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ABSTRACT

This learning module, one in a series of 127 performance-based teacher education learning packages focusing upon specific professional competencies of vocational teachers, deals with modifying the learning environment for exceptional students. Addressed in the individual learning experiences are the following topics: understanding why modification of the learning environment is necessary for special needs students, learning what to modify in the learning environment, ensuring that modifications are carried out, assessing the performance of teachers with regard to their modification of learning environments for special needs students in given case studies, and outlining the modifications that could be made to a selected learning environment to meet the needs of a given special needs student. Each learning experience contains some or all of the following: an objective, instructional text, one or more learning activities, and a feedback activity. (MN)

Modify the Learning Environment for Exceptional Students

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120 Driftmier Engineering Center Athens GA 30602

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FOREWORD

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

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

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

The PBTE curriculum packages in Category L—Serving Students with Special/Exceptional Needs—are designed to enable vocational teachers and other occupational trainers to create learning environments that are accessible, accommodating, and equitable in meeting the instructional needs of individuals in those groups previously denied equal vocational education opportunities. The modules are based upon 380 teacher competencies identified and verified as essential for vocational teachers to meet the special needs of all students in their classes. Included are special populations such as the handicapped; adults pursuing retraining; and students enrolled in programs that are nontraditional for their sex.

Many individuals and institutions have contributed to the research, development, testing, and revision of these significant training materials. Appreciation is extended to the following individuals who, as members of the project technical panel, advised project staff, identified human and material resources, and reviewed draft materials: James B. Boyer, Ken D. Jockhoff, Mary M. Frasier, Gerald R. Fuller, Juan Guzman, Jerry Holloway, Barbara Kemp, Jeffrey G. Kelly, Betty Ross Thomson, Ann Turnham-Smith, and Richard Tyler.

Appreciation is also extended to the approximately 80 vocational teachers and supervisors from throughout the United States who served on the eight DACUM analysis panels that assisted National Center staff in the initial identification of the teacher competency statements. Appreciation is extended, too, to the 80 additional teachers and supervisors from throughout the United States who assisted in the verification of the 380 competencies.

Field testing of the materials was carried out with assistance of field-site coordinators, teacher educators, students, directors of staff development, and others at the following institutions: University of Alabama–Birmingham; Albuquerque Technical-Vocational Institute, New Mexico; University of Central Florida; University of Southern Maine; Maricopa County Community College District, Arizona; Murray State University, Kentucky; University of New Hampshire; SUNY College of Technology–Utica, New York; Temple University, Pennsylvania; Texas State Technical College; Upper Valley Joint Vocational School, Ohio; and Central Washington University.

Special recognition for major individual roles in the development of these materials is extended to the following National Center staff: Lucille Campbell-Thrane, Associate Director, Development Division; and James B. Hamilton, Program Director, for leadership and direction of the project; Lois G. Harrington, Karen M. Quinn, and Michael E. Wonacott, Program Associates, for training of module writers and module quality control; Cheryl M. Lowry, Research Specialist, for developing illustration specifications; Kevin Burke and Barbara Shea for art work; Nancy Lust, Research Specialist and Wheeler Richards, Graduate Research Associate, for assisting in the coordination of module field testing and data summarization; and Catherine C. King-Fitch, Program Associate, for revision of the materials following field testing. Special recognition is also extended to the staff of AAVIM for their invaluable contributions to the quality of the final printed products, particularly to Donna Pritchett for module layout, design, and final art work, and to George W. Smith Jr. for supervision of the module production process.

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

THE NATIONAL CENTER FOR RESEARCH IN VOCATIONAL EDUCATION

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

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

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

MODULE

L-5

Modify the Learning Environment for Exceptional Students

Module L-5 of Category L—
Serving Students with Special/Exceptional Needs
PROFESSIONAL TEACHER EDUCATION MODULE SERIES

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INTRODUCTION

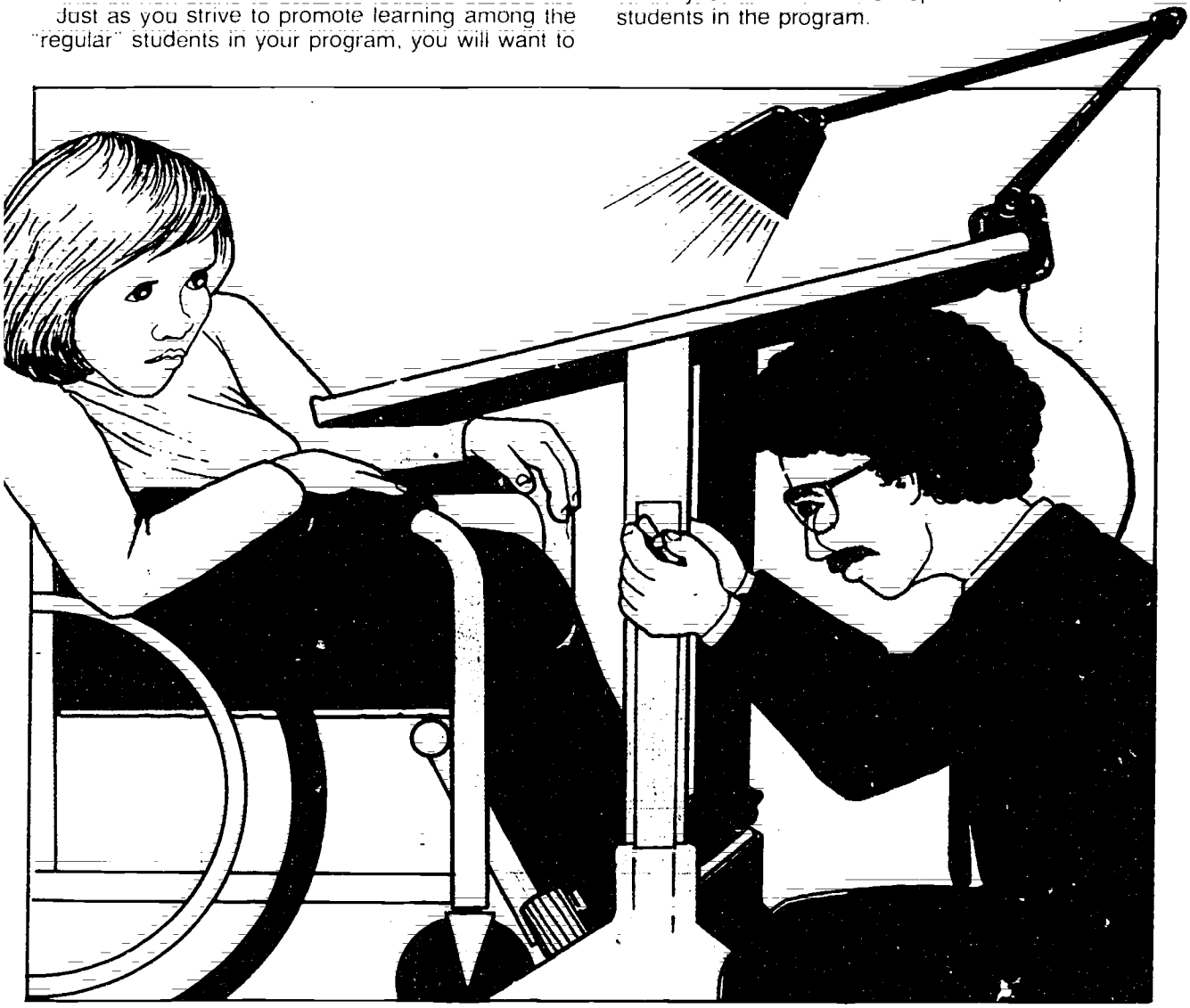
As a vocational-technical teacher, you are or will be instructing students in a learning environment that is occupationally oriented. It may include a shop or laboratory with equipment, tools, machinery, and complex apparatus. While many students will be able to adapt easily to the learning environment of the vocational-technical program, others may have difficulty. This may be true especially in the lab or shop.

Some students may have physical, sensory, or mental handicaps that prevent them from using the equipment unless it is modified for their use. Others may have special needs because they are unaccustomed to the learning environment of the traditional vocational-technical lab.

Just as you strive to promote learning among the "regular" students in your program, you will want to modify the instructional and physical setting to accommodate students' exceptional needs.

Adapting the learning environment to students' exceptional needs is not a difficult task. Many modifications can be made simply and inexpensively. Making modifications requires a little imagination and a commitment to making the learning environment a safe, comfortable, and accessible place for all students.

This module is designed to give you skill in determining what kinds of modifications are necessary to accommodate students' exceptional needs. It will also help you develop skill in making or arranging for modifications that are simple, practical, and appropriate not only for students with exceptional needs, but for all students in the program.



ABOUT THIS MODULE

Objectives

Terminal Objective: In an actual teaching situation, modify the learning environment for exceptional students. Your performance will be assessed by your resource person, using the Teacher Performance Assessment Form, pp. 31–33 *(Learning Experience III)*.

Enabling Objectives:

1. After completing the required reading, critique the performance of the teachers in given case studies in modifying the learning environment for students with exceptional needs *(Learning Experience I)*.
2. Given a profile of a student with exceptional needs, outline the modifications that could be made to a selected learning environment to meet the needs of that student *(Learning Experience II)*.

Prerequisites

The modules in Category L are **not** designed for the prospective teacher with no prior training and/or experience. They assume that you have achieved a minimal level of skill in the core teacher competencies of instructional planning, execution, and evaluation. They then build on or expand that skill level, specifically in terms of serving students with special exceptional needs.

In addition, to complete this module, you should have defined or redefined your educational philosophy to include your responsibility for serving students with exceptional needs; and you should have competency in identifying and diagnosing the needs of these students. If you do not already meet these requirements, 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 modules:

- *Prepare Yourself to Serve Exceptional Students*, Module L-1
- *Identify and Diagnose Exceptional Students*, Module L-2

Resources

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

Learning Experience I

No outside resources

Learning Experience II

Required

A selected vocational-technical classroom or laboratory for which you can outline modifications in the learning environment to meet a student's exceptional needs.

A resource person to evaluate your competency in outlining modifications in the learning environment to meet a student's exceptional needs.

Learning Experience III

Required

An actual teaching situation in which you can modify the learning environment for exceptional students.

A resource person to assess your competency in modifying the learning environment for exceptional students.

Terminology

Special/Exceptional Needs: Referred to in the modules simply as exceptional needs, this term refers to those needs that may prevent a student from succeeding in regular vocational education classes without special consideration and help. The following types of students are included in our definition of students with exceptional needs:

- Persons enrolled in programs nontraditional for their sex (e.g., the male in home economics)
- Adults requiring retraining (e.g., displaced homemakers; technologically displaced)
- Persons with limited English proficiency
- Members of racial/ethnic minority groups
- Urban/rural economically disadvantaged
- Gifted and talented
- Mentally retarded
- Sensory & physically impaired

General Information

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

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

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

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

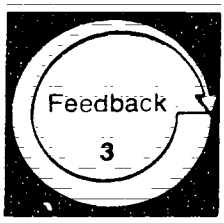
Learning Experience I

OVERVIEW

After completing the required reading, critique the performance of the teachers in given case studies in modifying the learning environment for students with exceptional needs.

You will be reading the information sheet, Modifying the Learning Environment, pp. 6–13.

You will be reading the Case Studies, pp. 14–16, and critiquing the performance of the teachers described.



You will be evaluating your competency in critiquing the teachers' performance in modifying the learning environment for students with exceptional needs by comparing your completed critiques with the Model Critiques, pp. 17–19.

Some students with exceptional needs may not be able to perform successfully in the traditional learning environment of the vocational-technical classroom or laboratory. To learn about the reasons for modifying the learning environment to accommodate these students and techniques to use, read the following information sheet.

MODIFYING THE LEARNING ENVIRONMENT

The term *learning environment* refers to both the physical setting and the instructional setting of the vocational-technical laboratory or classroom. The typical lab contains expensive and sometimes complex apparatus, equipment, tools, and machinery. There are also fittings, storage areas, and furniture.

Other elements that contribute to the learning environment include lighting, ventilation, color, texture, and noise level. These elements of the classroom or lab should create an efficient, orderly, and comfortable learning environment.

The learning environment of every vocational-technical lab and classroom affects students' comfort, their emotional and psychological well-being, their physical safety, and their success. Modifications become necessary when some students have needs that are not accommodated in the traditional setting.

For example, imagine the following conversation between a special education teacher and a vocational instructor:

Chris:
How's special ed these days, Pat?

Pat:
Fine, Chris. By the way, Tom Clarke is going to be in your program next quarter. You know him—the student that had that skiing accident two years ago.

Chris:
What??!! That's out of the question. He can't do my lab.

Pat:
The lab is required as part of the course, isn't it?

Chris:
Of course.

Pat:
Then you have to take him. That's the law.

Chris:
Even if he's partially paralyzed? How on earth is his wheelchair going to fit in the lab? Furthermore, he won't have the strength to use a smooth plane or a claw hammer, will he?

Pat:
You'll find a way. You and the student, together.

Chris:
But, good heavens, Pat, I'm responsible for his safety—not to mention that of everybody else in the room. What will happen if he bores a hole through his hand, or through somebody else's?

Pat:
Don't worry. I'm sure he's used some of your equipment before. Why don't you sit down and have a talk with him about it?

Chris:
You mean to tell me that every course has to be open to all students—even if they have severe handicaps?

Pat:
That's right. Every course, and every program, as long as the student is otherwise qualified.

Chris:
But what if the student simply can't do something that is an essential part of the training?

Pat:
What do you do, Chris, if you have to move a table that's too heavy for you?

Chris:
I get someone to help.

Pat:
See what I mean?

This conversation illustrates the attitude that instructors and society at large have sometimes displayed toward students with exceptional needs. Teachers have had similar misgivings about female students wanting to be in construction trades programs. Or about mentally retarded students being in marketing and distributive education. Or about visually impaired students being in home economics. The initial response may be that they can't do it.

Of course, there may be certain tools and equipment that could not be used by students with some types of physical or sensory impairments under any circumstances. However, it is also true that many students with exceptional needs can do much more than society may expect of them.

Most students with exceptional needs can be successful in regular vocational-technical programs. Teachers and others need to be willing to adapt the learning environment to the students' needs, rather than trying to fit the students into the existing environment.

Of course, instructors are genuinely—and rightly—concerned about the exceptional students' safety and that of the other students in the program. However, many simple adaptations can be made to the existing environment that would both accommodate students' exceptional needs and maintain or improve safety standards.

After all, a good teacher does not hesitate to modify course content, instructional materials, and methods for "regular" students if they need it. With students with exceptional needs, you simply have to recognize that their needs may be a little different from the needs of other students. If you are sensitive to your students' exceptional needs, a reasonable effort on your part can help them succeed in your program.

Why Modify the Learning Environment

The learning environment must be modified as necessary to accommodate students' exceptional needs for at least seven important reasons.

First, your school or institution is **required by law** to make reasonable efforts to ensure equal access and educational opportunity to all students. This opportunity must be made available regardless of physical or sensory handicap, race, age, national origin, or sex.

There are four pieces of legislation that have implications for modifying the learning environment for students with exceptional needs:

Title IV of the Civil Rights Act of 1964—This act prohibits discrimination on the basis of racial/ethnic origin or limited English proficiency.

Title IX of the Education Amendments of 1972—This legislation prohibits discrimination on the basis of sex.

The Education of All Handicapped Children Act (P.L. 94–142)—This act states that all handicapped students should be placed in the least restrictive environment possible in educational settings.

Section 504 of the Rehabilitation Act of 1973—This section prohibits discrimination on the basis of physical/sensory handicap or mental retardation.

Second, **student safety** must be guaranteed in the shop or lab. Modification of tools, apparatus, machinery, or the physical facility is sometimes necessary to ensure the safety of students with exceptional needs.

Third, the **success of students** with exceptional needs is more likely when some modifications are made in the learning environment to accommodate their needs. Modifications in the learning environment can help students succeed in learning the program content and skills.

Fourth, many students with exceptional needs learn best when **instruction is individualized.** They tend to perform best when allowed to work at their own pace. They benefit most from following a program specifically designed to suit their unique needs and to help them develop the specific skills they need. In order to provide the flexibility needed for individualized instruction, some modifications in the learning environment may be required.

Fifth, the learning environment must provide for the **emotional and mental well-being** of students. They should feel comfortable working in the classroom or lab. It is especially important to create and maintain a secure, pleasant atmosphere for students with exceptional needs. Some students with exceptional needs may feel intimidated and uncomfortable in an atmosphere that is rigid or formal.

Sixth, another area that you need to be concerned about is ensuring the students' **physical comfort.** Poor lighting and high noise levels may make learning harder for all students. For visually impaired and hearing-impaired students, however, such conditions may make learning impossible. Attractive, clean, well-lit surroundings can also motivate students to perform and do well.

And seventh, you must consider **access to tools, equipment, and facilities.** Some students with exceptional needs will not be able to locate and use tools and equipment unless special modifications are made. There are two types of modifications that may be necessary. Changes in the actual physical facility may be needed to increase access. And changes in the furniture, tools, and machinery may be needed to enable handicapped students to use them.

What to Modify in the Learning Environment

The exceptional needs of your students will dictate what modifications will be required. In modifying apparatus, equipment, and the physical facility, you must first be familiar with the individual needs and abilities of each student. This knowledge comes from your initial identification and diagnosis of students with exceptional needs.

Your next task will be to analyze the existing classroom, lab, or shop to determine whether it can adequately meet students' exceptional needs and, if not, what adaptations are most appropriate and feasible.

To Ensure Flexibility

Seating arrangements, furniture, and equipment should be movable rather than fixed, if possible. Some students may need to have their tools or materials placed close to where they sit. Students with limited mobility will need ample space in which to maneuver. Hearing-impaired and visually impaired students may need special seating arrangements. You might have these students choose their own seats to ensure that they can hear or see what goes on during the lesson.

If instruction is to be individualized, students will be engaged in a variety of tasks in the same room at the same time. They need to be able to work individually without disturbing each other's activities. In reviewing the classroom or lab, you will have to determine whether the layout of furniture and equipment needs to be modified so that students can complete tasks on an individualized basis.

Students with exceptional needs may need the option of proceeding at a faster or slower pace than other students. For example, gifted and talented students may finish quickly. They may need their own space in which to work on special projects or tasks that are not part of your regular curriculum.

To Ensure Teacher Mobility and Control

You need to be able to interact with all students at all times to give them the individual assistance they need. You should be able to guide their activities from any point in the room. Therefore in the classroom or lab, you should note anything that obstructs your view of the entire room.

You should also consider the location of any equipment that causes a lot of noise. Perhaps it can be placed where it won't keep you and the students from hearing what is going on. At the same time, you will want to make sure that all equipment is located where you can hear it in operation.

Finally, you need to check the location and layout of all machinery, equipment, and furniture to make sure that you have easy access to all parts of the room.

To Ensure Appropriate Learning Activities

Students in your lab or shop need to be able to learn the skills necessary for the occupation. Some students with exceptional needs learn most effectively when they are exposed to real-life, concrete learning experiences that have relevance to their overall occupational goals.

Therefore, the classroom or lab should duplicate actual occupational conditions as closely as possible. In addition, through hands-on activities in a simulated setting, each student with exceptional needs should have the opportunity to operate actual machinery, tools, and equipment.

In your analysis of the learning environment, you should first ensure that the equipment, tools, machinery, and materials are appropriate to the skills being taught. Then, you should decide whether the layout and location of the equipment and furniture, as well as the overall organization of the room, are accurate simulations of the real-life situation.

To Ensure Efficiency

Instruction needs to be efficient as well as flexible. Teachers and students should be able to work with maximum productivity and a minimum of wasted time, effort, and energy. To create and maintain an efficient classroom or lab, you need to determine whether the spatial arrangement is appropriate. You should be especially sensitive to the needs of students with limited mobility.

For example, some students in wheelchairs or those who lack muscular control may have special storage needs because of the extra apparatus they use. For example, a spastic student might use a wrist hold-down device, pencil holder, or page turner. Additional shelves or drawers may be needed to store the equipment so that the student's work area is not cluttered.

Similarly, in a lab you must determine whether the student can function in the limited space that most labs have available. Ideally, a student would have ample space in which to maneuver his/her wheelchair. If your lab is not constructed in this manner, you might need to find out whether the student can function using crutches.

You may be able to get a stand-in table into which the student can be strapped. Or you may be able to get adjustable seats or worktables so that the student does not need to sit in his her wheelchair. By thus reducing the amount of floor space used by the student, you can arrange the lab more efficiently for all students.

To Ensure Emotional and Psychological Comfort

Some special modifications may be needed to create an atmosphere in your class or lab in which students with exceptional needs can be comfortable. For example, some mentally retarded students are accustomed to sheltered learning experiences. They may find it difficult to adjust to being in a regular classroom. Similarly, adult learners, unused to going to school, may not perform well in a rigidly structured, formalized lab setting.

You therefore need to look at the environment to see whether the arrangement of furniture, shelves, and equipment allows for maximum flexibility. Neat rows of tables, chairs, and desks may give an appearance of order. But too much emphasis on uniformity can contribute to a rigid or formal atmosphere. Further, it can reduce teacher-student and student-student interaction. How space, equipment, and furniture are arranged and used can significantly affect the psychological comfort of your students.

Finally, you need to make sure that there are no signs, posters, or other materials that may be offensive to certain groups of students. Students with exceptional needs can be insulted by displays that are biased against certain groups, that depict them stereotypically, or that ignore them altogether. You should therefore be sure that no such materials are displayed in your room.

To Ensure Physical Comfort

In some vocational-technical labs, chemicals are used and equipment emits smoke and fumes. Naturally, you will need to be sure there is proper ventilation. In many programs, students do detailed work. While proper lighting is always important, it can be essential for students who are visually impaired. You will also need to make sure that the noise level is acceptable and that the lab itself is clean.

For some students with exceptional needs, additional precautions may be necessary to ensure their physical comfort. For example, some hearing-impaired students cannot work in labs where there is excessive noise. This is apt to be true especially for students who wear hearing aids. You may need to advise these students to turn down their hearing aids in noisy shop areas.

Naturally, there will be unavoidable noise in some shops and labs. However, in some cases, machines are excessively noisy because they are not functioning properly. In addition, some machines create noise from vibration when not properly secured. These conditions can and should be identified and corrected.

Proper lighting is essential for visually impaired students. You need to make sure that the lighting is adequate for them. Perhaps an added high-intensity lamp would meet the need. In addition, some students with limited mobility may require lighting that is adjustable or movable in order to do close, detailed work.

To Provide Access to Facilities, Tools, and Equipment

Facilities. Some classrooms and labs are constructed in such a way that there are architectural barriers. For example, there may be stairs, columns, or posts in the room that reduce the mobility of a student who uses a wheelchair or crutches.

If your institution is willing to undertake major structural changes, it is unlikely that you will be making these modifications yourself. But there are certain suggestions that you can offer. These may include the use of nonskid flooring and the construction of handrails, ramps, and wide aisles.

You need to bear in mind, however, that removing architectural barriers is a major task. It can be very costly to try to create a barrier-free environment. Obviously, your institution will be constrained by cost factors.

Often, however, using some ingenuity, you can find ways to effect changes without causing "undue hardship" to the institution. Rearranging equipment, machinery, and furniture in the facility to provide maximum access may achieve some of the same purposes as major reconstruction.

Tools and equipment. In reviewing the lab, you also need to determine whether storage shelves, work stations, furniture, and materials are accessible to students with physical handicaps.

For example, a student in a wheelchair may not be able to reach high enough to get to materials on storage shelves. Perhaps rearranging storage can solve this problem. Similarly, labeling storage areas in braille or raised print might enable a visually impaired student to locate and identify materials.

In some cases, it might be necessary to modify furniture. Physically handicapped students, for example, need furniture that is sturdy and durable, with a wide base. Desks, chairs, and tables must be at the proper height. Sometimes existing furniture can be adapted by making simple modifications.

For example, consider whether you can modify wooden tables by shortening legs or putting on new longer legs. For wheelchair-bound students you may need to cut out tables so that they can pull up close to the work surface. Wooden furniture can be adapted more easily than metal or plastic furniture.

In some cases, new furniture will be needed. If, as you study your facilities, you find that you can't adapt the existing furniture, you should arrange to obtain adjustable desks, tables, or chairs for your physically handicapped students. This furniture can then be used in future classes by students who have slightly different needs.

After reviewing the tools and equipment in the lab, you can submit a plan to the authorities specifying needed modifications. That plan should specify whether adaptations can be made to existing equipment and tools, or whether new equipment will need to be installed to accommodate exceptional needs.

Again, your institution is not expected to purchase an entire new stock of equipment to accommodate exceptional needs. You will, however, be required to make a reasonable effort to modify existing equipment, tools, and machinery for handicapped students.

With simple modifications, much equipment can be made usable. For example, portable electric tools can be used effectively by many physically handicapped persons. However, some power tools can cause problems for persons with missing limbs or muscular control problems. Sometimes these problems can be overcome by using clamps to secure the equipment and by enlarging the size of the worktable. In some cases a lap tray can be used as a substitute for a worktable.

Whether to replace a piece of equipment or adapt it is sometimes a practical matter. For example, students who do not have the use of their lower extremities cannot operate machines with foot controls. In the case of a foot-operated dictaphone, it might be possible to replace it with one that has a hand switch or digital push button. In the case of a very large piece of power equipment with foot controls, it might be necessary to adapt it because of the expense of replacement.

Bear in mind that your students are excellent sources of information on ways to modify equipment to accommodate their exceptional needs. You should ask them for suggestions as you consider possible modifications.

For example, you might have an amputee in home economics for whom handling dishes is a problem. This student may know of modifications that can be made, such as the following. To avoid spills, a plastic

curved rail can be attached to the edge of shallow utensils, such as plates and dishes, or around a cutting board. The rail will keep food from sliding off the edge. Similarly, measuring cups, mugs, and teacups can be fitted with extended plastic handles for easier grip. The plastic handles can be riveted onto any standard cup handle.

It is important, when reviewing tools, equipment, and machinery, to look for the most efficient and practical method for meeting students' exceptional needs. Above all, you should avoid extreme decisions, such as to replace all existing equipment because a student has an exceptional need. Needs can often be accommodated more simply and inexpensively by using some imagination and initiative.

To Ensure Safety

Safety in the shop or lab is a source of major concern among vocational-technical educators. Ensuring the safety of **all** students is one of your major responsibilities. However, correct safety procedures can be absolutely **crucial** for students with exceptional needs. It is therefore important to review the lab or shop to ensure that the special safety needs of these students will be met there.

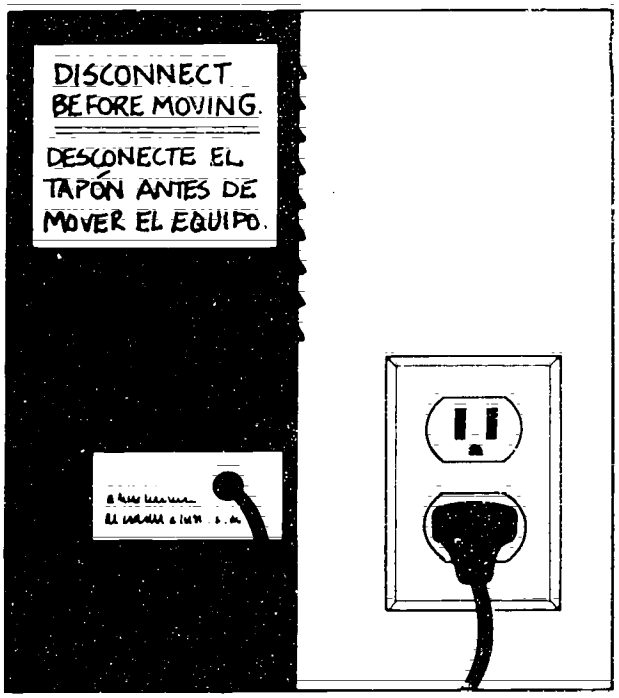
For example, the safety of some students with exceptional needs might be endangered by improper use of equipment, tools, or machinery. Modifications in warning signals (e.g., fire alarms), fire exits, signs, and safety reminders may also be required. For other students, such as those with epilepsy or asthma, special first aid procedures may be needed.

Safety instructions. If you have a safety handbook or handouts, you need to be sure that these can be used by all students, regardless of their exceptional needs. Therefore, you may need to have these materials translated into a foreign language, prepared in bilingual form, or audiotaped. For students who have reading difficulties, you may need to simplify the language and include a lot of pictures to support the text.

Equipment, tools, and machinery. You should already have identified and diagnosed those students who have exceptional needs related to the use of equipment, tools, and machinery. For example, students with motor control limitations may not be able to use certain tools, such as a wood lathe. You need to ensure that they know which tools can be dangerous to them and why.

A mentally retarded student may need to have tools, equipment, materials, machinery, and controls clearly labeled. Labeling tools with their names will make finding them easier. Labels should be prominent and clear. You can use survival words on controls, such as *DANGER, ON, OFF*. Students with limited English proficiency may need to have bilingual versions of the same labels.

Warnings and precautions. Some students with exceptional needs will require special warning devices or modifications in existing warning devices. For example, red lights that flash when the fire alarm sounds could be installed on the ceiling to warn hearing-impaired students.



In examining the lab, you should also decide whether you will need to display additional signs or posters with clearly labeled instructions or warnings. For students in programs nontraditional for their sex, you may want to add signs reminding them to dress appropriately for certain tasks. For example, a poster could serve to remind them to remove jewelry, ties, or scarves; to tie back their hair, to roll up their sleeves; or to wear an apron or lab coat.

You also need to ensure that all warning signs, devices, and posters communicate to students with exceptional needs. For example, for visually impaired students, you may need to add labels and instructions that have raised print. You need to ensure that the language is simple enough to be understood by mentally retarded students. For students with limited English proficiency, you may need to have safety signs and instructions translated into the students' native language.

If you have a learning disabled student in your lab, you may need to use pictures to remind the student of safety concerns in using equipment and machinery or to alert him/her to hazards. One picture could show the right way to use the machinery. In another, the wrong way could be shown, with a large *X* drawn through the picture.

Special first aid needs. In spite of all the precautions you take to ensure safety in your lab, a student with exceptional needs may require first aid. A student may have an accident. An epileptic student may have a seizure during your class.

Therefore, you must be familiar in advance with any special first aid procedures you need to follow in treating each student. One practical way to identify students' special first aid needs is to ask the students themselves about their needs before the program starts. You could also check health records for any mention of special medical needs and appropriate treatment procedures.

You need to review school policy to identify any legal limits related to your administering first aid to students. State and local policies regulate the types of first aid that can be administered.

You should also talk with trained personnel to determine what the extent and limits of your involvement in administering first aid to these students should be. A special education teacher, school nurse, or physician may have good suggestions concerning what you can reasonably be expected to do for students with special safety or medical needs.

Ensuring That Modifications Are Carried Out

Once you have analyzed the learning environment and consulted students to determine what changes are needed, your next task will be to ensure that the modifications are carried out.

From the previous discussion, it should be clear that modifications to the learning environment need not be complex or costly. They should be functional, simple, and based on the individual needs of each student. In reviewing the existing facility, you need to examine its suitability to each student's needs.

If you determine that modifications are needed to enable students to accomplish their goals, you should make those changes in the simplest and most direct manner. Elaborate and costly modifications may confuse rather than assist the student. On the other hand, where fundamental changes are needed, these must be made to ensure student success. Modification of the learning environment, therefore, requires good judgment coupled with practical common sense.

In some cases, you will be able to **make changes yourself**, perhaps with the help of students. For example, if desks, chairs, tables, and work stations need to be rearranged to make the learning environment more flexible or efficient, you and the students can probably do this yourselves.

You may also be able to modify some equipment or tools yourself. For example, you could adapt a standard typewriter for use by persons with only one arm. You can simply apply masking tape to the *A* and *F* keys for right-handed persons, and to the *J* and semicolon keys for left-handed students. The difference in texture is a guide for proper finger placement.

You can make some "modifications" related to students' physical comfort and safety as part of ordinary class procedures. For example, you can ensure that floors are cleared of debris or liquids that might cause orthopedically handicapped or visually impaired students to slip and fall. This is, of course, a safety measure that should be carried out in any shop or lab. Just a little extra attention on your part may be all that is needed.

You may also be able to do a great deal to provide for the emotional and psychological comfort of students with exceptional needs. For example, if the decor of the classroom makes some students feel out of place, you can alter it. Offensive signs or illustrations can easily be removed. Others, that include students with exceptional needs, can be added. If the classroom/lab arrangement is too rigid or intimidating, you and your students may be able to improve it by rearranging the furniture and equipment.

Finally, you and your students can make numerous modifications to provide for the safety needs of students with exceptional needs. If added warnings or instructions are needed to alert students to possible hazards, you and your students can make the needed posters or signs.

In other instances, you will have to **involve others** in modifying the learning environment. There are practical limitations on your involvement in making some modifications. For instance, it is unlikely that you will make such changes in the physical facility as the construction of ramps and the removal of architectural barriers.

However, if your institution elects to construct new facilities or modify existing ones, you should arrange to attend the planning meetings. Since you know the requirements of your program and of the equipment used in the lab, your input can be very valuable.

Other examples: If changes are needed in the heating, cooling, or ventilation system, or in machinery to reduce noise, you would probably not be expected to make those changes. Instead, you would need to report the problem to the appropriate source—perhaps maintenance personnel. They should then be able to make the necessary modifications for you. Similarly, if flashing lights for a hearing-impaired student or warning bells for a visually impaired student are needed, you might need to ask the administration to have this equipment installed.

You also may not be making major modifications to tools and equipment yourself. But you should work closely with trained personnel to determine what modifications are most feasible and necessary. You know the students' needs and capabilities and you will have consulted with them to determine what modifications will work best. You should discuss the possible adaptations with trained personnel and ask them to carry them out for you.

For example, you might have a student in your class who has lost the use of an arm. This student cannot use a brace and bit unless modifications are made. After talking with the student, you may decide that a shoulder plate needs to be added to allow the student to use the entire body to control inward pressure when drilling. You should then take your suggestion to the appropriate repair personnel and request that the plate be made.

You might also need help from others in devising safety instructions. For example, you may need to ask a foreign language teacher to translate safety instructions and signs into another language for a student with limited English proficiency.

Making modifications need not be a difficult task. Your main responsibility is to recognize what should be modified or adapted and to arrange to have the modifications made. You will know when you can make simple modifications yourself, when students or other teachers can help, and when you need the help of trained personnel.

The following case studies describe how several teachers modified the learning environment to accommodate students' exceptional needs. Read each case study and **critique in writing** the performance of the teacher described, explaining (1) the strengths of each teacher's approach, (2) the weaknesses of each teacher's approach, and (3) how each teacher should have modified the learning environment to accommodate the students' exceptional needs.

CASE STUDIES

Case Study 1:

Tran Thi Minh and Claude LaSalle are students in Ms. Barker's vocational program. Claude speaks English perfectly well but has great difficulty reading and writing because he has dyslexia. Tran Thi Minh, who is from Vietnam, can read and write English but does not speak it well.

Ms. Barker felt that communicating safety precautions to these students could be a problem. She had safety instructions posted in the laboratory and on the equipment and machinery. She got a friend to translate these into Vietnamese for Tran Thi Minh because, even though Tran Thi Minh could read English well, she lacked sufficient knowledge of technical vocabulary in English.

Since Claude could neither write nor read well, Ms. Barker decided that she would just have to tell him all about the safety precautions in the laboratory and hope that he would remember her oral instructions.

Case Study 2:

Mr. Kelly wanted to do all he could to help Patty Webster when she enrolled in his vocational program. He knew that she had had polio as a young child. As a result, she had limited endurance in one leg and limited use of one arm.

Therefore, Mr. Kelly made certain modifications in Patty's work area, tools, and equipment to accommodate her physical impairments. He gave her extra space so that she could store her crutches and her other equipment. He also arranged to have some of the power tools modified for her. He knew that she couldn't use them as they were, since she had limited strength in one arm.

However, Patty has been unable to use her worktable because she cannot stand on her feet for long periods of time. Also, she has complained that the distance between her work space and the tool board and storage cupboards was so great that she has been spending most of her time hobbling about trying to locate tools and materials.

Case Study 3:

Susan Roth, a hearing-impaired student, has had problems adjusting to the physical conditions in Mr. Clarke's vocational laboratory. She complained about the noise in the lab to Mr. Clarke. He told her that there was bound to be noise in the lab and that she would get used to it in time. He also suggested that she could turn down her hearing aid whenever the machines got too noisy.

Susan also complained that the heat in the room, coupled with the noise level, made her physically ill. Mr. Clarke just ignored her complaints. He felt that she was exaggerating her problem and just felt sorry for herself.

Case Study 4:

Barbara Johnson gave Ms. Hope so much trouble in her typing program that, eventually, Ms. Hope had a talk with her about it. Barbara told Ms. Hope that she found the atmosphere in the classroom disturbing because the class was too formal and intimidating. Barbara also told Ms. Hope that some of the posters on the walls were insulting to blacks because they always portrayed blacks as being in more menial positions than whites.

Ms. Hope listened to Barbara and decided to modify the learning environment a little to make it less rigid and threatening. She rearranged the work areas and seating so that Barbara could work on her own or with other students if she wanted to. Ms. Hope also removed the offensive posters and replaced them with more suitable ones.

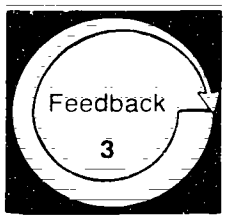
Mike Abrams is also in Ms. Hope's class, and she has often wondered why he bothered to enroll in the typing program. Mike has seemed very uncomfortable being around so many women. When Ms. Hope asked him, in front of a group of female students, whether he would be able to support his family on a secretary's salary, he seemed very embarrassed and wouldn't answer her.

Case Study 5:

Kim Deveaux and Annette Kostakis are both in Mr. Davis's vocational program. Mr. Davis diagnosed Annette as an exceptionally bright student. Kim is mentally retarded. Mr. Davis made arrangements to modify the learning environment to create a more flexible classroom atmosphere for Kim and Annette, because they both learned at very different rates from the other students.

He realized that his modifications should be designed to give both students an opportunity to learn at their own pace. Therefore, he arranged their work space in such a way that they could work on their own, on the projects they chose, without distracting or disturbing the other students. He placed Kim in a position where he could observe her constantly and be on hand to assist her whenever she needed help.

Mr. Davis also reviewed the equipment and machinery in the laboratory to ensure that they simulated the actual world of work as closely as possible. He did this so that Kim and Annette would have the opportunity to use the tools and equipment in a hands-on setting.



Compare your written critiques of the teachers' performance with the model critiques given below. Your responses need not exactly duplicate the model responses; however, you should have covered the same **major** points.

MODEL CRITIQUES

Case Study 1:

Ms. Barker did modify the learning environment to overcome Tran Thi Minh's difficulties with spoken English. She knew that, even though Tran Thi Minh could already read and write English, her technical vocabulary would probably be limited. Ms. Barker was correct in having the safety instructions translated into Vietnamese, as she wanted to be absolutely sure that Tran Thi Minh understood the safety precautions.

On the other hand, Ms. Barker made little attempt to modify the learning environment for Claude LaSalle. Claude really had the same problem as Tran Thi Minh—he was unable to read the safety precautions that Ms. Barker had posted in her laboratory. Unfortunately, Ms. Barker felt that it would be sufficient for her to simply **tell** Claude about these precautions, hoping that he would remember them. It is unlikely, however, that Claude would have been able to remember **everything** she told him.

There are other modifications that Ms. Barker could have made to accommodate Claude's problem with reading. She could have posted pictures to warn of safety hazards related to the equipment and machinery in the lab. The pictures could have illustrated correct procedures, or they could have shown errors to avoid with a large *X* drawn through each picture. Or, Ms. Barker could have made an audiotape explaining safety procedures and precautions that Claude could have listened to whenever he wanted to refresh his memory.

Either of these two modifications would have benefited other students in the lab as well. The pictures would have reminded all students of correct or incorrect procedures. Any student with reading problems or a visual impairment could have listened to the audiotape for information on safety.

Thus, while Ms. Barker did do a good job of making modifications to accommodate Tran Thi Minh's special needs, she did poorly with Claude. She should have gone the extra step and provided Claude—and other students—with some permanent reminder that could serve the same purpose as her other posted safety precautions.

Case Study 2:

Mr. Kelly did make some modifications in the learning environment for Patty Webster. He arranged extra space for her to store her crutches and other equipment. He also modified some of the power tools so that she would be able to use them in spite of the limited use of her one arm. These modifications were good, because they could help Patty function in the lab.

In spite of his good intentions, however, Mr. Kelly didn't do everything he could have. In the first place, he should have consulted Patty before arranging extra storage space for her. Although it did appear that Patty needed some room to store her crutches and equipment, by consulting with Patty beforehand Mr. Kelly could have ensured that he would provide the proper amount of storage space in the most convenient place. Further, he could have learned about Patty's other needs.

Mr. Kelly failed to make two important modifications for Patty. He should have stationed her at a worktable that was closer to the tool board. This would have prevented her spending too much time getting tools and materials. Of course, not every student could be right next to the tool board. Yet, a student with limited mobility should not have been made to spend time and effort in this manner.

Mr. Kelly should also have made some kind of modification to accommodate Patty's limited endurance. Since she couldn't stand on her feet for long periods of time, he should have modified the worktable in some way so that she didn't have to stand. He could have lowered the worktable, allowing Patty to sit in a regular chair while at the table. Or, he could have obtained a tall stool for Patty to sit on while at the table. Either of these two solutions would have taken Patty's special needs into account.

Case Study 3:

Overall, Mr. Clarke did a poor job of modifying the learning environment for Susan Roth. Susan had two problems in the lab. The noise from the machines bothered her a lot. Also, the heat in the room, combined with the noise, made her feel ill.

It was appropriate for Mr. Clarke to tell Susan to turn down her hearing aid when the noise from the machines in the lab bothered her. In fact, it was probably inevitable for there to be noise in the room. There may have been nothing he could have done about it.

His attitude that "she would get used to it in time," however, did seem a little callous. He could have been more tactful in explaining to Susan that there was bound to be noise. And he could have done other things.

For example, Mr. Clarke should have examined his lab to determine whether it would be possible to reduce the level of noise in some way. It might have been possible to have some of the machinery insulated to reduce the noise. Perhaps certain machines could have been mounted on pads to muffle the sound. Excess noise could also have been caused by vibration due to improper mounting or by motors or engines that were not functioning properly.

Had he examined his equipment, he might have found some way to lower the noise level in the lab. This would have benefited not only Susan, but all students in his program.

Finally, Mr. Clarke used very poor judgment when he ignored Susan's complaints about excess heat in the lab. There were numerous modifications he could have made to reduce the heat level. First of all, he might simply have lowered the thermostat. He could have checked the ventilation in the lab to see that air was circulating properly.

Mr. Clarke could also have tried to find a cooler spot in the room for Susan to use. If all else failed, he could have had the maintenance personnel check out his lab. Perhaps they could have located some problem and recommended an appropriate solution.

Case Study 4:

Ms. Hope did make some good modifications in the learning environment for Barbara Johnson. She arranged the seating and work areas to be more flexible. This allowed Barbara to feel more comfortable and less intimidated. Barbara could then work on her own and interact freely with other students and with Ms. Hope.

Similarly, Ms. Hope did well to remove the posters that Barbara found offensive. By replacing the posters, Ms. Hope certainly improved the learning environment for Barbara. Presumably, the new posters did not portray only blacks in menial positions and portrayed blacks in higher-level positions as well.

However, Ms. Hope seemed to ignore Mike Abram's psychological discomfort in her classroom. In fact, she actually contributed further to his discomfort by embarrassing him in front of the other students. What could she have done?

Ms. Hope should have first spoken with Mike to determine why he felt uncomfortable in the program. In all probability, this discomfort came from being the only male in a class full of women. In that case, Ms. Hope could have made Mike aware of other men in the secretarial profession. She could have located posters, signs, articles, and other materials depicting men in the clerical field and posted these along with the others in her classroom.

Also, she should have examined the overall atmosphere in her classroom. Perhaps the classroom had a dainty, fussy appearance that made Mike uncomfortable. If so, she could have made some changes to the appearance of the room to make it look less traditionally feminine. Had she done something like this, she might have been able to reduce Mike's discomfort at being the only man in the class.

Case Study 5:

Mr. Davis's efforts at modifying the learning environment for Kim Deveaux and Annette Kostakis were very appropriate and thorough. He understood that they both had individual needs—Annette learned at a very fast rate while Kim performed at a much slower rate. Consequently, he was quite correct in providing them with a flexible seating and work space arrangement that would give them the opportunity to learn at their own pace.

He was also aware that he needed to give Kim extra assistance. So he arranged the room in such a manner that he could observe her progress and easily go over and help whenever needed. Flexible seating would also benefit other students in the class.

Mr. Davis was also careful to review the equipment, tools, layout, and machinery to ensure that they duplicated, as much as possible, the actual world of work. Thus, he allowed his students the chance to use tools and equipment in a hands-on setting similar to that of an actual job setting. Kim, who is a slow learner, would have the opportunity to engage in tasks essential to her success in a real-life job situation. This was yet another modification that would benefit both "regular" students and students with all types of exceptional needs.

We do not know whether Mr. Davis made sure that the room was arranged to encourage efficient use of time, effort, and energy. This is one aspect of the environment to which he might have attended. For example, he could have arranged to have storage areas, tool boards, or other essential equipment relocated so that Kim would not have any difficulty finding them. Or he might have created special storage facilities for Kim and Annette since they would be engaged in somewhat different tasks from the other students.

Level of Performance: Your written critiques of the teachers' performance should have covered the same **major** points as the model critiques. If you missed some points or have questions about any additional points you made, review the material in the information sheet, Modifying the Learning Environment, pp. 6–13, or check with your resource person if necessary.

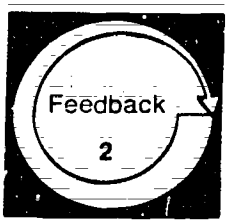
NOTES

Learning Experience II

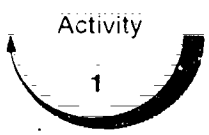
OVERVIEW

Given a profile of a student with exceptional needs, outline the modifications that could be made to a selected learning environment to meet the needs of that student.

You will be using the Worksheet, pp. 22–26, as a guide to outline the modifications that could be made to a selected learning environment to meet a given student's exceptional needs.



Your competency in outlining the modifications that could be made to a selected learning environment to meet a student's exceptional needs will be evaluated by your resource person, using the Worksheet Checklist, pp. 27–28.



Using the following worksheet as a guide, determine whether the learning environment of a selected vocational-technical classroom or lab would meet the exceptional needs of the student described in Part I. Then, **outline in writing** the modifications you would make in this learning environment to meet this student's needs.

WORKSHEET

Part I: Student Profile

Carl Scott is a 46-year-old black man currently enrolled for retraining in your program. Carl had to leave his job at Madison Products six months ago, after sustaining an injury that left him without the use of his right hand and arm.

Carl had several operations after the accident. He has been making steady progress toward regaining the strength in his hand and arm by attending physical therapy sessions. However, he is still a long way from having complete use of his hand and arm.

Since the accident, Carl has been having periodic bouts of depression during which he becomes discouraged with the laborious process of adjusting to the physical loss. However, after a few days, he usually rallies and regains his normal good spirits and optimism.

Carl enrolled in your program at the suggestion of his physical therapist. He agreed to enroll in spite of his misgivings about being in a traditional classroom with younger students after having been out on his own for so long. He remembers that, when he was a young man in school, he had to engage in the same learning activities as the other students whether he wanted to or not. He doubts strongly that he can tolerate that kind of restriction anymore.

Carl always enjoyed outdoor activities and still does. His favorite pastime is watching pro football games, and he loves to jog. He once remarked that he should be grateful that the accident did not prevent him from using his legs. He loves the feeling of freedom he experiences when he jogs and the chance to fill his lungs with fresh air.

In fact, that's why Carl enjoyed working at Madison so much—he spent most of his time working outdoors. He sometimes wonders how he will adjust to the heat and air in the school shop.

Carl also enjoys dismantling and rebuilding small engines and motors. Since the accident, he has managed to do some of that, even with the damaged hand. He uses a variety of apparatus—wrist hold-down devices, clamps, tool holders—to help him as he works. He has so much special paraphernalia that he has a cabinet at home to store it in when he's not using it.

Part II: Student Characteristics

Describe briefly, in writing, Carl Scott's needs and abilities that would affect his performance in the learning environment of a vocational-technical classroom or laboratory.

Part III: The Learning Environment

Select a classroom or laboratory in your own occupational specialty to review. In your analysis, you will be determining whether the learning environment meets the needs of Carl Scott.

If you are an inservice teacher, you may analyze your own classroom or lab. If you are a preservice teacher, you may be able to analyze a classroom or lab in your teacher education institution, or one in a school in your area.

Use the questions below as a guide in writing an analysis of the learning environment of the classroom or laboratory you have selected. Be specific in your answers.

1. Does the present learning environment allow for the use of flexible, individualized instruction for Carl Scott?

2. Could the present learning environment provide for Carl Scott's emotional and psychological well-being?

3. Could the present learning environment ensure Carl Scott's physical comfort?

4. Could the present learning environment provide Carl Scott with adequate access to tools, equipment, machinery, furniture, and physical facilities?

5. Could the present learning environment ensure Carl Scott's safety?

Part IV: Modifying the Learning Environment

In Part II, you identified characteristics of Carl Scott that would affect his performance in the learning environment. In Part III, you analyzed a selected learning environment to determine whether it met those needs and abilities. Now, use the questions below to outline, in writing, the modifications you would make in that learning environment to meet the needs and abilities of Carl Scott.

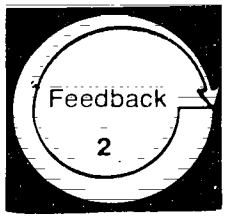
1. How would you modify the learning environment to allow for the use of flexible, individualized instruction for Carl Scott?

2. How would you modify the learning environment to provide for Carl Scott's emotional and psychological comfort?

3. How would you modify the learning environment to ensure Carl Scott's physical comfort?

4. How would you modify the learning environment to give Carl Scott adequate access to tools, equipment, machinery, furniture, and physical facilities?

5. How would you modify the learning environment to ensure Carl Scott's safety?



After you have completed the worksheet, arrange to have your resource person review and evaluate your work. Give him/her the Worksheet Checklist, pp. 27–28, to use in evaluating your work.

WORKSHEET 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
In describing the student's characteristics, the teacher identified:				
1. Carl's anxieties about fitting into a traditional instructional setting as an adult	☐	☐	☐	☐
2. Carl's preference for outdoor activities and fears that he might not adjust to the heat and air in a typical vocational lab	☐	☐	☐	☐
3. Carl's limited use of his right hand and arm, requiring special apparatus.	☐	☐	☐	☐
4. Carl's need for additional storage space for his special apparatus	☐	☐	☐	☐
In analyzing the learning environment for possible modifications, the teacher determined:				
5. whether existing storage space met Carl's needs to store wrist hold-down devices, clamps, etc.	☐	☐	☐	☐
6. whether, with limited use of his hand and arm, existing storage areas, cupboards, and shelves would be accessible to Carl	☐	☐	☐	☐
7. whether modifications would be needed to tools, equipment, and machinery to accommodate Carl's limited use of his hand and arm	☐	☐	☐	☐
8. whether work stations and seating arrangements accommodated Carl's need for a flexible learning environment (e.g., working at his own pace, independently, etc.)	☐	☐	☐	☐
9. whether the classroom decor was appropriate for adult students like Carl	☐	☐	☐	☐
10. whether the physical conditions in the lab provided for Carl's physical comfort (e.g., air, heat)	☐	☐	☐	☐
11. whether Carl's limited use of his arm and hand would create safety hazards for him in using equipment, tools, and machinery	☐	☐	☐	☐
12. whether additional safety precautions and procedures would be needed to accommodate Carl's limited use of his hand and arm	☐	☐	☐	☐

In outlining modifications needed in the learning environment, the teacher planned to:	N/A	No	Partial	Full
13. make cupboards, shelves, and storage areas accessible to Carl	☐	☐	☐	☐
14. provide adequate storage space for Carl's special apparatus	☐	☐	☐	☐
15. modify existing tools, equipment, and machinery to accommodate Carl's limited use of his hand and arm	☐	☐	☐	☐
16. provide for Carl's physical comfort (e.g. heat, ventilation)	☐	☐	☐	☐
17. provide for Carl's emotional and psychological comfort as an adult student	☐	☐	☐	☐
18. provide safety precautions to accommodate Carl's limited use of his hand and arm	☐	☐	☐	☐

Level of Performance: All items must receive FULL or N/A responses. If any item receives a NO or PARTIAL response, revise your worksheet accordingly or check with your resource person if necessary.

Learning Experience III

FINAL EXPERIENCE

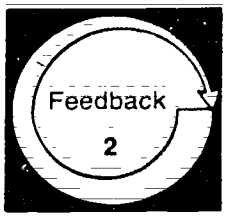
In an **actual teaching situation,*** modify the learning environment for exceptional students.

As part of your duties as a teacher, modify the learning environment for students with exceptional needs. This will include—

- consulting students about their exceptional needs and modifications needed in the learning environment
- analyzing the learning environment
- carrying out needed modifications

NOTE: Due to the nature of this experience, you will need to have access to an actual teaching situation over an extended period of time (e.g., one to three weeks).

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



Arrange to have your resource person (1) review any documentation you have compiled and (2) visit the learning environment to verify your analysis and observe any modifications you have made.

Your total competency will be assessed by your resource person, using the Teacher Performance Assessment Form, pp. 31–33.

Based upon the criteria specified in this assessment instrument, your resource person will determine whether you are competent in modifying the learning environment for exceptional students.

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

NOTES

TEACHER PERFORMANCE ASSESSMENT FORM

Modify the Learning Environment for Exceptional Students (L-5)

Name

Date

Resource Person

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

	LEVEL OF PERFORMANCE					
	N/A	None	Poor	Fair	Good	Excellent
The teacher consulted students with exceptional needs to determine:						
1. whether they had special storage or space needs	☐	☐	☐	☐	☐	☐
2. whether they could use existing tools, equipment, machinery, and furniture	☐	☐	☐	☐	☐	☐
3. whether they had special health or safety needs	☐	☐	☐	☐	☐	☐
In analyzing the learning environment for possible modifications, the teacher determined:						
4. whether the existing spatial allotment met students' storage or space needs	☐	☐	☐	☐	☐	☐
5. whether storage areas, cupboards, toolboards, etc., would be accessible to all students	☐	☐	☐	☐	☐	☐
6. whether architectural barriers would create mobility problems for any students	☐	☐	☐	☐	☐	☐
7. whether identified architectural barriers could be removed	☐	☐	☐	☐	☐	☐
8. whether furniture, tools, equipment, and machinery needed to be modified for any students	☐	☐	☐	☐	☐	☐
9. whether the layout of the lab/classroom, and the tools, equipment, and machinery simulated the actual world of work	☐	☐	☐	☐	☐	☐
10. whether existing seating arrangements would accommodate the needs of physically/sensory impaired students	☐	☐	☐	☐	☐	☐
11. whether posters, illustrations, or signs could be considered offensive to any students	☐	☐	☐	☐	☐	☐
12. whether the decor of the classroom/lab would make any students feel out of place	☐	☐	☐	☐	☐	☐
13. whether the physical conditions provided for the physical comfort of all students	☐	☐	☐	☐	☐	☐
14. whether the seating arrangements, arrangement of work stations, etc., allowed for adequate teacher-student and student-student interaction	☐	☐	☐	☐	☐	☐

	N/A	None	Poor	Fair	Good	Excellent
15. whether machinery, tools, and equipment would pose safety hazards to any students	☐	☐	☐	☐	☐	☐
16. whether there were emergency health precautions to be followed for exceptional students	☐	☐	☐	☐	☐	☐
17. whether there were policy or legal implications involved in giving aid to exceptional students	☐	☐	☐	☐	☐	☐
18. whether additional precautions and procedures would be needed to accommodate exceptional students' safety needs	☐	☐	☐	☐	☐	☐
19. whether additional precautions and procedures would be needed to accommodate exceptional students' health needs	☐	☐	☐	☐	☐	☐
20. whether emergency resources were available to provide aid to exceptional students	☐	☐	☐	☐	☐	☐
In carrying out or arranging to make modifications in the learning environment for students with exceptional needs, the teacher:						
21. sat in on facilities planning sessions to provide input into modifications needed in the physical setting	☐	☐	☐	☐	☐	☐
22. made cupboards, shelves, storage areas, materials, etc., accessible to the students	☐	☐	☐	☐	☐	☐
23. rearranged work stations, seating, tables, desks, and chairs to allow the students to work at their own pace or independently	☐	☐	☐	☐	☐	☐
24. simulated the on-the-job setting, including equipment, tools, and machinery for hands-on use by the students	☐	☐	☐	☐	☐	☐
25. arranged adequate space/storage to meet the students' exceptional needs	☐	☐	☐	☐	☐	☐
26. removed posters, signs, and illustrations that might be regarded as offensive or biased	☐	☐	☐	☐	☐	☐
27. altered the decor to accommodate nontraditional or adult students	☐	☐	☐	☐	☐	☐
28. rearranged seating to accommodate the needs of physically/sensory impaired students	☐	☐	☐	☐	☐	☐
29. eliminated identified architectural barriers where possible	☐	☐	☐	☐	☐	☐

	N/A	None	Poor	Fair	Good	Excellent
30. consulted the school nurse/physician or special education teacher about emergency procedures and special medical needs of the students	☐	☐	☐	☐	☐	☐
31. provided safety precautions and procedures to accommodate exceptional needs	☐	☐	☐	☐	☐	☐
32. provided for the physical comfort of the students	☐	☐	☐	☐	☐	☐
33. instituted health precautions and procedures to accommodate exceptional needs	☐	☐	☐	☐	☐	☐

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).

NOTES

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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

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