer keys, or checklists

- Developing a final assessment experience and performance checklist
- Writing an introduction

Feedback 3
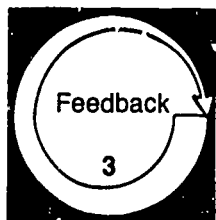
After you have developed your learning guide, arrange to have your resource person review and evaluate it. Give him/her the Learning Guide Checklist, pp. 51–52, to use in evaluating your work.

LEARNING GUIDE 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. There is a title page that provides all necessary identifying information	☐	☐	☐	☐
2. The introduction effectively and briefly does the following:				
a. explains what the skill is and why it is important	☐	☐	☐	☐
b. provides motivation	☐	☐	☐	☐
c. defines key new terms, if necessary	☐	☐	☐	☐
3. The performance objective:				
a. is appropriate for the competency	☐	☐	☐	☐
b. is correctly stated	☐	☐	☐	☐
4. The enablers:				
a. would lead to the accomplishment of the performance objective	☐	☐	☐	☐
b. are correctly stated	☐	☐	☐	☐
5. The learning experiences:				
a. are appropriate for the target audience	☐	☐	☐	☐
b. are varied and interesting	☐	☐	☐	☐
c. are relevant and not repetitive	☐	☐	☐	☐
d. involve a variety of instructional materials	☐	☐	☐	☐
e. include clear directions to the student	☐	☐	☐	☐
6. Practice activities:				
a. are appropriate for the competency covered	☐	☐	☐	☐
b. are practical and realistic	☐	☐	☐	☐
7. Adequate and appropriate activities and devices for immediate and continual feedback are provided	☐	☐	☐	☐
8. The final assessment experience:				
a. requires performance of the skill in a realistic setting	☐	☐	☐	☐
b. involves an activity that is appropriate for the competency covered	☐	☐	☐	☐
c. includes clear directions to the student	☐	☐	☐	☐

	N/A	No	Partial	Full

9. The performance checklist:
   a. includes all essential criteria (product, process, time, attitudes) for assessing achievement of the competency . ... ☐ ☐ ☐ ☐

   b. states the criteria in observable performance terms ... . ☐ ☐ ☐ ☐

   c. lists only essential criteria .... ☐ ☐ ☐ ☐

   d. is reasonable in length .... ☐ ☐ ☐ ☐

   e. includes an appropriate rating scale .... ☐ ☐ ☐ ☐

   f. includes an appropriate level of performance .... ☐ ☐ ☐ ☐

10. If instruction sheets are included, each one:
    a. includes up-to-date and accurate information .... ☐ ☐ ☐ ☐

    b. provides sufficient information to teach the skill .... ☐ ☐ ☐ ☐

    c. includes adequate illustrations to supplement the written text ☐ ☐ ☐ ☐

    d. is written simply and at the appropriate level for the students involved ... . ☐ ☐ ☐ ☐

11. The learning package is well written in terms of the following:
    a. spelling .... ☐ ☐ ☐ ☐

    b. sentence structure .... ☐ ☐ ☐ ☐

    c. clarity of language; word choice ... . ☐ ☐ ☐ ☐

    d. punctuation .... ☐ ☐ ☐ ☐

    e. capitalization .... ☐ ☐ ☐ ☐

    f. vocabulary level .. .. ☐ ☐ ☐ ☐

    g. reading level .. .. ☐ ☐ ☐ ☐

    h. brevity .... ☐ ☐ ☐ ☐

    i. organization .... ☐ ☐ ☐ ☐

12. Clear directions for how to use the learning guide are provided through written explanations or the use of a simple, standardized, self-explanatory format .... ☐ ☐ ☐ ☐

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 IV

Terminal Objective

In an **actual teaching situation,*** provide instructional materials for CBE.

Activity 1

As part of your responsibilities in implementing a CBE program, provide instructional materials for CBE. This will include—

- identifying, obtaining, and evaluating existing CBE materials
- determining whether existing CBE materials will be used "as is," whether they will be adapted for local use, or whether CBE materials will be developed locally
- developing or adapting CBE materials as needed, either working alone, as a member of a development team, or under the direction of a curriculum development specialist

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

Feedback 2
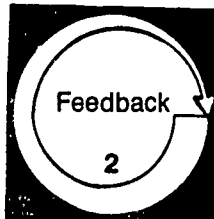
Arrange to have your resource person review your CBE materials and any other documentation you have compiled.

Your total competency will be assessed by your resource person, using the Teacher Performance Assessment Form, pp. 55–57.

Based upon the criteria specified in this assessment instrument, your resource person will determine whether you are competent in providing instructional materials for CBE.

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

NOTES

TEACHER PERFORMANCE ASSESSMENT FORM

Provide Instructional Materials for CBE (K-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
In reviewing existing CBE materials, the teacher:						
1. tapped a variety of sources to identify what was available in his/her occupational area	☐	☐	☐	☐	☐	☐
2. used appropriate and complete criteria for evaluating each of the materials obtained	☐	☐	☐	☐	☐	☐
In determining how CBE materials would be provided, the teacher:						
3. determined whether to acquire, adapt or locally develop materials based on the following:						
a. the CBE model established by the institution/district	☐	☐	☐	☐	☐	☐
b. the quality of available materials and local resources	☐	☐	☐	☐	☐	☐
Before adapting or developing CBE materials, the teacher:						
4. established a format that was:						
a. suitable for the students who would be using the materials	☐	☐	☐	☐	☐	☐
b. consistent with any other CBE materials being used in the institution or district	☐	☐	☐	☐	☐	☐
5. secured additional training in how to develop CBE materials according to local guidelines, if necessary	☐	☐	☐	☐	☐	☐
The system created for organizing and filing resource materials:						
6. is logical and easy to use in terms of retrieving and refiling materials	☐	☐	☐	☐	☐	☐
7. is appropriate for the level of students and type of material	☐	☐	☐	☐	☐	☐
All learning guides meet the following criteria:						
8. there is a title page that provides all necessary identifying information	☐	☐	☐	☐	☐	☐

	N/A	None	Poor	Fair	Good	Excellent
9. the introduction:						
a. effectively and briefly describes the skill covered ..	☐	☐	☐	☐	☐	☐
b. explains why the skill is important	☐	☐	☐	☐	☐	☐
c. provides motivation	☐	☐	☐	☐	☐	☐
d. defines key new terms, if needed	☐	☐	☐	☐	☐	☐
10. the performance objective is appropriate for the competency and is correctly stated	☐	☐	☐	☐	☐	☐
11. the enablers would lead to the accomplishment of the performance objective and are correctly stated	☐	☐	☐	☐	☐	☐
12. the learning activities are varied, interesting, relevant, and appropriate for the target audience	☐	☐	☐	☐	☐	☐
13. a variety of appropriate and accessible resources are included	☐	☐	☐	☐	☐	☐
14. practice activities are practical, realistic, and appropriate for the competency covered	☐	☐	☐	☐	☐	☐
15. adequate and appropriate activities and devices for immediate and continual feedback are provided	☐	☐	☐	☐	☐	☐
16. the final assessment experience:						
a. requires performance of the skill in a realistic setting	☐	☐	☐	☐	☐	☐
b. involves an activity that is appropriate for the competency covered	☐	☐	☐	☐	☐	☐
17. the performance checklist:						
a. includes all essential—and only essential—criteria	☐	☐	☐	☐	☐	☐
b. states the criteria in observable performance terms	☐	☐	☐	☐	☐	☐
c. is reasonable in length	☐	☐	☐	☐	☐	☐
d. includes an appropriate rating scale	☐	☐	☐	☐	☐	☐
e. includes an appropriate level of performance	☐	☐	☐	☐	☐	☐
18. if instruction sheets are included, each one:						
a. includes up-to-date, accurate, and sufficient information	☐	☐	☐	☐	☐	☐
b. includes adequate illustrations to supplement the written text	☐	☐	☐	☐	☐	☐
c. respects copyright laws and professional ethics ...	☐	☐	☐	☐	☐	☐

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	N/A	None	Poor	Fair	Good	Excellent
19. the learning guide is well written and well produced ..	☐	☐	☐	☐	☐	☐
20. clear directions for how to use the learning package are provided through written explanations or use of a self-explanatory format	☐	☐	☐	☐	☐	☐

In ensuring that CBE materials were and remained effective, the teacher:

	N/A	None	Poor	Fair	Good	Excellent
21. provided for the continual or periodic evaluation of the materials, including:						
a. evaluation of their effectiveness in classroom/laboratory use	☐	☐	☐	☐	☐	☐
b. evaluation of whether the materials remained up-to-date	☐	☐	☐	☐	☐	☐

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