DOCUMENT RESUME

ED 210 564 CE 030 913

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TITLE Ready to Work. Using Competencies, Standards and Assessment to Meet Local Employer Needs.
INSTITUTION Northwest Regional Educational Lab., Portland, Oreg.
SPONS AGENCY National Inst. of Education (ED), Washington, D.C.
PUB DATE Aug 81
CONTRACT 400-81-0013
NOTE 139p.

EDRS PRICE MF01/PC06 Plus Postage.
DESCRIPTORS *Competency Based Education; *Employer Attitudes; *Employment Potential; Evaluation Methods; Individualized Instruction; *Job Skills; Program Administration; Program Design; Program Development; Program Guides; *Program Implementation; Recordkeeping; *Skill Development; Student Evaluation; Student Records

ABSTRACT

Written for planners and practitioners in employability skills development programs, this handbook provides information and resources for designing and implementing competency-based instruction. Chapter 1 provides an introduction to basic terms and concepts that make up a competency-based system. It describes four skills required for one to be considered "ready to work" or employable: pre-employment competencies, work maturity, educational skills, and occupational skills. Chapter 2 presents a process and resources for planning a competency-based employability skills development process. Techniques are detailed for building a workplan, gathering information to define competencies, laying out the set of competencies and performance indicators, and reporting the process. Chapter 3 focuses on assessing competencies. Topics covered include purposes for assessment, methods, instrument development or selection, and organizing the assessment process. Chapter 4 on program management considers developing management goals. Chapter 5 offers a model for individualizing employability training. Examples of individual planning forms are provided. Chapter 6 looks at recordkeeping and reporting, including audiences and data sources. Selected forms are provided. Appendixes, amounting to approximately one-third of the handbook, include a listing of resources, sample competency development plan, sample competency sets, and starter lists of published instruments. (YLB)

READY TO WORK

Using Competencies, Standards and Assessment to Meet Local Employer Needs

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August 1981

This document is prepared by the Northwest Regional Educational Laboratory, a private, nonprofit corporation. The work upon which this publication is based was performed persuant to Contract No. 400-81-0013 of the National Institute of Education. It does not, however, necessarily reflect the views of that agency.

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EXECUTIVE SUMMARY

The most innovative programs that prepare people for work in the 1980s have used one or more of the following approaches:

- Local employers, union representatives, training experts and other knowledgable persons have helped decide the essential skills one needs to be hired and to succeed in a particular occupation.

- These minimum expectations are clearly stated for all to see in terms of competency levels a person should be able to demonstrate.

- Learning activities for the program are built after the desired outcomes are identified.

- Each person enrolled has a plan that is tailor-made to meet individual needs and aims.

- Time spent in various activities depends on how long it takes to acquire competence.

- Assessment techniques not only measure progress but continually emphasize application in real life situations.

- Assessment techniques are varied depending on the type of skill involved.

These programs build new relationships and strengthen ones that were not so visible before:

- The youth or adult being served learns to become more self-reliant by helping to plan each learning activity so it achieves desired ends.

- The youth or adult comes to view the community as a rich resource for learning both life-long and job-related skills.

- Relationships between theory and training are made concrete through experience.

- Agencies become more closely linked together in a common cause to solve employment problems in the local area.

This handbook was created through a joint effort between the U.S. Department of Labor, the National Institute of Education, the Northwest Regional Education Laboratory, and 14 local or state programs that initially developed and tested most of the ideas.

Chapter One describes how being "ready to work" (or employable) requires four kinds of skills:

1. Pre-employment competencies include being aware of how the world of work operates, how to narrow career choices, how to figure out occupational preferences and then how to get a job.

2. Work maturity involves demonstrating ability to apply skills in the workplace by meeting such basic employer expectations as dependability, having a positive attitude and working well with other people.

3. Since most jobs require us to read, write, speak, think, listen, or compute, there are numerous ways to apply the basic tools which schools have been dealing with for years: educational skills. Unfortunately, many persons never see the link between academic learning and how these fundamental skills are applied in everyday worklife.

4. Knowing how to perform the step-by-step details of a particular job is classified as occupational skills. While experts have toiled many years to describe the component tasks of a certain job, each local employer typically decides what is acceptable for that particular situation. What the job-seeker needs to show is a solid grounding in the essential basics and an ability to transfer and adapt these skills to an ever-changing work environment.

A key term used frequently in this handbook is "benchmark." While a competency in one of the four areas above refers to a skill or something a person does, a benchmark refers to the standard of performance at which a person is expected to demonstrate that competency. If an employer reads a portfolio that indicates Person A has demonstrated a particular competency at Benchmark Level 9 out of a possible 10, hiring might be a good bet.

Benchmarks (standards of performance) become an essential planning tool, then, in developing individual career training plans and in telling employers what this applicant can do.

Chapter Two provides a scenario of a typical planning process you might expect to find in programs that have adopted competency-based training. Putting together a workplan is the first step and this effort must involve a diverse group of interested persons. Making sure competencies and benchmarks are locally relevant is key. While there are many lists of life and career-related skills available, support for your program's own set will occur if you build and ratify locally-established competencies and standards.

Four information-gathering techniques are described that have worked in other communities to define competencies and set benchmarks: open forum, survey, DELPHI and Q-sort.

A model is provided for laying out the set of competencies and performance indicators. Chapter Two also suggests methods for reporting the process to the community-at-large.

Assessment techniques require careful consideration in competency-based programs. Chapter Three makes a strong plea for program staff to know their purposes before deciding on any particular assessment strategy. There are essentially three types of assessment activity: initial assessment at program entry; assessment used by instructors to determine an individual's progress; and assessment for external reporting.

Depending on the competence being assessed, a variety of methods can be used: behavioral observation, product reviews, and oral or written questions. Each approach has its pros and cons for any particular purpose and Chapter Three helps you sort out those variables for yourself. At one time or another you'll be faced with preparing a measurement instrument yourself, so guidelines are suggested for designing checklists, rating scales, open-ended questions and multiple-choice questions. Criteria are also provided for selecting existing instruments.

The Appendix provides a starter list of sample instruments in the four competency domains. Chapter Three discusses ways to organize the assessment process. Staff implications and the use of computerized testing are explained. References for additional information are presented.

A competency-based program needs to focus not only on how well individuals are reaching their goals, but whether the program itself is meeting expectations. Chapter Four points out how management goals must be established by program staff, collaborating agencies, advisory bodies and funding agents. Keeping communication lines open is a constant challenge. Checking, reporting and adjusting program performance requires managers to seek out information regularly and with clear intent.

Chapter Five offers an ideal model for individualizing employability training, while recognizing that to do it right requires intense interaction among people and trust between agencies. We focus on the individual career plan and the recordkeeping system. Negotiation between the person being served and staff typically follows a four-stage process: (1) initial assessment of needs, interests and abilities; (2) prescription of the appropriate learning experiences leading to competence; (3) ongoing assessment to determine progress and to help decide where more work is needed; and (4) eventual integration of theory, practice and insight so that the person "makes sense" out of the general mix of activities and can adjust the plan, if needed. Examples of individual planning forms are provided.

Documentation and recordkeeping strategies can either be cumbersome or smooth, depending on your solutions to issues raised by Chapter Six. A first consideration is to determine audiences. Who needs what information to answer what questions? Likely questions you'll receive from internal and external sources are reviewed. Reducing staff workload must be a prime consideration. Selected forms from competency-based programs are provided.

Ready to Work presents some of the most promising developments of the last decade in competency-based training. A number of exemplary Employment and Training projects have used these techniques with great success in preparing and placing workers. Research has proven the long-term merits of using performance as the measure of a person's readiness for work.

This handbook, then, is a resource for the future. It is not only a state-of-the-art look at career preparation--it is a working manual for planners as they shape programs in their communities.

PREFACE

Today, competency-based education is a true movement in both the secondary and postsecondary areas. It seeks to focus instruction on what the learner can do, and how that is best measured, instead of on how long the learner attends class.

Competency-based techniques seem to work particularly well in employability programs because:

- The skills are clearly stated in terms of what the person is able or expected to do.
- There is an accepted, measurable standard of achievement for each skill; this standard specifies in observable terms the degree to which the skill is performed.
- There is a reasonably valid, reliable and useful method at hand for measuring attainment of the standard.
- Instructional and training services exist which allow individuals to learn what is needed to perform at an acceptable standard.
- The skills, at the specified standards, are accepted in the community as showing a satisfactory level of performance for entry-level employment.

It should come as no surprise that these conditions are associated with successful learning: many practitioners in diverse educational fields have found them to be fundamentally important. For instance, the technique of task analysis has clarified the learning of new jobs.

A recent study carried out for the U.S. Department of Labor (Michel et al., 1981) concluded that benchmarking, the method used in the CETA system to describe achievement of employment competencies, is the next logical step in improving employment programs. Those who have been involved in the use of benchmarking through the Consolidated Youth Employment Program (CYEP), the Vocational Education Demonstration Program (VEDP) and other DOL-funded demonstrations, have become advocates for the use of the concept.

This handbook is written for planners and practitioners in employability skills development programs. Its purpose is to provide information for improving programs through the use of techniques of competency-based instruction, and assessment. The handbook is arranged so that the user can focus either on topics of specific interest, such as involving the community or on the entire process of competency-based programming.

This handbook is meant for use by people in roles such as:

- Staff, counselors and program planners in employment and training agencies serving youth and adults
- Staff of agencies working to keep people out of the criminal justice system
- Employers wishing to take a more active role in workers' training
- Staff of vocational-technical institutes and skills centers
- Career education specialists working with local school districts
- Counselors and other instructional staff in secondary and postsecondary institutions
- Staff of adult basic education programs
- Program staff serving handicapped learners and job seekers
- Vocational rehabilitation counselors

The handbook is designed to provide information and resources that will help you design and implement competency-based instruction. It is intended to be flexible enough to meet the needs both of persons who need to implement parts of a system and of persons who want to institute a whole system.

Some of the terminology in this handbook may be new to some readers; however, we have tried to offer enough illustrations so that the meanings of terms are clear. There is nothing totally new in the concepts presented here. What is new is the way in which they are put together.

The concepts of competency-based instruction herald the next step in training for employability. By focusing on the employability needs of the individual participant, and by providing activities and assessment that can show whether the needs have been met, these programs can consistently prepare people who are ready to work.

The authors of this handbook represent three distinct but closely related research and development thrusts at Northwest Regional Educational Laboratory (NWREL). Dr. Larry McClure and Dr. Greg Druian of NWREL's Education and Work Program were responsible for overall preparation. Dr. Beverly Anderson of the Laboratory's Assessment and Measurement Program was responsible for the sections dealing with measurement and instrumentation issues. Dr. Robert Blum of the Goal-Based Education Program provided an overall framework for the design of competency-focused system.

Chapter One: WHAT IS A COMPETENCY-BASED SYSTEM?

I. OVERVIEW

A competency-based employment and training system must rest on a solid foundation. The one described in this handbook consists of four competency areas: pre-employment, work matruity, educational skills and occupational skills. Within each area, specific competencies and standards are developed which reflect a local area or community's consensus about skills which are needed for employability. This chapter provides an introduction to the basic terms and concepts that make up a competency-based system.

II. FRAMEWORK AND DEFINITIONS

Before we look at specific elements of the system, it will help to consider the framework underlying this guide. Many frameworks are possible; the one used here was developed by the U.S. Department of Labor. It consists of four kinds of work-related skills which people need to have in order to enter and succeed in the work force. These four kinds of skills are referred to as COMPETENCY AREAS. Within each broad competency area, local employers select specific competencies, indicators and appropriate standards of performance (benchmarks).

The four competency areas are:

Pre-employment.	This competency area covers a basic awareness of the world of work, the range of career alternatives available and methods for selecting among the alternatives. Pre-employment skills include knowledge of one's own career interests and of one's strengths and limitations as they relate to various career choices.
Work Maturity.	This competency area involves a demonstrated ability to meet the employer's expectations of basic employee responsibilities, e.g., attendance, ability to carry out instruction, etc.
Educational Skills.	This competency area deals with mathematics and language skills appropriate to career interests, and the application of these skills to real work situations.

Occupational Skills. This competency area includes mastery of basic and advanced skills required for a specific occupation or cluster of occupations.

Within each of these competency areas, a number of COMPETENCIES should be identified. Competencies are defined as minimum skills necessary for employment, and they differ from community to community. They may be acquired in a variety of formal and informal ways, including schooling, on-the-job training and life experience. In the context of employability skills development, competencies refer to more than the occupational qualifications to obtain a specific job--they also refer to the cluster of related skills that enable a person to continue to compete in the labor market.

INDICATORS are behaviors that show whether a particular competency has been mastered. For example, demonstrating career awareness might be one of the pre-employment competencies. To indicate mastery of this competency, a person might name careers available in the community. Sometimes a competency has many indicators associated with it and sometimes only one or two. Also, it may not always be necessary to accomplish every indicator in order to show mastery of a competency. For instance, the competency "having a positive work attitude" may be demonstrated by indicators such as "seeks ways to improve performance" or "takes initiative in finding tasks." Performance on one of those indicators may be sufficient to indicate mastery of the competency.

The important point to remember is that a competency describes desired skills, knowledge or attitudes; indicators describe the observable, measurable behaviors that your program will accept as evidence that the competency has been attained.

STANDARDS OR BENCHMARKS are closely related to indicators. While an indicator refers to a behavior, or something measurable a person does, a standard states the extent to which a person is expected to demonstrate the indicator.

Indicators and standards are usually stated together. For instance, under the competency of "demonstrating regular attendance," the indicator "show up on time in a work experience placement" is joined with the standard "four out of five times."

There is another reason standards are a useful device for measuring employment-related skills: If set locally, they are accepted by employers in the community as minimal acceptable levels of performance for entry-level jobs. This means that a person who has achieved stated standards in all four competency areas is likely to be successful in an entry-level (or better) position.

Robert, who lives in a large city, types 34 words per minute and he aspires to be a word processing specialist. In the Occupational Skills Competency Area, however, the standard for typing is set at 65 wpm for a person wanting to enter the word processing area. Robert knows that he will have to nearly double his speed in order to get a job. But Carla, who lives in a rapidly growing suburban area, could qualify by typing only 55 wpm because the employers in her area, faced with more jobs than people to fill them, set the standard lower to make the job easier to fill.

Competencies, indicators and standards (or benchmarks)* are three of the four major concepts in this system. The fourth is <u>ASSESSMENT</u>. In the past, assessment (testing) had little to do with what a person actually did on the job. As will be explained in Chapter Three, the function of assessment becomes extremely important in competency-based systems.

Orlando enrolls in a computer class. At the outset of the class, the instructor sets forth the competencies each student will have to master in order to complete the class requirements. At least one instructional unit is devoted to each identified competency. Attainment of each competency is measured by using an assessment strategy designed for the purpose.

In a competency-based system, assessment becomes the way to document and verify whether a person has attained a given standard. Or, if the person has not attained the standard, the assessment process shows what remains to be done to attain it.

Catherine is a photographer. In order for her to advance in her profession, she has to assemble a portfolio of her best photographs, which she then takes to prospective employers. The employers assess her work in this way. (She does not have to take classes or pass a licensing test in order to grow in her field.)

*"Standard" and "Benchmark" are used interchangeably in this handbook. Both terms refer to <u>how well</u> a person performs the competency.

Competencies, indicators, standards and assessment are all dependent on one another in a smoothly functioning system. Some examples may illustrate different ways the relationship occurs:

Competency Area	(Minimal Skill)	Indicator and Standard	Assessment Method
Work Maturity	The participant will demonstrate regular attendance . . .	by showing up on time four days out of five in a work-experience placement . . .	as measured by an employer checklist that includes an item on punctuality.
Pre-employment	The participant will demonstrate career awareness . . .	by naming five careers available in the community . . .	in a counseling interview.
Educational Skills	The participant will communicate through writing . . .	by preparing a brief business letter that is neat, and contains no more than one grammatical or spelling error . . .	in a classroom exercise simulating a business environment.
Occupational Skills	The participant will perform filing tasks by . . .	filing materials alphabetically with no mistakes . . .	given a paper and pencil test with several items to alphabetize.

Within each competency area, a number of competencies will usually be identified, along with indicators, standards (benchmarks) and a method of assessing whether the standard has been met.

III. HOW COMPETENCY-BASED SYSTEMS CAN IMPROVE EMPLOYABILITY PROGRAMS

Competency-based systems offer a way to (1) closely tie the program to community needs and requirements, (2) provide for program and individual accountability and (3) coordinate all program activities, from planning and assessment through training, counseling and placement.

> In one program for young people operated by a CETA prime sponsor, Jean was given tests upon entering the program and the results were used to select a work-experience placement for her after school. In the meantime, her school counselor had given her a career interest inventory. But even though the CETA and school counselors at times worked together, they did not share the results of their various assessment activities. Furthermore, Jean's work at school did not seem to contribute to her performing effectively in the job--and she did not see how her job tied in to school work. When she graduated from high school and had job interviews, Jean felt she didn't have a way of showing what she could really do.

Because a competency-based system is tailored to the needs of the community, and because it reflects local standards, participants are more likely to be acceptable to employers. In one area for instance, the appliance store owners may be willing to employ persons certified by a community college as having mastered competencies in the area of television repair. They may be less willing to hire a person from outside the area because they are unsure of the standards to which the person was trained. In the same way, competency-based systems can report not only competencies in occupational areas, but also in areas of work maturity, pre-employment and education. Just as a person is able to approach an employer with evidence of ability to fix a T.V. set, a person should also be able to provide evidence of reliability, of basic educational attainment and other attributes the employer may be looking for. The strengths of the system are that:

- Employers have participated in the setting of standards.
- Attainment of standards is demonstrated in concrete and measurable terms.
- Skill attainment is demonstrated in all areas related to work success--not only occupational skills.

Competency-based systems also foster accountability by providing individualized instruction based on mutually understood goals. In an example used earlier, the person who could only type 34 words per minute knew that he would have to type approximately 30 wpm faster in order to get an entry-level job.

In a competency-based system, it is important whether you can demonstrate a skill--not how you learned it. Indeed, different people learn in very different ways. Moreover, the kinds of skills needed for work place success are extremely diverse. By focusing on standards, individuals are encouraged to develop skills in the way that is most appropriate for them. As a consequence, participants in such systems tend to be:

- Working toward clearly stated goals
- Clear about how what they are doing relates to achieving the goal
- Working towards goals that are meaningful and important to them.

A competency-based system can also strengthen programs because it creates linkages among agencies and institutions which offer related services.

A youth services agency established a "benchmarking" system for its high school age clients. Not having the staff expertise to offer instruction in basic skills, this agency accepted certain school credits as evidence of attainment of benchmarks in the Educational Skills area. Furthermore, because the high school in the area offered a career education course that covered many of the benchmarks associated with the pre-employment area, the agency also accepted credit from that course for appropriate benchmarks. The same agency also learned that a juvenile justice program serving certain high-risk youth also focused on pre-employment skills. Youth who participated in that program were able to gain certification of appropriate benchmark attainment.

Of course, acceptance of another agency's program doesn't necessarily guarantee that benchmark performance will be attained. But by finding out what other agencies offer, and by entering into dialogues with staff of other agencies, it may be possible to dramatically increase both the coordination of services and the efficiency with which the services are delivered.

Putting It Into Practice

There are varying degrees to which one can develop the concepts underlying competency-based employability programming. The ten points listed below are intended to stimulate the reader into thinking of alternatives which could be used in program planning:

1. All Competencies Can Be Worked On Simultaneously

The four competency areas are not necessarily sequential although services could be. A participant can and should make progress in each competency area simultaneously without meeting prerequisites. If any competency target is first, it would come under Pre-Employment.

2. Interrelationship Among Competencies

Some competencies can be acquired through working on other competencies. For example, a participant uses critical thinking and problem-solving skills in making occupational selection or mapping a strategy for job search (in effect, getting "credit" for each).

3. Individualization Requires Negotiation

The individualization process which is the cornerstone of a competency-based system requires a willingness to "negotiate" with the participant and consider alternative paths to completion. Participants develop both an ownership and a better understanding of prescribed competencies through this process.

4. Specific Career Focus of Each Competency

Career interest and active worksite involvement must "drive" acquisition of competence in all four areas. Preparation for competencies must not be an end in itself or conducted in isolation. In other words, a specific participant-identified career or job context should be the organizer for each competency-based learning activity. This would mean that Education Skills would be acquired in tandem with other program activities, particularly on-site work experience.

5. Community Identification of Competencies/Benchmarks

The local community must help identify or ratify the competencies in each area and perhaps suggest additional ones. However, arriving at a single acceptable standard or minimum competency level seems difficult. Each employer should be able to make the judgement if the participant's progress along some kind of scale is acceptable. For example, to say that all program completers who show typing skills on their records will have 50 wpm may not be necessary for an employer who will accept 45 wpm with higher accuracy.

6. Challenging Competencies

If a participant can demonstrate a competency without an intervention, that should be encouraged. Persons with previous skills and experiences can receive an immediate "reward" without going through unnecessary hoops.

7. Competencies Are Not Time-Based

Each participant is likely to take varying amounts of time to prepare for, practice, and demonstrate a competency.

8. Assessment Approaches

The assessment approaches should be selected in order to measure identified competencies. Assessment needs to meet the purposes for which it is designed. No one assessment approach is good or bad in and of itself. The purposes always need to be clear.

9. Participant Self-Assessment

Assessment should always include the participant's self-assessment.

10. Community Certifiers

It is possible and often desirable to use employers in the community as certifiers of competencies that participants acquire on the job. If this technique is used, employers should receive orientation and training.

IV. SUMMARY

Competency-based systems are coordinated, comprehensive programs for defining, assessing, attaining and reporting skills needed for success in the workplace. Many agencies and institutions have employability programs which suffer from a lack of interrelatedness among the various activities. Consequently, employers may receive an inaccurate idea of what the participant can do; participants may not be able to do what employers need or expect; and, while in the program, participants may be receiving inappropriate services.

Competency-based systems avoid such problems by focusing on the full spectrum of needed skills, by defining those skills in terms which are accepted by employers, and by providing individualized assistance in achieving specified performance levels. Competency-based systems also lend themselves extremely well to coordinated services with other agencies.

Appendix A of this guide contains a resource list of persons, programs and agencies which might be contacted for further information on competency-based systems.

Chapter Two: SETTING AND COMMUNICATING COMPETENCIES

I. OVERVIEW

The purpose of this chapter is to present a process and resources for planning a competency-based employability skills development program. The chapter begins with a suggested scenario of the planning process. Next appears a section which details techniques that can be used in carrying out each step of the planning process. Appendices contain a "starter list" of competencies in four areas (pre-employment skills, work maturity skills, educational and occupational skills) and a sample plan as it might have been developed in a particular area.

II. A SCENARIO OF THE PLANNING PROCESS

This planning scenario takes place in a rural setting where the balance of state prime sponsor for CETA programs serves a very large geographic area. The area includes several small towns and the main economic activities are farming, ranching and mining. While the CETA program serves both youth and adults, there has been a priority on employability development for youth between 14 and 18 years of age. In addition to the emphasis that CETA places on youth programs, schools in some of the small towns have begun to include career education in their curricula and most of the high schools offer vocational education to their students.

A competency development effort was initiated by the youth coordinator for the prime sponsor, with support of the Youth Council. The first step was to identify all agencies that provide employability development services or programs to youth, or that have an interest in doing so. Telephone calls to schools revealed an interest by counselors and vocational education teachers. Calls to regional employment service centers resulted in interest by staff in some of the centers and referrals to other agencies such as Chambers of Commerce, Kiwanis Clubs and the regional economic development council. Other contacts were made and an initial list of interested individuals was compiled.

The list included individuals representing the following groups:

- High school and junior high school counselors
- High school and junior high school business, economics and industrial arts teachers
- High school and junior high school administrators, including a few district level administrators
- Chamber of Commerce

- Service clubs such as Rotary and Kiwanis
- Employment service
- Regional (within state) economic development council
- Employers who hire youth
- Corrections staff
- Organized labor
- Migrant representatives
- Other minority group representatives (e.g., Native Americans)

To ensure balanced representation of various groups interested in the project, the youth coordinator added two people to the youth advisory council and asked the group to serve as the planning team for competency development. The two people added were a person from a Chamber of Commerce and a high school teacher. Other groups were already represented on the youth advisory council.

After discussions with the youth advisory council chairperson, the competency development project was put on the agenda for the next meeting. The youth coordinator agreed to find several samples of competency development efforts to review for the council as a starting point.

The coordinator's search for other competency development efforts included contacts with the state employment service, several other CETA prime sponsors, the Office of Youth Programs, Department of Labor, the state career education and counseling coordinator, a regional educational laboratory, the Regional Office of the Department of Labor, and administrators and counselors from a few school districts. Individuals contacted were asked the following questions:

- Have you developed competencies and/or goals and objectives related to employability development? If so, how did you go about it?
- Do you have written material describing how you developed the competencies and/or the competencies themselves? If so, will you send a copy?
- Do you know of any competency development efforts that are exemplary and that we should review? If so, who is the person to contact?

The coordinator learned a good deal about processes during the conversations, and received several documents listing and describing employability-related competencies and/or goals and objectives.

The major objective of the advisory council meeting was to introduce the competency development project and form a draft plan for the effort. The youth coordinator and the advisory council chairperson decided that the plan should include the following sections:

- Objectives for the effort
- Strategies for accomplishing the work, including the information to be collected, techniques for collecting information and procedures for analyzing and summarizing the information
- A list of individuals and groups from whom information would be collected, and techniques for sampling
- A description of the anticipated end product
- A description of how the competencies would be communicated to all interested parties and used by the CETA balance of state prime sponsor
- A listing of resources for the effort
- A schedule for project activities

The youth coordinator was asked by the council chairperson to prepare an introduction for the council that included a review of information collected from other competency development efforts, a description of information-collection techniques, a description of several possible formats for the end product and an initial statement about resources for the effort.

The youth advisory council meetings were four hours long. This allowed council members to drive in, meet and drive back in a single day. The youth coordinator and the advisory committee chairperson decided that two and one-half hours would be devoted to planning the competency development effort and that it would be the top priority item for the meeting.

The youth coordinator introduced the competency development effort. She stated that there is a need to firm up the purpose of youth employability programs: "Resources are becoming scarce and we must be sure that youth are gaining skills, knowledge and attitudes needed to become valued employees. There is a need to be clear about what youth programs will do and to assess the extent to which important competencies are achieved by those who participate in the program. It is very important to be able to explain to youth, employers and others what the program does so that there is no confusion or unrealisitic expectations. It is also important to have a good, clear set of competencies so that various agencies serving the same youth can cooperate in providing a full employability development program rather than overlapping and duplicating services. Developing a clear, complete set of competencies will improve communication among agencies and individuals, reduce confusion about youth employability services, provide the basis for wise use of scarce resources and bring better accountability to the programs."

The youth coordinator went on to describe the various agencies and organizations in the area which either provided employability services or were interested in doing so. She also gave a brief review of competency development efforts from other areas and described several possible data collection techniques. She showed examples of how the final product, a list of competencies and standards, might look.

The chairperson then opened the meeting to general discussion about the project. After a few minutes of discussion the group reached consensus that the project would be valuable and that they should proceed with the planning.

The chairperson described what the plan should include and opened a brainstorming session on specific objectives for the study. The group proceeded through each section of the plan, using a process of brainstorming, clarifying, evaluating, and prioritizing ideas. The group set time limits so that all sections of the plan could be discussed within the agreed two and one-half hours.

By the end of the session, the youth coordinator had enough information to prepare a draft plan. She agreed to draft the plan within the next two weeks and to send a copy to each advisory council member for review and comment. She also agreed to compile the results of the reviews and to prepare the final plan. (Appendix B contains the plan that resulted from this effort.)

III. BUILDING A PLAN

Key Points

A competency-based employability development system must start with broad consensus on what it takes to get and hold a job. Establishing the competencies to be learned through program activities is basic to the ultimate success of the effort. Having simple, clearly stated competencies lets those receiving service, those providing service, employers and the community at large know exactly what is being delivered through the program. A broadly accepted set of competencies helps several agencies share responsibility for employability development of individuals. Each agency may concentrate on a portion of the competencies with full employability development resulting from the combined efforts. This is efficient, it improves cooperation and it reduces overlap. And a good set of competencies allows programs to set and assess performance goals and to communicate the results back to interested individuals and groups. Accountability is achieved in this way.

Planning

Before setting out to establish competencies, a plan should be developed by agency staff. Staff should seek input from interested groups, including those providing service, those receiving service, employers, and the community at large. Existing advisory committees might also provide needed input.

A useful plan usually includes categories like the following:

- Objectives of the effort and expected products
- Procedures to be used in completing the work
- Responsibilities and authority of those who are to participate
- Resources required to complete the effort
- Schedule of activities including completion dates
- A description of how the results will be used

Details of the plan should be chosen to fit local conditions. The plan should outline procedures that will meet local objectives within the limits of available resources.

In preparing a plan, consideration should be given to the following general steps:

INFORM PEOPLE	COLLECT INFOR-MATION	DRAFT INITIAL COMPETENCY SET	VALIDATE THE SET	DRAFT FINAL SET	COMMUNICATE THE RESULTS	REVISE AND UPDATE

<u>Informing people about the effort.</u> This is a crucial step--people who know about the effort are likely to participate in it. The step includes preparing general information about the effort and getting the information to those people you want involved in the work. It may involve news releases, radio and/or TV announcements, targeted mailings, presentations and other techniques.

<u>Collecting information.</u> This step includes organizing the actual work group, preparing descriptive information and instruments, carrying out the planned data collection activities, and organizing and analyzing the data collected.

<u>Drafting the initial set of competencies.</u> In this step the data collected are transformed into a simple, easy to read set of competencies. It involves choosing criteria for including specific competencies in the set, designing the format for the competency set, and writing and rewriting statements until they are easy to understand.

Validating the competencies. This step involves having constituency groups review the initial set of competencies to make sure that the competencies included are the important ones and that the statements are clear. It is also possible to prioritize competencies during the validation process.

Preparing the final set. With information from the validation process as the basis, the final set of competencies is written. This involves deleting, rewriting and reordering the competencies. Final editing and formatting is done and the competency set is prepared for production.

Communicating the competencies widely. Perhaps the most important step in the effort is making sure interested individuals and groups learn about the results of the effort. A campaign to communicate should be conducted through news releases, radio and TV announcements, presentations, targeted mailings and other techniques. People should be told about the processes used to establish the competencies as well as the content of the competency set.

Update periodically. Competency sets should be reviewed and updated at least every three years. Results of the use of competencies should be communicated to those who helped develop them. Conditions and needs change and these changes should be reflected in the competency sets. There may be additions, deletions and revisions. New priorities may appear also. The updating process will probably not involve all of the same activities that resulted in the original set, but enough should be done to assure good input from key groups.

The processes described above are those that a local community should follow to establish a locally relevant set of employability competencies. A good preliminary step is to identify and study competency sets developed by others. These sets of competencies provide a starting point. They introduce ideas and help the thinking of planning groups. Finding and using the work of others is efficient and will probably improve the end result of local efforts. Resources listed in the Appendix can help you locate other competency sets.

Involve the Right People

An hypothesis about setting competencies might be the following: The greater the involvement in the development process, the greater the acceptance of the end product.

Having competencies written by a single person or even a small group is fast and easy, but widespread acceptance is unlikely. On the other hand, involvement of large numbers of people from diverse groups is cumbersome, and makes consensus difficult; yet reaching consensus as competencies are developed will virtually assure acceptance of the final product. Local conditions and resources will determine who should establish competencies and how they should be involved.

As a plan is developed and carried out, consider the following groups as potential sources of input:

- Agency staff
- Staff from other agencies that provide employability services
- Employers--those people who will hire products of the program
- Representatives from various community organizations that have an interest in employability development, such as the Chamber of Commerce, Kiwanis, church related organizations, YMCA, YWCA, Scouts, Urban League, etc.
- Individuals who receive services
- Councils and advisory committees--Private Industry Councils, career and vocational education advisory committees, youth councils, advisory committees and state and local employment service agencies

It is not only important to involve the right people--it is important to decide on specific ways in which various individuals and groups will be involved. Will they brainstorm competencies? Will they review and validate? Will you use a few representatives or the whole group? Will they make decisions or give advice? Will they have responsibilities for data collection? Will they have authority?

The roles, responsibilities and authority of each individual and group of individuals must be decided and communicated. Expectations must be clear and acceptable to those who are involved.

IV. COLLECTING THE DATA

Gathering Information--Four Important Techniques

While it is possible for one person to research the literature and develop a good set of employability competencies, the result of such an effort may not be accepted by key individuals and groups because they were not involved in the process. This section will describe four main methods for involving people through data collection.

Choosing the Right Technique

There is no single best approach to data collection; the best method or combination of methods is the one that suits the local situation. Choosing the right approach should be based on consideration of the following factors:

Purpose of the information gathering effort.	The main purpose is to get the information needed to prepare a good set of competencies. Other purposes may include developing awareness of program efforts, building support for the program and establishing ownership for the competencies developed. If information is the only purpose, the techniques used will probably be different than if information and support are key purposes.
Staff capabilities and time.	It is necessary to determine whether staff members have the background and skill to plan and conduct data collection efforts. Can staff members develop a questionnaire? Can they facilitate brainstorming sessions? Can they analyze and summarize data collected in a survey? Another important consideration is whether staff members have time to devote to data collection efforts. How will work on data collection affect other important tasks? Planning an elaborate data collection process when staff has little or no time to work on the project is unwise.
People to provide the data.	Consideration should be given to the number of different groups from which data will be collected and to the number of individuals within each group to be queried. Few groups and small numbers should be handled differently than many groups and larger numbers.

Time schedule for development.

If the competencies are needed immediately the techniques will be simple and straightforward. If there is more time the procedure can be more comprehensive. Think about how long things take. Allow a generous amount of time as work usually takes a little longer than estimated.

Current status of development.

Is there an existing set of competencies that can be validated or is this a new effort? Validation can be done one way while original development will take different techniques.

Resources available.

What funds, staff time, volunteer services and time and other resources are available to the project? Can consultants be hired? Is there money for printing? Can a trained facilitator be found who will volunteer services? Be sure to know all resources available as they will determine techniques to use.

The local competency development planning team should consider each criterion and choose data collection methods that are appropriate for the situation.

Four Methods

Choosing the data collection techniques best suited for local conditions is not always easy. There are many methods that can be used, but four will be discussed in this section. Adaptations and combinations of the four methods give a wide range of possibilities. The four basic methods follow:

Open Forum.

This technique involves face-to-face interaction of people in groups. Group sessions are usually conducted by an impartial facilitator and the intent is to gain consensus among group members.

Survey.

Surveys are usually paper and pencil instruments on which individuals express their opinions about a number of statements.

DELPHI.

This is a special type of paper and pencil survey that results in group consensus on various statements after three rounds of responses. It is a technique through which consensus is built without face-to-face interaction.

Q-Sort.

This technique involves rating and/or rank ordering a group of statements according to importance. This is accomplished by sorting a deck of cards in which each card contains one statement. Once the sorting is complete, the participant records the relative importance or rank on a response sheet.

OPEN FORUM

The open forum approach to competency development involves one or more groups of people defining a competency area, competencies, performance indicators and standards through open discussion. The group discussion is usually conducted by a person trained in group facilitation. In this approach, the definition comes primarily from the background and biases of the people involved in the discussion. The group usually starts with a blank page and works through brainstorming, clarification, prioritization and standard-setting steps. The result is consensus on a set of competencies. A major benefit is ownership of the set of competencies developed out of intense involvement in the development process. The major disadvantage is that the competency area may not be designed comprehensively because of limited background and narrow biases on the part of the participants.

Brainstorming

1. Introduce the topic with a brief description of the four competency areas and give the rules for brainstorming.

2. Set the expectation that the group will be working within one (or more) competency areas.

3. Ask people to give their impressions about the needs (or failures) of potential clients in the competency area under consideration. Clients may be youth or adults and may be handicapped, minorities, etc.

4. As individuals talk, write key ideas on a large sheet of paper and paraphrase key points after each individual talks.

5. After each individual has made a general statement, ask the group to describe some skills, knowledges and attitudes the clients should demonstrate in the area.

6. List all ideas without evaluating them. Be accepting of input from everyone. Seek input from those who seem hesitant.

Clarifying

7. When the brainstorming has slowed, go back through the entries and get additional explanation and description as needed so that everyone has a common understanding of each entry.

8. Attempt to condense, simplify and combine without losing main ideas (important competencies).

9. Rewrite competency statements as necessary to bring them into good understandable form.

10. Continue to work at this process until consensus is reached.

Prioritizing

11. Ask individuals to decide which of the competencies are the most important and to present their choices and rationale.

12. Get opinions from everyone and tally opinions on the chart.

13. Continue discussion until consensus is reached on the top seven to ten competencies.

Setting Standards

14. Taking the competencies one at a time, ask the group to list the behavior clients should exhibit if they are to be considered competent. This will result in performance indicators.

15. Repeat brainstorming, clarification and prioritizing steps for each competency until consensus is reached on performance indicators.

16. When performance indicators have been agreed upon, ask the group to list standards (benchmarks) for each indicator.

17. Repeat the processes until consensus is reached on standards.

The open forum approach to setting competencies may be time consuming. It may take several meetings to refine areas, list competencies and performance indicators and set standards. The time in between meetings, however, is useful in clarifying ideas and issues. It may also be a good idea to work with several smaller groups and synthesize the results into one set of competencies.

In considering the use of an open forum for data collection, several factors should be kept in mind:

Participants must be prepared.

People who come together for the first time must go through some group-building exercises before they will work well together. They must get to know each other, learn the perspectives and biases of various people and begin to feel comfortable with others in the group. The group must also be introduced to the purpose of the session and the expected outcomes. They must have a chance to question the effort, get answers and feel that their contributions will make a difference. Preparation is very important and a good group facilitator knows how to get people going.

Discussions can get bogged down in definitions.

In planning for an open forum, key terms should be defined and definitions shared with the group. It is very important that the group not stall because people disagree on definitions. Keep the group moving.

Constraints on participation.

There may be some major constraints on participation by key people--employers, for example. People may not be able to participate because of distance. Others may be able to spend only one or two hours in a meeting when more time is needed. Still others may be able to attend one meeting but not a series of meetings.

Select people carefully.

Those chosen to participate should agree to full involvement. This means that they will be able to attend all meetings for the full time and that each will attend personally rather than sending a representative. It is also important to select people who are open and have no major "axes to grind." Each person will have an individual perspective and biases, but must be willing to listen to others and accept their ideas.

Approach people carefully.

When people are asked to volunteer their time to an effort such as competency development, they must be asked in a way that will make them respond positively. They must be given enough information to know what the project is about and have a clear understanding of what their role will be. Also, and perhaps most important, they must be made to feel that their involvement is important and that their contributions will make a difference.

The open forum, if done well, can result in excellent sets of competencies and strong commitment to the competencies by those involved in the process. The people involved may form an advocacy group for the effort. They can spread the word back to others in the group they represent.

On the other hand, it is difficult to reach consensus when a group is composed of people from diverse groups. The biases may be too strong to overcome. It takes a skillful facilitator to keep a group moving toward common ends.

SURVEY

A survey is most often a paper and pencil technique for collecting data. Telephone surveys and face-to-face or group interviews are alternatives to paper and pencil methods. A mailed survey instrument consists of directions and a number of specific statements to which people respond. The response is made by checking or entering a number in space provided. The respondent shows agreement or disagreement or indicates relative importance or value of the statements. In some cases, statements are rank ordered in a survey. The survey instrument is usually sent to many people in the mail; they are asked to respond and return the instrument via mail.

Conducting a paper and pencil survey involves the following steps:

1. Develop the survey instrument--a questionnaire or opinionnaire.
2. Pilot test the instrument to make sure it elicits information as expected.
3. Duplicate the final instrument.
4. Identify the audience for the survey and get addresses.
5. Send survey instruments.
6. Send followup notices to those who do not respond.
7. Organize survey responses, compile data, analyze and summarize information.
8. Prepare a report.
9. Send results to those who participated along with a letter of thanks.
10. Communicate results broadly throughout the community.

In conducting a paper and pencil survey by mail several important facts should be kept in mind.

- Survey instruments take time and know-how to develop. Writing directions, statements and questions for a survey takes a good deal of effort. Many people will respond and each must have a clear understanding of how to respond as well as what each statement and/or question means. If the survey is unclear in any way, the data gathered may be useless.

- The response may be limited. Many people do not like to respond to surveys. Only a percentage of those who receive a survey instrument will send it back and some people who do send it back will leave some items unanswered. Account for loss of useful survey instruments in your plan and be sure to allow time to send followup requests and perhaps second copies of the instrument.

- Compiling, analyzing and summarizing information is time consuming. When a survey instrument contains several items, and instruments are received from a large number of people, processing the data can be very time consuming. Allow for adequate time to hand-tabulate or to put the data on a computer. It also takes a good deal of staff time to analyze the information and prepare a survey report.

- Schedule the survey so that people are available to respond. This is particularly important if the target audience includes people from public schools. If the survey comes in the summer, it will lie around until school opens in the fall. There may also be other scheduling problems to consider, such as exceptionally busy times around holidays and common vacation periods.

The main advantages of surveys are that a good deal of information can be gathered from a large number of people and that information can be analyzed to show areas of agreement and disagreement among key groups of people. Some of the disadvantages are that constructing the instrument is difficult and response rate may be low. Processing the data is time consuming and people may respond in a way they think will be acceptable to others rather than in the way they actually feel.

DELPHI TECHNIQUE

The DELPHI technique is useful in gaining group consensus without face-to-face dialogue. It is a three-round survey that begins with a series of statements and asks for opinions of individuals about each statement. The results of this first round are summarized and fed back to each participant. Round Two asks individuals to reconsider their first responses after seeing the results of the group and possible modifications of the statements. Again, the results are summarized and returned to the participants. The third round once more asks individuals to reconsider their responses. The technique has been proven successful in gaining group consensus. The major benefit is that consensus can be reached efficiently. The major problems of face-to-face interaction are overcome. The major disadvantage is that collecting and analyzing the data can be time consuming and costly.

Steps in the DELPHI Process

1. Design initial questionnaire.
2. Select group participants.
3. Conduct Round One survey.
4. Analyze results; feed back to each individual the responses of the group and their own responses.
5. Ask group members to reconsider their first responses (Round Two survey).
6. Analyze the results and feedback to each individual the responses of the group and their own responses.
7. Ask group members to reconsider their responses (Round Three survey).
8. A strong consensus should have been reached.

The advantages and disadvantages of the DELPHI technique are similar to those for other surveys. The major differences is that, through the three-round process, consensus is reached on the statements in the survey. This is a powerful advantage.

While the DELPHI technique has many positive features, a few cautions are in order.

- Designing DELPHI instruments is not simple. The items must be written as statements that describe situations, and people may disagree widely on these statements. One such statement might be "individuals who are considered good employees come to work on time every day." Another example is "Good workers do more than their share of the work."

  It is also necessary for the statements to be parallel in structure and to use language that will be understood and interpreted the same by all respondents.

  Finally, the instrument should include one or more items for every area where there is potential conflict. If some areas are omitted, the final set of competencies and standards may not be acceptable to the participants.

  It is essential to pilot test the instruments with a few people to be sure directions are clear and that the statements have a common meaning.

- Selecting the participants. Choose people who represent various viewpoints on employability development. Have equal representation so as not to bias the results. Be sure that each individual agrees to participate in all three rounds--drop-outs will affect the end result. Once the DELPHI is started, keep after each person until he or she responds. This will take some time, effort and diplomacy.

- Analysis and feedback must be done quickly. Prepare the revised instrument, stating numbers of participants who responded each way and showing changes, and get it back out soon. Keep the people involved once the process starts. Lengthy delays will alow people to forget about their agreements and their views.

Q-SORT TECHNIQUE

The Q-Sort technique is a type of survey that people respond to by manipulating a deck of cards, with each card containing a statement. In the case of developing employability competencies, the statements would be specific competencies. The sorting of the deck is done in order to place the statements in stacks representing various degrees of importance. Subsequently, respondents can sort within each stack to rank order the competencies. The deck or decks can be sorted several times in order to get respondents to assess relative importance of various competency statements. After the sorting is complete, the respondent indicates on a response sheet which cards are in each stack and rank order of cards within a stack. This makes the cards reusable.

The Q-Sort can be sent to participants via mail or conducted in a group setting. The procedure for conducting a survey using the Q-Sort method follows:

1. Determine the list of competencies to be included on the cards.
2. Prepare a master set of cards, with one competency statement on each card, and a response sheet.
3. Duplicate enough sets of cards to conduct the sort process with the number of people in the sample.
4. Identify the people to be included in the survey.
5. Ask each person if he/she will complete the survey.
6. Send the card decks, directions and response sheet.
7. Collect the response sheets and card decks if the decks are to be reused.
8. Organize, compile, analyze and summarize the data.
9. Prepare a report and send it to all participants.
10. Communicate the results to interested groups and the community at large.

In conducting a survey using Q-Sort, it is important that the directions for sorting and for recording responses be simple and clear. Misunderstanding of either will result in unusable information. The Q-Sort has the advantage of interest in manipulating the cards and the novelty of the approach. It also allows people to sort and resort until they reach their final opinions. The disadvantages are that the cards are costly to duplicate and it takes a good deal of time to sort a deck containing more than a few cards. It also may be difficult for people to discriminate between various competencies in order to rank them. The difference in importance between two competencies may not be great enough for a person to rank one higher than the other.

The data collection techniques should be selected to reflect local conditions. Combinations and modifications may be appropriate. The main concern is that objectives for the competency development effort be set and that the techniques chosen result in accomplishment of the objectives set.

V. FORMAT FOR THE FINAL PRODUCT

To be effective, the completed set of competencies must be easy to read and understand. It must be formatted in a way that allows it to fit easily with other program documents such as the Employability Plan and Record (EPR). The final copy must also have an interesting visual quality so that people want to pick it up and look through it. A good deal of the impact will be lost if the quality is such that people do not use the competencies. Giving the final product appropriate quality involves decisions about levels of detail, style of expression, visual quality and technical accuracy.

Levels of Detail

School employees have been writing goals and objectives for student learning for decades. The level of detail runs from very general, global goals to extremely specific behaviorally stated objectives. For example, the goals of education for one school district include broad statements such as the following:

- Students will gain the skills for continuous learning including reading, writing and computing.

- Students will gain the skills needed to contribute to society as an economically independent citizen.

At the other end of the spectrum are behaviorally stated objectives such as the following:

- Given parts for a small engine, wrenches and other necessary tools, and an assembly drawing of the engine, the student will assemble the engine within 15 minutes with 100 percent accuracy.

- Given a list of 15 job titles and a list of three occupational fields, the youth will match the job titles to occupational fields with at least 80 percent accuracy.

The general goals cover broad fields and can be interpreted differently by various people. The behaviorally stated objectives cover specific tasks and will probably convey the same meaning to everyone who reads them. The issue is communication, and the level of abstraction and detail chosen must communicate well to a range of audiences and have as little bulk as possible. Writing competency statements is no different than writing objectives. The levels of abstraction and detail chosen must communicate the intent of the program in clear, easy to understand language.

The style of expression used in writing goals, objectives or competencies ranges from outline form to elaborate individual statements. A style should be developed that is comfortable for staff to write and that communicates to the various audiences that will read and use the competencies.

<u>One Format: An Example</u>

While the format--the level of detail and style of expression--should be developed locally, ideas for the format should be collected from other sources to serve as a starting point. One such example follows. It contains three levels of detail and is written in short, easy-to-understand statements. The three levels are <u>competencies</u>, <u>indicators</u> and <u>benchmarks</u>. The first two levels, competencies and competency indicators, tell what general behaviors you are seeking; the third level, benchmarks, states <u>how well</u> you want youth to perform those behaviors.

<u>Competencies</u>

Competencies are general behaviors that participants are expected to demonstrate. Competencies result from the question, "What are the main skills, knowledge and attitudes a person should have if he or she is to be considered a valuable employee?" Competencies should be clear, brief and simple; for example:

Participants will:

- Demonstrate dependability
- Demonstrate appropriate work attitudes
- Describe their personal characteristics that relate to work
- Describe job market conditions
- Solve on-the-job problems
- Use common tools and equipment

Competency Indicators

Competency indicators define the specific behaviors that demonstrate development of a competency. These behaviors become the basis for setting standards and assessing achievement of competency development. Competency indicators are the result of asking the question, "What behaviors will indicate that a person has attained competence?" The competency indicators should include all of the important behaviors needed to judge a person competent. A few compentency indicators follow.

Participants will:

Competency	Indicators
Demonstrate appropriate work attitudes by:	-- Showing interest in the job -- Observing regulations, policies and procedures -- Caring for the property of others and the employer -- Using correct communication channels -- Doing an appropriate share of work -- Showing a willingness to learn
Explain conditions associated with work by:	-- Describing general characteristics of jobs (routine nature of work, need for on-the-job teamwork, need for productivity and quality control, relationship between work and leisure, etc.) -- Describing work environments (outside, inside, office, factory, physical surroundings, psychological atmosphere, etc.) -- Describing the relationship between education and experience, and job entry and advancement

Benchmarks (or Standards)

Benchmarks are the detailed standards of performance set on competency indicators. Benchmarks must include all of the important standards associated with each competency indicator. Benchmarks result from the question, "How well must a person perform each aspect of a competency indicator to be considered competent?" It is possible for an employability program to set benchmarks. This would result in benchmarks that are generally applicable to many employers but not specifically applicable to any one employer. It is also possible to allow individual employers to set their own benchmarks. This would result in many different sets of benchmarks, each applying to a specific employer, but none that are generally useful. A middle ground is also possible. Employers could agree on some standards that apply generally. Standards for a broad occupational cluster might be possible.

A few examples of benchmarks follow:

Competency	Indicators	Benchmarks			
Demonstrate interpersonal skill by:	Describing appropriate work attitudes to the following standards:	Talks about the job in positive ways	3	2	1
		Talks about rules, policies and procedures and why they are important	3	2	1
		Talks about what a fair share of work is and why each person must do a fair share	3	2	1
		Asks questions that lead to new learning on the job	3	2	1

Scale: 3 = nearly every day, but at least several times a week
2 = occasionally, once or twice a week
1 = almost never, less than once a week

If a set of competencies is well developed, it is possible to show as much or as little information to participants and the community as necessary. A list of competencies alone should show the overall intent of the program and not be a bulky document. If employers want to know what the program is doing about work attitudes, for example, it is possible to pull out a few competencies, indicators and benchmarks to show the employer. Such a set of competencies has many uses and can take many forms. In general, however, it provides a roadmap for the program.

Starter Lists

Competency sets should be developed locally, but ideas from which to start often help. Appendix C contains sample starter lists of competencies in four areas. There is no claim that the sample lists are complete. They are only examples.

The lists include competencies and competency indicators. Benchmarks (standards) are not included as the lists would become too bulky and benchmarks should be developed locally.

Visual Quality and Technical Accuracy

If the competency set is to be widely distributed and used, it is very important that the visual quality be inviting. People tend to pick up and read printed materials that are visually appealing. Visual appeal can be attained through good layout, use of illustrations, bold headings and more than one type style.

Technical accuracy has to do with correct grammar, spelling and typing. Using an editor for this purpose is important and not expensive. Mistakes in documents that are circulated widely cast doubt on the program's ability to deliver quality developmental experiences to youth. Make the final product right.

VI. JUDGING THE WORK

As competencies are developed it becomes necessary to have criteria against which to judge their quality. The following is an example of a set of criteria. Local programs should modify the criteria to suit local conditions.

Criteria for Competencies

1. Does the set of competencies include all of the general behaviors that youth are expected to demonstrate? Is the set comprehensive?
2. Is the set of competencies manageable? Can youth attain the competencies? Can the set of competencies be achieved with available resources?
3. Does each competency describe an important skill, knowledge or attitude? Should each competency be included?
4. Is the general behavior described clearly? Will people understand what is meant by the competency? Will there be consistent understanding?
5. Is the competency free of wording that suggests some social, occupational or life roles should be valued more than others?
6. Is the competency applicable across lines of sex, socio-economic status, race, rural and urban settings, and religious persuasions in your community?

Criteria for Indicators

1. Does each set of competency indicators include all of the specific behaviors that youth must demonstrate in order to show achievement of the competency? Is the set comprehensive?

2. Can youth attain the competency indicators?

3. Does each competency indicator represent an important skill, knowledge or attitude? Should each be included?

4. Is each competency indicator expressed clearly? Will people understand what is meant? Will the understanding be consistent?

5. Is it possible to set benchmarks for the competency indicator? Can an assessment approach and measurement device be found or developed?

Criteria for Standards (Benchmarks)

1. Is there a standard for each indicator?
2. Is each standard expressed clearly so that it is interpreted consistently by program paticipants, employers and others?
3. Is each standard acceptable to employers?
4. Does each standard set a level of performance that is attainable by participants?
5. Is the achievement of each standard measurable?

VII. TELLING THE STORY

Developing a good set of competencies is rewarding. To have a complete, well-formatted, technically correct and visually appealing set of competencies is good. But it is only the beginning. It is essential that the competency set be used to communicate the intent of employability development programs to key individuals and groups. Also, be sure to let people know how competencies are working after they have been employed over specific periods of time. Tell the story!

Who to Tell

There are a number of potential audiences for the story. The specific groups to tell should be chosen locally, but consideration should be given to the following groups:

- Staff from the local employability program
- Staff from non-public alternative schools and other agencies that provide employability related programs and experiences
- Staff from public schools
- Employers in both public and private sectors
- Individuals who receive employability services
- Parents of youth who receive employability services

- Elected officials at local, state and national levels
- Local, state and federal administrators

Communication Techniques

Volumes have been written on techniques for communicating with various target audiences. This section will briefly describe a few of the techniques most commonly used to tell the story about employability development programs.

Targeted mailings. Sending a well-written letter to key individuals or groups is an effective technique, particularly if it is personalized. The letter should be relatively short (one page only) and give a little information about the process used to develop the competencies as well as a few key ideas about the competency set. A competency set in short form should be included as an enclosure.

News articles. Short articles describing the competency development process and the competency set is a way to spread the work widely. The way to get this done is by establishing a contact with a reporter or other newspaper employee. News articles can get published in either of two ways. The first is to prepare a news release and send it to the newspaper. The second is to get a reporter to interview people and write an article for publication. Articles prepared by reporters are more likely to be printed than are pre-written news releases.

Radio and television stories. It may be possible to convince a radio or television station to cover employability development efforts as a news item or to interview key staff. Most radio and television stations have local talk shows and employability may be an appropriate topic. Public service announcements are easy to prepare, reach a wide audience and are free.

Personal contacts. In some cases it may be good to personally deliver a competency set to an individual. This type of personal attention works well with many influential individuals. It makes them feel important and it gives you a chance to tell the story first-hand.

Presentations.

Another good way to personally give the results of competency development efforts is through presentations to key groups. If this is done, preparation should be thorough so that it is crisp and informative.

Combinations of communication techniques should be used so that all target audiences are reached. The specific approach must fit local conditions.

Telling the story of a competency development process and final product should be taken seriously. A plan should be developed that includes the following sections:

- Objectives of the communications effort
- Target audiences to be reached
- Communication techniques to be used with each audience
- Materials needed to carry out the approach
- Techniques to assess the effect of the effort

When the plan is complete, move ahead by developing the required materials, including letters, news releases, short competency sets, descriptive brochures, transparencies and other audiovisual aids. Review materials to be used in the communication effort. Quality control must be strict. When the materials are ready, the planned activities should be conducted, the impact assessed and adjustment made if the objectives have not been achieved.

VIII. REVIEW AND RENEW

Competency sets should be reviewed and updated about every three years. Conditions change, priorities change and the needs of people change. Keeping competency sets current is essential if the program is to remain vital.

The process for updating is the same as for the initial development. The big difference is that a set exists to work on. The need is not to remake the set, but rather to review, confirm and/or change the existing set. Updating will take much less time and resources than the initial work. But updating is important.

Chapter Three: ASSESSING COMPETENCIES

I. OVERVIEW

Assessment is conducted to determine a program participant's readiness for further training or employment experiences. Every assessment activity should be undertaken to help reach a decision (e.g., "Can the participant read at a ninth-grade level?"), and if it is not clear what decision is being made, then assessment should probably not be done. The more assessment is focused on a clearly defined competency, the easier it will be to relate results directly to progress in achieving the desired competency.*

> Paul is learning to prepare a resume that includes a list of skills he has. An assessment method that is closely linked to this competency would be for Paul to prepare a sample resume.

It is important to keep in mind that no assessment instrument gives perfectly accurate information on the level and nature of an individual's competency. This is particularly true for individuals whose competency level is borderline. For example, an employer may set a cutoff score on a clerical skills test. However, if this score is rigidly adhered to (i.e., any person falling below it is not considered for the job), some competent candidates may be eliminated and some incompetent ones hired who fell just below or above the cutoff score, respectively. If the employer gave another form of clerical test to those examinees who fell within a few points of the cutoff, he or she might well find that some examinees would be classified differently on the second test. Thus, results of any assessment should be viewed with a healthy skepticism. Wherever possible, assessment data should be supplemented with other kinds of available information.

One further caveat: the assessment approaches discussed here are geared toward obtaining information on individuals rather than groups because we are interested in learning the status and progress of individuals in reaching their individual competency goals. Group information is needed for <u>program</u> level planning and evaluation, and procedures for these activities are discussed in Chapter Four (Managing A Competency-Based Program).

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*The assessment techniques dealt with in this chapter are tied directly to pre-employment, work maturity, education and occupation competencies. Assessment of general aptitudes or interests may help to form an initial training plan, but instruments of this type are not a major focus of this chapter.

II. PURPOSES FOR ASSESSMENT

In employment and training programs, assessment of competencies falls in one of three categories, each intended to serve a different purpose:

- o Initial planning assessment is designed to help determine an incoming trainee's level of competency so that appropriate training or services can be planned.

- o Assessment for management of instruction and training is used by instructors as they make frequent decisions about the next activity trainees should engage in to increase their proficiency on the competency.

- o Assessment for external reporting (most frequently to employers) is used to make decisions about the readiness of a potential employee for a given job.

It is crucial to know the purpose of the assessment before it is done, since the procedures and instruments are likely to vary depending on which type of decision is to be served.

Instruments used for initial assessments usually need to cover several competencies with little detailed information being provided on each. For example, a general reading test may be sufficient to tell a program administrator that the examinee does or does not need help with reading skills. The administrator may not need detailed information on specific reading skills (e.g., identifying main ideas, drawing inferences, vocabulary). However, the instructor (for instructional/training decisions) may need a test which does give information on whether the examinee can identify main ideas or knows certain vocabulary.

Assessment for external reporting needs to be clearly oriented toward the decision to be made. For example, if an employer states that reading skills are needed on the job, it is of little use to receive a score on a standardized reading test. What is needed is information on whether the potential employee can perform the reading tasks required on that job. Therefore, the assessment instrument needs to be based on reading tasks relevant to the specific job under consideration. Since these are very serious decisions (employment or not), the test needs to be well-developed to ensure that it is both reliable and valid.*

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*A reliable instrument is one which gives consistent information from one time to another or from one instrument to another designed to measure the same competency. A valid instrument is one which measures precisely the competency it is designed to measure.

To summarize:

Purpose	Characteristics
Initial asssessment	o Used by program administrators o Covers broad competencies or key competencies which will assist in training or instructional placement o Will vary depending on characteristics of the training/instructional options (needs to be matched to available options)
Instructional/Training Decisions	o Used by instructors/trainers to make frequent decisions about the next instructional activity needed o Focuses on competencies at a more detailed level than needed for initial assessment o May be less rigorously developed since the decisions made could be quickly modified if incorrect
External Reporting	o Used by employers or their agents to determine examinee's appropriateness for a job o Must be clearly tied to relevant job tasks o Must be technically well-developed because of the seriousness of the consequences of an inaccurate decision

Figure 3-1: Summary of Assessment Purposes and Characteristics

III. ASSESSMENT METHODS

Numerous assessment approaches are available, but there are only a few essential differences among them. These differences revolve around the three basic components of any assessment: stimulus, response and scoring method. In all assessment methods, some stimulus is given to the examinee (e.g., a paper with questions on it or parts of a machine needing to be assembled) which requires some response (e.g., writing the answers to questions or assembling the machine) which will be scored according to some established criteria (e. g., answers given are compared to a list of previously established correct answers, or the machine's smooth and efficient operation is judged).

Various combinations of stimulus, response and scoring methods have evolved over time for measuring competence. Three basic types of assessment methods exist: (1) behavioral observation; (2) product reviews; (3) oral or written questions.

The major factors which determine the appropriate method to select are: (1) the nature of the competency (a skill, knowledge or attitude); and (2) whether the competency involves a process people use or a product they produce. Each assessment approach discussed below highlights these factors.

Behavioral Observations

When a competency focuses on the application of a skill, knowledge or attitude, the most appropriate type of assessment is frequently behavioral observation. This is particularly true if the competency relates to a process outcome. For example, many speaking and listening skills can only be assessed accurately by observing a person in a situation requiring demonstration of the skill. Asking people if they listen carefully when the boss is giving instructions is less accurate a measure of their listening skills than observing them in a situation requiring listening.

Two general situations for behavioral observation exist: (1) on the job and (2) in simulated situations. Certain competencies, e.g., punctuality, can best be observed on the job. Others, such as participation in group discussion, can be observed in a simulated situation. The major advantage of on-the-job observation is that it has greater fidelity to real life. Its major disadvantage is that it does not allow the amount of control of the situation that may be necessary to assess competencies accurately . Of course in some situations such control is unnecessary or undesirable, as in assessing "punctuality." Simulated situations have just the opposite major advantage and disadvantage: they are not as true ~~to real~~ life but they allow greater control of the situation, thus improving the assessment's accuracy. Both types have the disadvantage of usually being expensive to develop and conduct.

Product review

In many cases, the presence of skills can only be demonstrated by having the person produce a product, e.g., write a report, reassemble a carburetor, build a bookshelf. The assessment then entails use of a rating form or checklist to determine the quality of the product.

While a paper and pencil test may show whether a person has prerequisite knowledge, the product review shows whether the person can actually produce a product. For example, someone may show knowledge of correct spelling, punctuation and sentence structure via a multiple choice test. But not until the person actually writes (for example) a report which is reviewed against established criteria do we have confidence that he or she has adequate writing skills for a given job.

The disadvantage of the product review assessment method is that many products are very expensive or time consuming to produce and, of course, many important competencies do not lend themselves to this approach.

Oral and Written Questions

The two basic types of oral and written question formats are (1) open-ended questions where the respondent generates an original answer and (2) multiple choice questions where the respondent selects from among two or more possible answers. When the person whose competency is being measured has limited reading skills and reading is not the skill being measured, questions can generally be given and responded to orally.

Oral or written questions are best used for assessing whether people have acquired knowledge or can apply knowledge by mentally solving a problem. Questions can also be used to give an indication of attitudes and interests, but such assessment results must be very carefully interpreted. Attitudes and interests can fluctuate markedly from day to day or situation to situation. And written or oral questions of attitude and interest are not always accurately responded to because people tend to give socially acceptable answers.

The major advantages of open-ended questions are that (1) they are usually easier to develop than multiple choice ones, (2) they allow for people to give a full range of responses, and (3) they are more efficient and inexpensive than behavioral observation or product review. The disadvantages are that (1) they require more response time, (2) people are often not motivated to give the extent of response desired, (3) answers are time consuming to analyze, and (4) they require more expertise on the part of the analyzer than would be true for multiple choice questions.

The main advantages of multiple choice questions are that they (1) can be used to test knowledge across many levels of complexity, (2) can be used to measure several different competencies with one instrument, (3) are efficient, (4) are easy to score, (5) can be scored by nonprofessionals or by machine, and (6) can provide valuable diagnostic information. The main disadvantage of multiple choice questions is that examinees with low reading ability or limited experience taking tests will encounter problems answering them. In such cases, scores would reflect a lack of adequate reading skill rather than a degree of knowledge. Multiple choice questions do require a person to choose from among a limited set of responses rather than creating their own. In real life such restricted options are often not given. Multiple choice questions also may be carelessly responded to and, in the case of attitude measures, are likely to be responded to according to what is socially accepted.

Figure 3-2 summarizes the characteristics of the various assessment methods and Figure 3-3 gives examples of the types of competencies that are likely to be assessed by each method. The example competencies are drawn from the sample starter list in Appendix C.

IV. DEVELOPING ASSESSMENT INSTRUMENTS

Descriptions and Guidelines for Development

Four basic types of measurement instruments can be used to gather data (the term "measurement instruments" is used to mean the form for recording responses of the person being assessed):

- o Checklists
- o Rating Scales
- o Open-Ended Questions
- o Multiple Choice Questions.

Checklists and rating scales are used for behavioral observation and product review assessment. The checklist or rating scale directs the observer or product reviewer to the aspects of the situation or product to which they should be attending.

Open-ended and multiple choice sets of questions can be presented to the respondent orally or in writing. Responses may be given orally or in writing. The choice between oral and written depends on the skills or knowledge being assessed and the oral and written skills of the respondent. For instance, consider an instrument initially designed to be given in written language. If the skill to be demonstrated were the ability to read, the instrument would not be given orally. But if the purpose were to assess computational skills, the assessment could usually be done orally without invalidating the assessment. The following pages describe each of these methods and provide guidelines for their development.

Before preparing checklists and rating scales, one should think through the structure of the situation in which they will be used. The questions in Figure 3-4 below will assist in this step.

Figure 3-4: BEHAVIORAL OBSERVATION AND PRODUCT REVIEW DEVELOPMENT GUIDE

Stimulus Description

1. What form will the situation take?
   ______ a. simulated situation
   ______ b. on-the-job situation

2. What specific tasks will the examinee be called upon to do, and what will the instructions be?

3. How will the tasks be described to the examinee?
   ______ a. no description beyond that which is regularly provided as part of the actual work environment
   ______ b. written description
   ______ c. oral description
   ______ d. other (specify) ______

4. Will the criteria of acceptable performance be made explicit as part of the exercise?
   ______ a. yes
   ______ b. no

Response Description

1. What is to be evaluated?
   ______ a. a product
   ______ b. a process

2. How much evidence of proficiency will be gathered?
   ______ a. one exercise, one time
   ______ b. multiple exercises, one time
   ______ c. multiple exercises, over a period of time

3. Will the examinee be aware that the evaluation is taking place?
   ______ a. yes
   ______ b. no

4. Describe the actual nature of the desired response.

Scoring Description

1. What will be rated?
   ______ a. overall performance
   ______ b. individual components of performance

2. State the specific scoring criteria.

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EMPLOYEE PROGRESS REPORT

PARTICIPANT ______________________ JOB TITLE ______________________

HOST AGENCY ______________________ DATE ______________________

WORK MATURITY

The Northwest Services Council's assessment system is based on a participant's successful demonstration of basic and advanced competencies. In order to document the progress of youth toward achieving specific competency levels, the following rating tool is a way in which a participant's competencies in the skill area of Work Maturity can be measured and communicated.

Work Maturity is defined as the ability to apply skills on the job in a manner that meets employer expectations with regard to basic employee behaviors and responsibilities. Work Maturity skills are broken down into ten basic *"Competency Categories"*: a statement describing the competency. Each *Competency Category* has several "indicators", or descriptors, which are activities or behaviors which are considered critical to the Work Maturity skill area.

INSTRUCTIONS FOR COMPLETING

A. Read the *Competency Category Statement* and examine each indicator listed below the definition.

B. Make a determination of whether the participant is satisfactorily performing that indicator, or needs to improve and enter a check (✓) in the appropriate space.

C. Rate each *Competency Category Statement*, based on all of the indicators, using the rating scale below. Enter a 1-6 in the rating box for each *Competency Category*.

RATING-INTERPRETATION

6 - Superior Proficiency - Demonstrates above standard proficiency and a very high degree of consistency of performance.

5 - Satisfactory Proficiency - Demonstrates satisfactory proficiency and consistency on all indicators.

4 - Approaching Satisfactory Proficiency - Has mastery over most indicators and is attempting to achieve higher consistency of performance.

3 - Partial Proficiency - Has mastery of some indicators/tasks associated with this competency.

2 - Marginal Proficiency - Participant beginning to learn the basic tasks associated with this competency or demonstrates elementary proficiency from prior experiences.

1 - No Proficiency - Is entering activity with no relevant prior experience associated with this competency or demonstrates little progres in developing proficiency.

Add any comments you may have which could provide additional information on participant performance of these competencies.

RELIABILITY: *Shows responsibility and dependability in carrying out tasks.*

	Satisfactory	Needs Improvement	
1. On the job regularly	____	____	
2. Is prompt.	____	____	
3. Notifies if late/absent	____	____	
4. Completes tasks on time.	____	____	
5. Volunteers extra effort when necessary	____	____	RATING

SELF-MANAGEMENT: *Maintains personal life in order to function well at work.*

	Satisfactory	Needs Improvement	
1. Maintains physical, mental health.	____	____	
2. Is not tired, drunk or stoned.	____	____	
3. Is clean and neat.	____	____	
4. Has adequate transportation.	____	____	
5. Has satisfactory housing.	____	____	
6. Settles personal problems outside work.	____	____	RATING
7. Has adequate child care.	____	____	

PERSONNEL FUNCTIONS: *Shows understanding of the employer's personnel policies, practices and procedures.*

	Satisfactory	Needs Improvement	
1. Understands employment conditions.	____	____	
2. Understands work standards and schedules.	____	____	
3. Understands personnel procedures	____	____	
4. Relates appropriately to supervisor	____	____	
5. Keeps work records.	____	____	RATING
6. Keeps to dress and safety requirements.	____	____	

SUPERVISION: *Accepts guidance, criticism and assignments from supervisor.*

	Satisfactory	Needs Improvement	
1. Follows instructions.	____	____	
2. Requests clarification when needed.	____	____	RATING
3. Negotiates differences of opinion.	____	____	

SUPERVISION - Continued

	Satisfactory	Needs Improvement
4. Participates in training.		
5. Accepts guidance/correction.		
6. Willing to accept additional tasks.		

RATING

TASK MANAGEMENT: Plans and organizes job responsibilities.

	Satisfactory	Needs Improvement
1. Prepares/plans work.		
2. Sets up materials/tools.		
3. Works consistently to complete tasks.		
4. Uses appropriate techniques/tasks.		
5. Uses time wisely.		
6. Cleans up.		

RATING

PROBLEM SOLVING: Solves routine and non-routine problems in carrying out job tasks.

	Satisfactory	Needs Improvement
1. Recognizes and analyzes problems.		
2. Doesn't blame others.		
3. Identifies early signs of problems.		
4. Consults with others, gathers information.		
5. Considers alternatives.		
6. Changes bad habits.		

RATING

MOTIVATION:

	Satisfactory	Needs Improvement
1. Is willing to learn.		
2. Does all tasks.		
3. Inquires about job and related work.		
4. Volunteers to learn new skills.		
5. Seeks opportunities to learn.		
6. Practices skills/requests feedback.		
7. Seeks additional work when assigned tasks completed.		

RATING

(OVER)

COMMUNICATION: *Sends clear messages and is able to correctly understand the messages of others.*

	Satisfactory	Needs Improvement	
1. Uses work terms correctly.	______	______	
2. Communicates completely and directly.	______	______	
3. Checks for understanding of their own communication.	______	______	RATING
4. Listens and checks others' communication.	______	______	

RELATIONSHIPS: *Has constructive and proper relationships with other workers.*

1. Is considerate of others.	______	______	
2. Is cooperative.	______	______	
3. Gives helpful feedback.	______	______	
4. Settles problems constructively.	______	______	RATING
5. Is sensitive to others.	______	______	

INFORMATION MANAGEMENT: *Records, organizes and reports information on the job.*

1. Selects information for recording.	______	______	
2. Provides written/verbal information.	______	______	
3. Uses forms correctly.	______	______	
4. Records information legibly.	______	______	
5. Uses good grammar/spelling.	______	______	RATING
6. Keeps track of records.	______	______	

COMMENTS ____

____

____

____

________________________ ________________________
EVALUATOR'S SIGNATURE *PARTICIPANT'S SIGNATURE*

(4/81)

Open-Ended and Multiple Choice

The distinctions between multiple choice and open-ended questions have already been discussed. The review questions in Figure 3-6 are intended to guide the person developing an instrument of one of these types. A later section in this chapter, entitled "Existing Instruments," presents a set of criteria for review of instruments available from commercial publishers.

Figure 3-6: REVIEW CRITERIA FOR WRITTEN OR ORAL QUESTIONS

Ask yourself these questions when developing any type of written or oral questions. The first set applies to any written or oral questions. The next set applies specifically to multiple choice questions, and the final set applies to open-ended questions. Each question should receive a "yes" answer.

General Criteria

1. Have I avoided using items that are presented in an ambiguous fashion?
2. Have I followed standard rules of punctuation and grammar in constructing items?
3. Have I constructed only items that have right or clearly best answers?*
4. Have I kept the reading difficulty of test items low for the people being tested?
5. Have I avoided constructing the items from statements taken verbatim from instructional materials?
6. If any items are based on an opinion or authority, have I stated whose opinion or what authority?
7. Do items avoid offering clues for answering other questions?
8. Do the items avoid irrelevant clues?
9. Have I avoided making any items overly difficult by requiring unnecessarily exact or difficult operations?
10. Do my items avoid using words such as "always," "never," "none," "all"?
11. Have I avoided "trick" questions?
12. Have I checked the questions with other knowledgeable people to try to eliminate ambiguity, technical errors, and other errors?

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*Applies only to knowledge tests.

13. Do the questions try to measure only a single idea?

14. Have I restricted the number of question formats in the measurement instrument?

15. Were the most "valid" formats used?

16 Have I grouped questions presented in the same format?

17. Do the correct or desired answers follow essentially a random pattern?

Criteria for Multiple Choice Questions

1. Is each question designed to measure a desired competency?

2. Does the item stem* clearly define a problem?

3. Have I included as much of the item in the stem as possible?

4. Have I avoided irrelevant material in the item stem?

5. Have I avoided grammatical cues in the item stem?

6. Have I kept to a minimum the number of negatively stated item stems?

7. If the negative is used in an item stem, have I clearly emphasized it?

8. Is there one correct or clearly best answer? **

9. Have I avoided the use of answers such as "all of the above" and "none of the above"?

10. Have I made sure that all answers are grammatically consistent with the item stem and parallel in form?

11. Have I avoided stating the correct or desired answer in more detail?

12. Have I made sure that all distractors*** represent plausible alternatives to examinees who do <u>not</u> possess the skill measured by the item?

13. Have I avoided including two answers that mean the same, such that both can be rejected?

14. Have I avoided the use of modifiers like "sometimes" and "usually" in the alternatives?

15. Have I made sure to use important sounding words in the distractors as well as in the correct or desired answers?

16. Are all answers the same level of complexity?

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* An item stem is the part of the question or statement presented prior to the list of alternative answers.

** Applies only to knowledge tests.

*** Term used to refer to incorrect answers.

17. Have I made the answers as alike in style as possible?

18. Have I varied the length of the correct answer, thereby eliminating length as a potential clue?

19. Have I listed answers on separate lines, beneath each other?

20. Do I have sufficient questions (usually at least three) measuring each concept, to ensure reliable results?

21. Have I used new material for the students in formulating problems to measure understanding or ability to apply principles?

Criteria for Open-Ended Questions

1. Are these types of questions only being used when multiple choice ones are inappropriate?

2. Are the questions closely matched to the competencies they were written to measure?

3. Does each question present a clear task to the student?

4. Is there sufficient time for answering questions?

5. Are examinees aware of the time limits?

6. Do examinees know how many points each question is worth?

7. Is new and/or interesting material used in the questions?

8. Do questions start with words or phrases such as "Compare," "Contrast," "Give the reason for," "Give original examples of," "Explain how," "Predict what would happen if," "Criticize," etc?

9. Has an "ideal" answer to each question been prepared before administering the instrument?

10. Have scoring procedures been established for each question?

11. Have questions been avoided which can be answered by a simple "yes" or "no"?

V. SELECTING EXISTING ASSESSMENT INSTRUMENTS.

On the preceding pages, guidelines were presented for developing your own assessment instruments. This section focuses on selecting existing instruments. It provides guidelines for such selection, starter lists of published instruments in the four competency areas, and reference sources that may be useful in obtaining further information.

An existing instrument will generally be less expensive than one you develop, and certain aspects of the instrument's technical quality are likely to be higher. Existing instruments are available from publishers, or from persons who have developed their own for a specific use but have never published them. While published tests are generally extensively reviewed, pilot tested and revised before publishing, they may not have all the characteristics important for your particular situation. You must carefully review either published or unpublished instruments to be sure they can provide useful results.

Guidelines for Selecting Existing Instruments

Three general categories of criteria should be used when reviewing instruments: validity, usability and reliability.

Validity refers to the extent to which the instrument measures the skills, knowledge or attitudes the user intends it to measure. This is the most crucial issue in selecting an instrument. Just because an instrument's title suggests that it measures job knowledge or reading skills does not mean it measures the ones that are important to you for your particular purpose. Each question in the instrument should be looked at with a critical eye to determine if a person's answer to that question is truly going to help you decide if the person has achieved a competency and standard relevant to your program. For example, if the instrument measures knowledge about jobs that are unavailable in your area, is that useful to you? You may find instead that the instrument's format and type of questions provide a useful model for you to develop your own instrument.

Usability of an instrument refers to the extent to which the instrument is suitable for the context in which it will be used. For example, is the method of administration feasible in your program? If it requires administration with each person it may be unusable because of limited staff. If the scores are not easily interpreted or if the reading level of the questions is too high for your clientele then the instrument is unusable.

Reliability refers to the extent to which an instrument measures a trait consistently. Mathematical formulas exist for calculating the reliability of multiple choice instruments, with scores ranging theoretically from 0 to 1.00. In reality no instrument is perfectly reliable (i.e. having a reliability of 1.00). Good tests of knowledge will achieve reliabilities in the .85 to .98 range. Instruments measuring attitudes tend to fall in the .70-.90 range. Attitudes are by their very nature less stable than knowledge and thus their measures are less reliable.

With instruments requiring human judgment in the scoring (e.g., rating forms or open-ended questions), an important form of reliability is the consistency among raters. This type of reliability must be determined locally by having two or more raters conduct a rating and then comparing the similarity of their ratings. For help with the ways to check interrater reliability, consult an educational measurement textbook, program evaluator, research specialist, or a local college or university professor of measurement in education.

Figure 3-7 presents a set of criteria for reviewing existing instruments. Although this list contains the major criteria for instrument review, you may find that other issues are important to you and you will want to add them to this list.

Figure 3-7: CRITERIA FOR REVIEWING EXISTING INSTRUMENTS

I. Validity - the extent to which the test measures what the user intends it to measure.

1. Do the questions measure the specific competencies that need to be assessed?
   To answer this question, list the competencies to be assessed. Then go through the instrument item by item and determine which competency, if any, each item measures. On a multiple choice instrument adequate coverage requires at least three items measuring a given competency. If the test measures 75 percent of your competencies, the coverage may be adequate for initial planning decisions. It would not necessarily be adequate for instructional/training management decisions.

2. Were the questions developed in a systematic and rigorous manner so that the content is adequate and bias is minimized?
   In the manual accompanying the instrument, the publisher should present information on how the questions were selected for inclusion. They should be based on a careful analysis of the content area with clear linking of questions to the competency they measure. The questions also should have been reviewed for race, sex and cultural bias.

3. Were any empirical procedures used for screening or selecting items to ensure that items measure what they were designed to measure, are understandable, contain reasonable answers, and are free of ambiguous alternative answers and unnecessarily complex language?
   Empirical procedures include item analysis, review by juries of experts, review of item difficulties, criterion-group analyses or factor analyses.

4. Is the validating group representative of the population with which the test is to be used?*
   Include the following considerations in the evaluation of validating group representativeness:

   (a) Were both males and females included in the validating group?
   (b) Were all major ethnic groups represented in the validating group?

*The rating system used on this criterion assumes that the user is working with a broad cross section of participants. There may be cases where a more narrow and exclusive instrument is desired. This criterion would then be modified to fit the population.

(c) Was the validating group a nationally representative sample in terms of population density characteristics (e.g., urban, suburban, rural, etc.), and geographic representation of the age group for which the test was designed?

(d) Was the sample obtained systematically through cluster, stratified or random methods?

(e) Was the validating done less than five years ago?

II. Usability - the extent to which a test is suitable for the context in which it will be used.

1. Are the questions at a suitable language level for your program participants?
   The questions should be reasonably appropriate in difficulty and intellectually stimulating regardless of the competency being measured.

2. Are instructions to the administrator clear and complete?

3. Are instructions to the respondent written in clear and understandable terms?

4. Is the instrument clearly formatted?

5. Is there a simple way for respondents to record their responses?

6. Does the instrument yield scores that are easily interpreted and appropriate for their intended use?
   The main issue here is likely to be whether the reported scores are norm-referenced or criterion-referenced. The introduction to the starter lists of published instruments presents a discussion on this topic.

7. Is the amount of time required for assessment appropriate?

III. Reliability - the extent to which the test measures a trait with consistency.

1. Is reported reliability for scores sufficiently high?
   One or more of three different types of reliability may be reported in the technical manual accompanying the instrument-- alternate form reliability, test-retest reliability, and internal consistency estimates. Look for reliabilities above .80 for tests of knowledge. Attitude measures should be at least .70.

2. Are the scoring procedures clear and complete, thus ensuring reliable scores?
   A scoring guide, template stencil, other straightforward process or machine scoring should be provided for scoring of multiple choice items. Scoring guides and rigorous training procedures should be provided for scoring questions that require human judgment.

VI. METHODS OF ORGANIZING THE ASSESSMENT PROCESS

How will you operate your assessment system? Will the system be decentralized or centralized? Will it be computerized for administration or recordkeeping or not computerized? Will a separate staff conduct assessment or will it be done by the instructional or administrative staff? Each approach has merits and disadvantages.

Centralized vs. Decentralized Administration

Some agencies find that the most effective way to conduct assessment is to haveone centralized assessment center. This approach has the advantage of standardizing the assessment across all programs and usually means that staff with more assessment expertise can be hired. Such an approach would not work well, however, if the programs it serves are very scattered and communication with the assessment center is poor. It may also mean that assessment can not be tailored to the needs of each program.

The purpose for assessment will also influence whether it is done centrally. Initial assessment and assessment for external reporting can probably be done most effectively in a centralized setting. Assessment for instructional management nearly always needs to be done within each instructional job training program because the instructor needs quick turnaround on the assessment results and needs to be heavily involved in determining what should be assessed.

Specialized Assessment Staff

In nearly all situations it is advantageous to have at least one staff member with expertise in assessment. The technicalities of good assessment are many. A highly qualified person can play a key role in ensuring that appropriate instruments are used and that results are interpreted appropriately. On the other hand, it is equally critical that the assessment staff work closely with instructors and trainers to insure that appropriate content is being measured and that the characteristics of program participants are well understood. Specifically, the assessment staff members need to understand what assessment approaches may be threatening to participants in your program.

Computerized Assessment

Computers can be used in a variety of ways. Work is now being done by several test publishing companies to develop computerized testing systems. Examinees can sit at a computer terminal and respond to test questions as they appear on the screen. Based on the examinee's response, the computer can next present an easier or harder test item. This tailored branching approach to testing can be very efficient in determining a person's strengths and weaknesses. Computerized systems are also available for determining career interests.

Computers can also be used strictly for recordkeeping. Paper and pencil tests may be given and scores entered on a computer for ready access to instructors and others. Computerized recordkeeping aids compilation of results across program participants for program evaluation purposes.

The major disadvantages of computerized systems are that (1) they are generally expensive, (2) they require trained personnel and (3) the software to perform the desired functions may not be readily available. However, programs would likely find it very valuable to investigate the possibilities in their area.

VII. RESOURCES FOR FURTHER ASSESSMENT INFORMATION

Listed below are documents, people and organizations which may be helpful in planning and conducting assessment:

1. Beverly A. Anderson, Guide to Adult Functional Literacy Assessment: Using Existing Tests, Northwest Regional Educational Laboratory, (300 S.W. Sixth Avenue, Portland, Oregon 97204), 1981.

   This guide focuses on when and how to use existing literacy tests for measuring adult literacy skills. Available tests are listed. It is designed for adult educators, counselors and administrators of adult educational programs.

2. Beverly A. Anderson, Richard J. Stiggins, and Suzanne Hiscox, Guidelines for Selecting Basic Skills and Life Skills Tests, Northwest Regional Educational Laboratory, 1980.

   Procedures for identifying appropriate tests for measuring basic skills and life skills are given. It is designed for teachers.

3. Nancy J. Bridgeford and Richard J. Stiggins, Consumer's Guide to Writing Assessment. Northwest Regional Educational Laboratory, 1981.

   This guide presents information on alternative methods of assessing writing skills. Descriptions are given of nearly all available writing assessment instruments. People across the United States with expertise in writing assessment are listed.

4. O. Buros, (ed.), The Eighth Mental Measurement Yearbook, The Gryphon Press (220 Montgomery Street, Highland Park, New Jersey 08904), 1978.

   This book is the best reference available for obtaining critiques of existing assessment instruments. School counselors, education department libraries at universities, or professors of educational measurement would likely have a copy.

5. O. Buros, (ed.), Tests in Print, The Gryphon Press (see address above), 1978.

   This book lists all tests in print and gives information on the publisher, author, date and content of each test listed. Critiques of tests are not given.

6. ERIC Document Reproduction Service, P.O. Box 190, Arlington, Virginia 22210.

   ERIC (Educational Resources Information Center) is an educational information data base. Unpublished documents are collected in ERIC, along with journal articles.

7. Scarvia B. Anderson, Samuel Ball, Richard T. Murphy and Associates, Encyclopedia of Educational Evaluation (San Francisco: Jossey-Bass Publishers), 1975.

8. Schoolfutures, Inc. (2092 East Main Street, Hillsboro, Oregon 97213).

Schoolfutures is an educational brokering agency which will provide descriptive information on available products in the areas of (1) Assessment, (2) Pre-Vocational/Career Exploration, (3) Career Based Basic Skills, (4) Vocational Suppport Programs and (5) Vocational Training Systems. A Systems Catalog is available for $7 per area specified above or $25 for the entire notebook covering all five areas. (Price is F.O.B. Hillsboro, Oregon)

Chapter Four: MANAGING A COMPETENCY-BASED PROGRAM

I. OVERVIEW

Keeping the system "on track" is the basic purpose for management. Is the program performing as expected? What weak spots exist? Do results justify the investment of resources? Finding, using and reporting answers to these questions require management. Management practices make it possible for a program to be accountable; that is, to let people who pay for the program, those who use services provided by the program and other interested people know what the program expects to do and to what extent the expectations are being realized.

In a competency-based program, expectations are stated as program or managament goals. These goals identify the employability competencies that participants are to gain and indicate program performance standards. A few examples of program or management goals follow:

- o At least 90 percent of those who enter and remain in the program for sixteen (16) weeks or more will demonstrate minimal work maturity competencies, including dependability, appearance, work performance, interpersonal skills, and work adjustment skills.
- o At least 90 percent of those who enter and remain in the program for six (6) or more weeks will demonstrate pre-employment job seeking skills, including locating job openings, applying for a job and interviewing for a job.
- o Of those who enter and remain in the program for at least one year, 50 percent will demonstrate minimal occupation-specific competence according to standards set by either an occupational training program or an employer who is providing on-the-job training.

Program or management goals, as you can see, pertain to the overall program rather than to any individual. However, program goals cannot be set without having a set of employability competencies that guide the development of participants. Employability competencies provide not only the basis for assessing the progress of each participant but also the basis for assessing the overall performance of the program.

With this in mind, then, the first step in managing a program is to establish employability competencies and benchmarks. The second step is to use the competencies and benchmarks to develop program or management goals. Third, the goals are shared with those who helped develop them and those expected to accomplish them. As a fourth step, performance in the accomplishment of goals is checked. Fifth, program performance is reported and finally, adjustments are made as needed.

1. Develop Competencies and Benchmarks

2. Develop Program Goals for Competency and Benchmark Attainment

3. Share Goals

4. Check Performance in Accomplishment of Goals

5. Report Program Performance

6. Adjust Goals and/or Competencies and Benchmarks

Figure 5-1: Six Key Management Tasks

II. DEVELOPING MANAGEMENT GOALS-- THE STANDARDS FOR PROGRAM PERFORMANCE

While competencies and benchmarks are developed through widespread involvement of many groups and individuals, management goals are developed through interaction with fewer but very important groups, namely program staff, service deliverers, program advisory committee and funding agents. The processes include advice and negotiation, because resources usually will not allow a program to help all participants acquire all competencies. Therefore, the management goals must reflect priorities for program performance. Will the program emphasize work maturity competencies rather than occupation-specific competencies? Will a major goal be to upgrade the educational skills of the participants? Will the program work toward minimum competence in large numbers of participants or concentrate on minimum-plus-additional competence for fewer participants? These and other questions must be answered as management goals are set.

Seeking advice comes first in the process of setting management goals. Open forum discussions with staff members, advisory committee, service deliverers and funding agents make a good starting point. The purpose of this process is to discover the values and biases of key groups and individuals and to find areas of agreement and disagreement. It is also possible to figure out how various people view and interpret rules and regulations that guide program operation. The discussions should revolve around possible management goals and the resources needed to achieve them. This effort should result in a tentative set of management goals.

Next comes negotiation. This is the process of finalizing management goals for the program. The final set of goals will guide the program for an agreed upon period of time, one year for example. While advisory committees, staff and service deliverers should be in agreement with the management goals, the main negotiation is between the program and the funding agent. A set of goals should be presented to the funding agent. The funder should suggest changes and the differences should be worked out. The negotiation centers on goals and resources because the two must be in agreement. When the differences have been worked out the goals should be put into final written form and both parties should sign off.

The third step in managing a competency-based program is to spread the word--let people know about the management goals. It is very important that program staff and service deliverers know about the final set of management goals because these goals form the basis upon which both staff and service deliverers plan their work. Program or management goals can also become the basis for negotiating performance objectives with staff members and service deliverers.

Other groups and individuals should also know about the management objectives. Employers, community organizations, people eligible for program services, and the community at large should be informed. Techniques for spreading the word were discussed in Chapter Two and apply here also. Use a variety of techniques to let people know the management goals for the program.

Checking performance is the fourth step in program management. Assessment of competency development provides the information needed. That is, collecting and summarizing data from individual participants gives overall program performance data. Let's look at an example.

> At least 90 percent of those who enter and remain in the program for sixteen (16) or more weeks will demonstrate minimal work maturity competencies, including dependability, appearance, work performance, interpersonal skills and work adjustment skills. The technique used to assess these competencies is a checklist completed weekly by employers for each participant. The checklist may look something like the following one:

WORK MATURITY CHECKLIST

Week beginning________________

Participant__________________________________

Supervisor___________________________________

COMPETENCY INDICATOR	3 Excellent (Almost Always)	2 Satisfactory (Most of the Time)	1 Needs Improvement (Not Very Often)
Comes to work			
Comes to work on time			
Lets supervisor know when not coming and/or when coming late			
Groomed for the work			
Dressed for the work			
Does enough work			
Does good work			
Gets along with supervisor			
Gets along with other employees			
Works cooperatively			
Is interested in the job			
Follows rules and procedures			
Takes care of property of others and employer			
Is willing to learn			
Resolves conflicts in positive ways			
Keeps trying in spite of problems or setbacks			

Figure 5-3: Sample Work Maturity Checklist

The benchmark (standard) for these competencies is that over the sixteen (16) week period the individual will receive satisfactory or excellent ratings for each competency indicator at least fourteen (14) times. To check program performance it is necessary to identify all persons who were enrolled for sixteen (16) weeks and compute the percent who met the benchmark. If the percent is 90 or more, the program (management) goal has been reached. If the program goal is not reached, further analysis of the information is needed. Questions such as the following should be answered.

- For which competency indicators is the standard not reached?
- Is the standard set too high?
- What are the reasons for nonattainment?
- How should the program be modified to improve results?

Some of these questions can be answered from the assessment information already available and some will require additional data collection.

With data in on all management objectives, a report of program performance should be prepared and distributed. This is the fifth management step, a key element in showing accountability. A sample report form follows:

PROGRAM PERFORMANCE REPORT

This report shows the operating results for the Your Town Employability Program for Fiscal Year 1981. The report includes information on each of the fifteen (15) management goals set at the beginning of the year.

Management Goal	Program Performance	Comments
o At least 90 percent of those who enter and remain in the program for sixteen (16) or more weeks will demonstrate minimal work maturity competencies, including dependability, appearance, work performance, interpersonal skills and work adjustment skills.	The program narrowly missed achieving this goal. 82 percent of the individuals reached the benchmark of receiving satisfactory or excellent ratings on all minimum work maturity competencies for fourteen (14) out of sixteen (16) weeks. Assessment with a standard rating form was done weekly by employers for each participant.	Several people did not reach the benchmark for the dependability competency indicator, which requires participants to let their supervisor know when they are not coming to work or are coming to work late. "Following rules and procedures" was the other competency indicator that lowered the percent of individuals reaching the benchmark.

Similar descriptive material should be presented for each management goal. Such a report or even a shortened version of the performance results should be shared with staff, service deliverers, advisory group, funding agency and the community at large. Techniques for communicating with various individuals and groups are included in Chapter Two.

The sixth and final step in the management cycle is adjusting the program if performance is not adequate. Management goals, assessment techniques, activities and strategies, and personnel are all examples of components which may need adjustment. You will need to answer questions like these: Who will make the adjustments? What resources will be required to make the adjustment?

When adjustments to any aspect of the program are complete, communicate the changes to interested people and begin the management cycle again.

The management function, when based on employability competencies and program goals, can maintain credibility for the program. The program is accountable and people know it. When people believe a program to be accountable for increasing valued competencies, support is likely to be maintained.

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Chapter Five: PLANNING INDIVIDUAL PROGRAMS

I. OVERVIEW

The concept of individualized planning typically scares people away. It is often dismissed as too costly and too inefficient to use in employability development programs. However, individualized planning pulls the various parts of a competency-based program together. As such, it is fundamental. There are numerous ways to carry out the steps of individualized planning, and nearly every program should be able to find an alternative to fit its unique situation. Suggestions for personalized learning activities and services are presented in this chapter.

II. A RATIONALE FOR INDIVIDUALIZED PLANNING

Individualized planning is a process that synthesizes the various parts of a competency-based employability skills program. It usually involves the preparation of a document that describes

- Results of initial assessment (competencies and benchmarks already attained)
- Individual goals (competencies and benchmarks aimed for within a specific time frame)
- Activities that will be undertaken to reach goals
- Description of when and how assessment will take place
- A record of benchmark/competency attainment.

In areas where competency-based programming has taken place, a great variety of planning documents have been used. Figure 5-1 below shows an example of an individualized plan.

INDIVIDUALIZED PLANNING RECORD

A. PARTICIPANT EMPLOYABILITY GOAL

____

____

B. REQUIRED COMPETENCY LEVELS:

PRE-EMPLOYMENT SKILLS: ______________________________

____

WORK MATURITY: ______________________________

____

BASIC EDUCATIONAL SKILLS: ______________________________

____

OCCUPATIONAL SKILLS: ______________________________

____

C. CURRENT COMPETENCY LEVELS:

PRE-EMPLOYMENT SKILLS: ADEQUATE /___/ IMPROVEMENT NEEDED /___/

COMPETENCY AWARDED ON ASSESSMENT FACTS /___/

SUGGESTED SERVICES: ______________________________

____

____

WORK MATURITY: ADEQUATE /___/ IMPROVEMENT NEEDED /___/

COMPETENCY AWARDED ON ASSESSMENT FACTS /___/

SUGGESTED SERVICES: ______________________________

____

____

BASIC EDUCATIONAL SKILLS: ADEQUATE /___/ IMPROVEMENT NEEDED /___/

COMPETENCY AWARDED ON ASSESSMENT FACTS /___/

SUGGESTED SERVICES: ______________________________

____

____

OCCUPATIONAL SKILLS: ADEQUATE /___/ IMPROVEMENT NEEDED /___/

COMPETENCY AWARDED ON ASSESSMENT FACTS /___/

SUGGESTED SERVICES: ______________________________

____

____

D. LIST ANY OTHER MENTAL, PHYSICAL, OR OTHER SIGNIFICANT BARRIERS TO EMPLOYMENT: ______________________________

____

While individualized planning requires a strong commitment from program staff (e.g., counselors, instructional staff, or whoever is assigned the task of negotiating the plan with participants), the commitment is <u>not</u> necessarily one of time. It is rather a commitment of personal involvement in whether the individual is successful in attaining his or her goals.

In designing an individualized planning process to meet your needs, you may wish to consider some of the issues listed below:

POTENTIAL PITFALLS	POSSIBLE ALTERNATIVES
1. Individualized planning takes more time and staff resources than our program has.	1. Involve participants in the planning process. Let them develop their own plans; staff can then serve a review function.
2. Individualized planning requires juggling of more data and information than we can keep track of.	2. Consider using a micro-computer to manage data.
3. Individualized planning means a mountain of paperwork.	3. Review the materials you use and determine whether you can cut down on paper.
4. Individualized planning means we serve fewer clients.	4. It may be necessary to serve fewer clients in order to serve them well. No one wins if many clients receive services that are not helpful.
5. Individualized planning is time-consuming because participants have difficulty engaging in it.	5. Make it a learning process. Good planning skills can serve participants the rest of their lives; tie it to career planning processes.

III. STEPS OF THE PLANNING PROCESS

While the exact number of steps and the details of how they are carried out vary, there seem to be four fundamental steps in every individualized planning process. These are:

- o Individual assessment and goal setting
- o Selection of activities to reach goals
- o Ongoing assessment of goal attainment
- o Revision/adjustment of goals

This process takes place in a cycle (Figure 5-2):

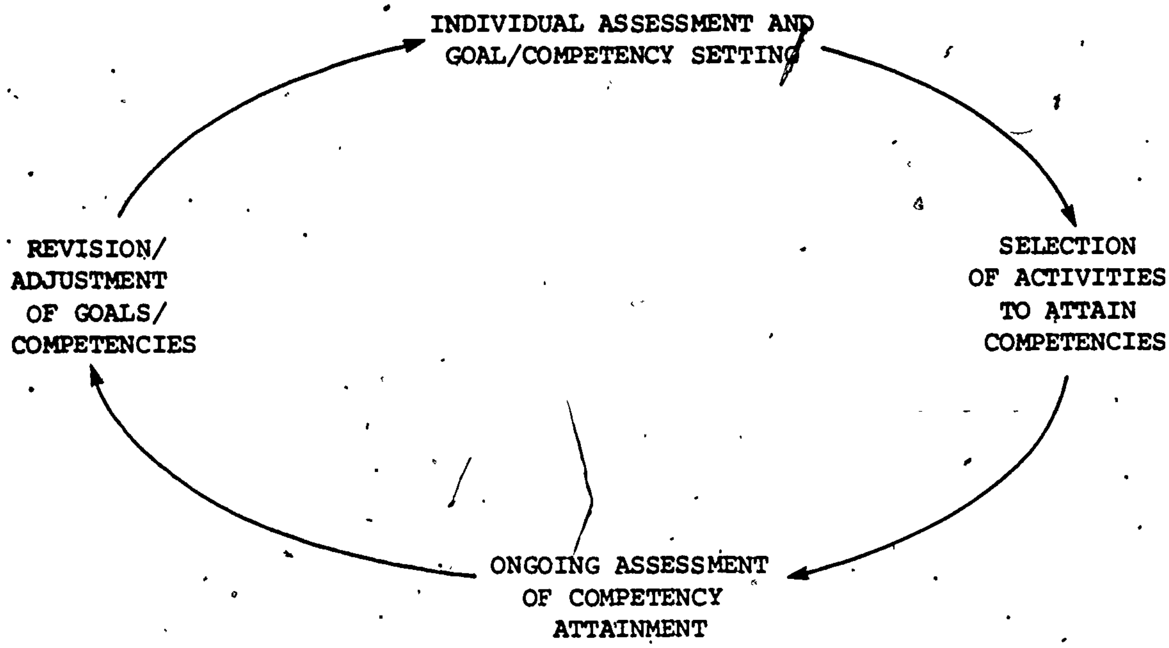

FIGURE 5-2: CYCLE OF INDIVIDUALIZED PLANNING

If an individual's plan is to have meaning, all parts of the employability program must work together in a complementary fashion. The most useful plans contain well-analyzed, sequenced sets of learning activities individually negotiated with participants to move them toward clearly defined goals. Plan development is an ongoing process; learning and work experiences are structured and goals are refined throughout the program cycle.

Ideally, the plan should be contained in a folder that is easily accessible to staff and participants alike. This gives the participant a tangible record of competencies aimed for and attained, and can be invaluable in the job-seeking process.

The concept and practice of negotiation is absolutely essential to employability plan development. In a broad sense, the spirit of negotiation characterizes the atmosphere within which participants and staff continually exchange ideas.

Giving participants realistic experiences in negotiation is essential to preparing them for responsible roles in the community. As much as possible, participants should be free to decide for themselves what their career and life goals are and what planning and activities are needed to achieve those goals. Negotiation encourages decision making by providing for continuous information exchanges among participants and staff. In this way, clients have many chances to examine themselves, their abilities and interests, and to clarify values and set goals that reflect their own unique personalities.

The material below presents detail for each planning step.

Step 1: Individual Assessment and Goal/Competency Setting

Assessing what you have to start with is an important first step. Using a variety of information sources--including participant self-assessment, staff observations, performance reviews, and past transcript data--the client works with staff to address questions like these:

What have I already tried and know that I can do?
What do I like to do?
What am I capable of doing?
What is important to me now and for the future?

Whatever the initial assessment's purpose--whether academic, career or personal growth--its major focus is where the participant has come from, where he or she is now and what kinds of things look appealing in the future. Special attention is given to what participants know about themselves and their unique characteristics. Competencies in each of the four domains may be set as goals--or the participant may work on only one competency area.

Step 2: Selecting Activities to Attain Competencies

Following the initial assessment and goal-setting phase, participant and staff negotiate goals, activities and performance criteria. They select resources that fit the individual's identified needs and expressed interests. An important staff responsibility at this point is to help the client creatively design a plan that will meet career and personal development goals.

The participant works with staff to make the first several goals short-term and highly specific. At the same time, they discuss how achieving these goals relates to long-range career and lifetime aspirations. These latter goals are usually very broad and tentative; most programs hesitate to push clients to decide on a concrete and guaranteed "lifetime" career. Rather, staff introduce clients to the need for continually making and refining long-term goals as an important aid in making decisions about the present. As clients experience successes and failures in achieving short-term goals, their interaction with learning environments and resource people helps them refine broader future plans. At the same time, they develop the ability to consider more options and to respond to changing concepts of self and changes in the world.

Throughout, the participant is encouraged to speak up when particular activities prove to be either too difficult or nonproductive. The client's ability to renegotiate the specifics of the career plan is vital to the success of negotiation as a guidance process.

Step 3: Ongoing Assessment of Competency Attainment

Ongoing assessment of competencies looks at what participants have done to achieve the goals they set for themselves. It may be based both on others' observations of their performance and on their own self-evaluation. Evaluative feedback and debriefing conferences are recommended for any individualized program. The participant and staff discuss the assessment, its implications for career planning and changes in behavior that may be recommended. In this step, assessment may be used to help participants understand how far they have come in the attainment of a particular benchmark and how far they still need to go. Ongoing assment can also be used to identify areas in which additional work is needed. Ongoing assessment helps to modify activities as quickly as possible if a competency is not met. There is no sense in continuing with an activity if it is not helping the participant attain an identified competency.

As much as possible, the people who evaluate participants would be those who have worked with them while the activities were being performed. On an informal basis, staff, employers and others have many opportunities to talk with clients about performance and growth. An important part of assessment is its emphasis on the person's increasing ability to reflect on first-hand experiences--to see the results of decisions made and to assess the effects choices have on self-concept and lifestyle/career aspirations.

Step 4: Revision/Adjustment of Goals

After each program activity and during periodic assessment or evaluation interviews, the participant examines benchmark attainment, reviews abilities and whether interests have changed. The participant may wish to modify career and life goals. As the participant refines or modifies decisions, the cycle repeats itself and the student again meets with a staff person to establish desired competencies.

As participants in any employment program gain experience in using the cycle of initial assessment, negotiation, ongoing assessment and integration, they are encouraged more and more to take the initiative in arranging meetings and proposing terms for negotiation. They begin to structure, plan and then negotiate ever larger segments of their activities and to take greater responsibility in meeting terms and target dates and accepting the consequences of their behavior. Part of their learning should be the fact that employers, for instance, may not be as willing to negotiate on some of these issues as we might like!

As participants become more skillful at negotiation, however, they come to understand the benefits of the process, internalize it and transfer it consciously to other life situations. It becomes their system--one that works for them again and again, one that makes personal success more obtainable on short-term and long-term bases alike.

IV. SOME TECHNIQUES YOU MIGHT USE

The techniques below have been used by other practitioners to carry out an individualized planning process.

Using Assessment Information

To serve as a baseline for negotiation with participants, diagnostic information for each incoming student can be gathered on a single Profile form which summarizes transcript data, testing results and student/staff interviews.

Transcript Data

Before program entry, a staff person may wish to gather transcript or other prior data on incoming participants and translate it to a form usable by staff. This information may be kept on a memo slipped in the client's file or summarized on the Profile form.

Basic Skills Testing

Upon program entry, staff may choose to begin assessing educational skills, since these are the competencies frequently cited as important to employers. Staff should try to spot participants who might need additional testing early so that appropriate Educational Skills activities can be negotiated as soon as possible.

Career Development Assessment

On program entry, participants typically use instruments and systems designed to help pinpoint the kinds of occupations that might interest them. Using these materials early lets them make tentative selections of jobs they would like to explore or prepare for. This enables staff to make sure there are sufficient work experience or training opportunities to accommodate interests.

Participant Self-Analysis

How clients view themselves strongly affects their progress and general adjustment to the program. They can be asked to describe themselves in terms of their interests, preferred learning environments and types of learning they enjoy. They might also describe problems they perceive, in their study habits and rate their abilities to complete assignments independently. This self-analysis should take place in private interviews with a staff member who uses a check-off sheet to help guide the interview and to record responses.

Career Planning Conferences

The backbone of a responsive program consists of numerous observations made daily by staff and employers. It is through sharing these observations in career planning conferences that participants and staff gain realistic pictures of client abilities and needs. Most observations made during such conferences should be filed in the staff member's personal notebook and shared with other staff on an informal basis.

Early during program orientation, the job placement or work experience liaison staff member should meet individually with participants to counsel them on their selection of sites for career explorations (if this option is available). Results of career interest tests, how accurately they reflect what the client feels about possible jobs, and any personal observations the staff person makes are filed for use in information sharing meetings with other staff.

The advisor might observe the client's initiative in using career research materials and in selecting sites to explore, noting which clients might need more help than others to get over their initial hesitancy at making contact with employers or accepting job responsibilities.

Continuous Participant Self-Evaluation

Participants typically go through a continuous kind of self-assessment and analysis as they work with staff to develop individualized plans. The more participants are involved in planning their own learning and setting their own performance criteria, the more proficient at self-evaluation and self-assessment they will become. Staff, employers, and other resource people can aid in this process by giving participants regular feedback and advice regarding what they see.

V. STRATEGIES FOR PERSONALIZED LEARNING

The attainment of benchmarks and competencies will be difficult, and probably useless, if the educational activities do not meet the needs of the individuals they are aimed at. The best learning activities are personalized. There are a number of ways staff can personalize activities designed for participants in competency-based employability skills programs.

In general, such activities should contain the following elements:

1. Specifies rationale, activities, resources and products-criteria
2. Clearly defines target dates
3. Is performed at, or involves experiences from, job sites in the community
4. Involves participant in active use of the community as a resource pool (people, places, materials)
5. Involves participant in frequent "learning by doing" experiences
6. Tailors goals to individual needs, interests and abilities, based on assessment information
7. Measurable performance criteria negotiated individually
8. Emphasizes career planning and lifetime learning
9. Involves community people in the evaluation process

Personalized Instruction: A Definition

Any instruction or training which is planned to meet the individual needs of a participant can be personalized by:

- Proceeding at the person's own rate of progress and achievement
- Varying the amount and kind of instruction based on the participant's ability level, interest level and personal learning style as diagnosed by the staff member
- Varying the learning setting in and out of the typical classroom, in various grouped and independent instructional modes, based on the diagnosed learning needs of the person.

INDIVIDUALIZED INSTRUCTION IS

NOT NECESSARILY:	BUT USUALLY INVOLVES:
One person working with one instructor	o Some one-on-one time, especially for planning learning and evaluating achievement
In small groups	o Small grouping strategies and activities, including peer tutoring, even in large group settings
Self-paced	o Time flexibility, so that the student masters one competency in a particular topical area before proceeding to the next
Self-directed	o Participant choice, with staff guidance, of learning materials and activities o Client participation in the planning and evaluation of learning o Some independent work
Out of the classroom	o Some out-of-the-classroom activities, linking "theory" with the rest of the client's life
Ungraded	o Some flexibility in grading procedures to give participants credit for previously mastered skills and to focus attention on criterion skills or competencies o Provision of feedback to participants on their performance in a more extensive way than typical grades provide
An individual learning plan (such as the Career Plan)	o Flexibility in assignments and o materials and strategies to meet the needs of participants individually

FIGURE 5-3: INDIVIDUALIZED INSTRUCTION

There are several methods to choose from in providing personalized services. Three clusters are described below. It is understood that there will be many variations within each. Another assumption we make is that counseling and guidance resources are available continually as clients discover needs to change their plan because of shifting circumstances.

The three clusters are:

1. Group or class experiences - where as many as 20 to 30 persons gather regularly for learning or training activities planned and directed by one or more staff persons.

2. Pre-planned projects - where either individuals or small groups work together on a common set of objectives and activities with a staff member or knowledgeable resource person nearby.

3. Individual project - where the client works out a personally-tailored learning plan or contract to accomplish unique objectives based on previously identified needs, interests and abilities. A staff member or resource person may only need to be consulted occasionally. Typically, several resource persons will need to be involved.

Listed below are questions to ask in deciding which strategy to use, when to use it, and with what clients.

Staff

1. Are staff members equally skilled in working with large groups, small groups and one-on-one?
2. Are there enough staff to offer more than one option?

Space (Facilities)

1. Is there flexible space to accommodate different learning modes?
2. Are physical surroundings conducive to individual vs. group activities (e.g. lighting, temperature, noise levels)?

Time

1. Is the program bound to produce minimum outcomes in a maximum time frame?
2. Are hours in a day or week flexible?

Materials and Equipment

1. Are materials and equipment readily accessible and adequately supplied?
2. Are they up-to-date and compatible with today's rapidly changing technology?
3. Is there someone monitoring their availability and managing the flow?

Transportation

1. Can participants safely reach their education and training sites, and with relative ease?
2. Are costs a major concern in this instance?

Community Resource Persons

1. Is use of knowledgeable experts possible either in the classroom situation or by participants at worksites?
2. Have those volunteer resource persons been trained?

Community Resource Sites

1. Has the use of community sites (any place where work is being done) been considered as a way to achieve other competencies than those related to job skill development and placement?
2. Have volunteer tutors, mentors, or supervisors at work sites been prepared for their roles as instructors and to certify that learning and skill development have taken place?

Programs that have adapted individualized education and training strategies typically find them to be far more effective than group-oriented, time-bound systems. While costs are comparable, and may even be greater in the planning stages, the overall outcome will more than compensate.

Chapter Six: RECORDING AND REPORTING

I. OVERVIEW

The basic management tool of a competency-based approach is a recordkeeping system which allows staff to determine individual progress and to monitor overall effectiveness of programming. Because of the data-dependent nature of a competency-based system, it's not suprising that the most frequent staff complaint will be that recordkeeping tasks take too much time away from other activities. The volume and frequency of these complaints will warrant a hard look at efficient ways to meet recordkeeping demands.

In determining the recordkeeping needs of a competency-based system, three questions must be addressed. Who is likely to need information about competency mastery? From where will the data come? What use will be made of the information?

A major point to remember in designing recordkeeping systems for competency-based programs is that records must be kept by competency for each individual. Keeping track of time in a service or placements in a job is not sufficient.

II. AUDIENCES

There are five main audiences for information compiled through record-keeping processes: (1) staff, (2) participants, (3) employers, (4) funding agencies and (5) the community-at-large. The basic information for all audiences is the same--what individuals are achieving what competencies--but the detail and format for presenting the information varies by audience.

- Staff need information for two purposes: (1) to plan activities for individual participants and (2) to improve the overall quality of the program. To plan activities for participants, staff members must know which competencies have been achieved and which are yet to be achieved for each individual. To improve the overall program, the staff must know which competencies are being achieved by all or nearly all of the participants and which are being achieved by relatively few individuals. This knowledge allows staff to concentrate improvement efforts on those competencies that are not being achieved.

- Participants need to know how they are progressing. They must know which competencies they have passed and which ones they must develop. Individuals must take responsibility for their own development even though it is not easy to do so. If individuals are not responsible and actively involved in managing their development, progress will be much slower.

- Employers must know what competencies each individual possesses. This information is necessary in order to make hiring decisions. Good information will help both employers and employees (participants). Employers will hire people who have the specific competencies needed for their job. Individuals will not be placed in jobs for which they are poorly prepared; they will have a greater chance of success in the job they do get.
- Funding agencies need information to determine whether an agency is meeting management goals agreed upon for the program. They need to know how many and which individuals are achieving various competencies.
- The community-at-large needs to know how the program is performing. Is the program doing what it said it would do?

III. SOURCES

Data will come from a variety of sources, depending on the assessment techniques used. Major sources are test scores, employer ratings and records and staff judgments. Keep in mind that the data should be recorded by competency for each individual.

A recordkeeping system can be developed only after the competencies and standards are explicit and the sources of data are known. The first step in setting up a recordkeeping system, then, is to list the competencies, standards and data sources. Samples follow:

Competency Area	Competency	Indicator	Standard	Data Source
Pre-Employment	Summarize job market conditions	Name sources of information about job market	At least three	Item 4 from unit test
Educational skills	Communicate through writing and speaking	Write legibly	Others can read and interpret	Teacher judgment of writing on forms and practice writing assignments
Work Maturity	Demonstrate appropriate work performance	Do enough work	Quantity acceptable to employer	Employer judgment as reported on work maturity checklist

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There may be several indicators for each competency and performance on all indicators must be documented before competency has been achieved. A recording form may look like the one shown below. When competencies and indicators are known, forms can be pre-printed to save time. Such a record must be updated frequently, perhaps even daily. When columns are totaled, this form shows overall program performance. It also shows progress by any individual.

WORK MATURITY
COMPETENCY DEVELOPMENT

Program ____________
Date ____________

Participant	DEPENDABILITY	Attentance	Punctuality	Notification	APPEARANCE	Grooming	Dress	WORK PERFORMANCE	Quantity	Quality	Consequences of Errors	INTERPERSONAL SKILL	Supervision	Co-workers	Cooperation	ATTITUDES	Interest

It is probably obvious that several different data sources will produce information usable in tracking progress of individuals. The data from the various sources must be transferred onto a single form. Computerizing the recordkeeping system will help reduce the clerical load.

Uses and Reports

The uses to be made of the information must be matched with the report format. Individual profiles are useful to staff and participants. A sample is shown below.

EMPLOYABILITY COMPETENCY DEVELOPMENT PROFILE

Participant ____________ Date ____________

Service Provider ____________________

Competencies	Completed	In-Progress
PRE-EMPLOYMENT		
Describe Personal Characteristics		
How to get information	*	
List interests	*	
List abilities		*
List short- and long-range goals		

This type of report helps to focus attention on the skills under development. Comparing reports from various periods will show how well the individual is progressing.

Staff members need summary information in order to check program performance. A summary report may look like the one below.

EMPLOYABILITY DEVELOPMENT
SUMMARY REPORT

Service Provider ______________________ Date ____________

This report covers the period from ____________ to ____________

Competencies	Completed Number	Completed Percent	In-progress Number	In-progress Percent
PRE-EMPLOYMENT				
Describe Personal Characteristics	10	20	40	80
How to get information	48	96	2	4
List interests	30	60	20	40
List abilities	23	46	14	28
List short- and long-range goals	10	20	10	20

This type of report allows staff to see which indicators are not being achieved and to focus on determining why progress is not being made. If necessary, the program can be adjusted.

Employers are most interested in the competencies that individuals have achieved. They are probably most interested in work maturity, educational skills and occupational skills. The reports to employers should be in simple, straightforward language and may take the form of certificates.

Funding agencies need data on program performance that is much like what the staff needs to adjust the program. The difference is that the funding agency may want information on competencies only, not on indicators. Also, the information should be displayed with the management goals agreed upon by the funding agency and the service provider. Samples of such reports are in Chapter Five, Managing A Competency-Based Program.

The community-at-large needs general information about program performance. Reports should be by competency and relate to management goals. A sample report is in Chapter Five.

IV. PRACTICAL RECORDKEEPING

Typically, it will be staff members who are asked to accomplish instructional, assessment and record tasks. Since most agencies have existing information systems in operation, it is important that the competency recordkeeping system and existing procedures mesh and do not duplicate collection and recording procedures.

Computer systems have been touted as a means of facilitating good recordkeeping for competency-based systems and they can serve a valuable function, particularly in the derivation of group data from the information about individual students. However, a computer does not reduce the work of data collection: designing, administering, scoring and recording the assessments of individual participants; so a computer will not appreciably reduce staff workload.

Recordkeeping by exception could also reduce the teacher's recordkeeping burden. That is, instead of recording successful mastery of the competencies, the data collector would only record the deficiencies--competencies that were not mastered. Most teachers have responded to this suggestion by saying that they appreciate the positive reinforcement aspect of marking mastered competencies for each student. So, while recordkeeping by exception would reduce the number of entries that the staff must make for each participant, instructors are reluctant to discard the individual reward factor implicit in compentency-based systems.

A final suggestion is that staff--those with responsibility for implementation--be heavily involved in designing the recordkeeping and reporting system. This will maximize chances of success.

AFTERWORD: READY TO WORK IN A COMPLEX JOB WORLD

This handbook was created in response to a growing interest in competency-based education and training programs. Employers frequently say they wish new employees would come to work with the "right" attitude and skills so that productivity is not lost. The techniques described in this manual are based on real examples of programs that are underway in communities large and small across the nation. The key ingredient to make these strategies work from your point of view is a willingness to try. The roadmap is provided here, but the routes you choose to take are local decisions. To get the best advice on directions to explore, ask around for people who have made similar journeys. Their recommendations and program models will provide a reality check for the guidelines collected here. The approaches may vary but the outcomes should be the same: to help youth and adults alike be ready for today and tomorrow's ever-changing work of work.

APPENDIX A

RESOURCES:

Persons, Programs and Agencies

A. WRITTEN RESOURCES

1. APL Series: Coping in Today's Society (The). New York: Harcourt, Brace, Jovanovich, Inc., 1980.

   The Adult Performance Level (APL) series is a performance-based curriculum for adults that focuses on skills for getting along in today's society. The series consists of the following volumes: Government and Law, Health I and II; Consumer Economics I, II and III; Occupational Knowledge and Community Resources. The volume on Occupational Knowledge contains material closely related to the competency areas of Work Maturity and Pre-employment.

2. "A Methodology for Reading Skill Improvement in Vocational Secondary Programs," Salem, Oregon, School District; Vocational Technical Education Division, School of Education; Oregon State University; and Oregon Department of Education, June 1981.

3. "A Summary Report of the Vice-President's Task Force on Youth Employment," Washington, D.C.: The White House, 1980.

4. Chatham, Karen M., Johnson, James N. and Peterson, Robert M. "The Concept of Employability: A Review of the Issues," San Francisco, California: Far West Laboratory for Educational Research and Development, July 1981 (draft).

5. "Concept Paper on the Consolidated Youth Employment Program Demonstration," Washington, D.C.: U. S. Department of Labor, 1980.

6. "Consolidated Youth Employment Program: Promising Connections for Youth: Field Observations and Policy Analyses of Key Program Issues," Washington, D.C.: Osoro and Associates, 1981.

7. "CYEP Special seminar: Competency Assessment/Benchmark Development," CYEP Technical Assistance Letter #24, U. S. Department of Labor, Employment and Training Administration, 1981.

8. Frye, Charles H., "Tracking and Reporting School-Leaving Competencies," Portland, Oregon: Northwest Regional Educational Laboratory.

9. Hamilton, Steven, "Youth Work Experience and Employability: Literature Review and Conceptual Framework," The National Institute of Education, July 1980.

10. Johnson, James N, "The Concept of Work Maturity, "San Francisco, California: Far West Laboratory for Educational Research and Development, July 1981 (draft).

11. McCaslin, N. L., Gross, Charles J. and Walker, Jerry P., "Career Education Measures: A Compendium of Evaluation Instruments," Research and Development Series No. 166. National Center for Research and Vocational Education. The Ohio State University (1960 Kenny Road, Columbus, Ohio 43210), 1979.

12. McCaslin, N. L. and Walker, Jerry P., "A Guide for Improving Locally Developed Career Education Measures," Research and Development Series No. 167, National Center for Research in Vocational Education. The Ohio State University (1960 Kenny Road, Columbus, Ohio 43210), 1979.

13. Malak, Sharon, Spirer, Janet E. and Land, Brenda Pellegrini, "Assessing Experiential Learning in Career Education," Research and Development Series No. 165. National Center for Research in Vocational Education. The Ohio State University, 1979.

14. Michel, Ann C., Reicher, Rita L., Cama, Vincent, McMaster, Donald J., Benchmarking: A State-of-the Art Review, 3 vol., Syracuse, New York: Syracuse Research Corporation, May 31, 1981.

15. Nedwek, Brian P., et al. "The Vocational Exploration Demonstration Project: An Analysis of the 1979-80 Academic Year Components," Project Report Submitted to the U.S. Department of Labor, St. Louis, Missouri: St. Louis University, 1981.

16. Nickse, Ruth, ed., with McClure, Larry, Associate Editor, Competency-Based Education: Beyond Minimum Competency Testing, New York: Teachers College, Columbia University, 1981.

17. Selz, Nina, "The Teaching of Employability Skills: Who's Responsible?" Columbus, Ohio: National Center for Research in Vocational Education, 1980.

B. SOURCES OF INFORMATION AND MATERIALS

1. Adamsky, Didi, Vocational Education Department, Temple University, Philadelphia, Pennsylvania 19122.

   **Modules to assist in developing competency-based instruction in vocational education. These relate particularly to the Occupational Skills competency area.

2. "Fair Break," Control Data Corporation, Box O, Minneapolis, Minnesota 55440.

   **"Fair Break" is a program utilizing the computer-based PLATO system to train the unemployed for success in the workplace. The PLATO system is competency-based and includes self-pacing material designed to teach basic skills.

3. Methods and Materials for Teaching Occupational Survival Skills, Illinois State Board of Education, Curriculum Publications Clearinghouse, 76B Horrabin Hall, Western Illinois University, Macomb, Illinois 61455.

   **This is a 650-page resource guide for teachers relating primarily to the "human" side of work. It consists of 14 modules and relates to Pre-employment and Work Maturity competencies.

4. Minnesota Curriculum Services Center, 3554 White Bear Avenue, White Bear Lake, Minnesota 55110.

   **Competency-based instructional materials from 25 vocational program areas. These relate particularly to the Occupational Skills Compentency area.

5. Open Entries, The Center for Studies in Vocational Education, Florida State University, Stone Building, Tallahassee, Florida 32306.

   **This newsletter provides resources that relate to all four competency areas.

6. Occupational Training Guide for the Job Corps, ET Handbook No. 325, U.S. Department of Labor, Employment and Training Administration, 1976.

   **This guide relates particularly to the Occupation Skills competency area.

7. Schoolfutures, Inc., Educational Support Center, 2092 East Main Street, Hillsboro, Oregon 97213

   **Schoolfutures, Inc. is brokering company that matches client needs with a variety of commercially available materials in vocational and job-related education. Materials available through Schoolfutures, Inc., relate particularly to Pre-employment and Work Maturity competencies.

8. Lee Schuff, Educational Resource Center, Fox Valley Technical Institute, P.O. Box 2277, Appleton, Wisconsin 54913.

   **Audiotapes and videocassettes supporting compentency-based vocational education. These relate particularly to the Occupational Skills competency area.

9. <u>Vocational Training Guide</u>, U.S. Department of Labor, Employment and Training Administration, Office of Job Corps.

   **This guide can be of assistance with the Occupational Skills competency area.

10. Vocational-Technical Education Consortium of States (V-TECS), Commission on Occupational Education Institutions, Southern Association of Colleges and Schools, 795 Peachtree Street, N.E., Atlanta, Georgia 30308.

   **V-TECS produces and sells materials for use in vocational-technical education curriculum development, program planning and evaluation. Materials consist of worker-validated catalogs of performance objectives and performance guides. These materials relate to the Occupational Skills competency area.

C. List of Prime Sponsors Participating in the Consolidated Youth Employment Program (CYEP)

PENOBSCOT CONSORTIUM
333 Illinois Avenue
P.O. Box 1136
Bangor, Maine 04401
(207) 945-9431

MORRIS COUNTY EMPLOYMENT & TRAINING ADMINSTRATION
3 Schuyler Place
Morristown, New Jersey 07960
(201) 285-2762

ERIE COUNTY DEPARTMENT OF EMPLOYMENT AND TRAINING
G. Daniel Baldwin Building
1005 State Street
Suite 1215
Erie, Pennsylvania 16501
(814) 453-5838

ESCAMBIA COUNTY CETA
Town and Country Plaza Building
Suite 414
Pensacola, Florida ~~32505~~
(904) 436-9367

SOUTH FLORIDA EMPLOYMENT AND TRAINING CONSORTIUM (SFETC)
7880 Biscayne Boulevard
Miami, Florida
(305) 638-6819

ROCK ISLAND COUNTY OFFICE OF CETA PROGRAMS
416 19th Street
Rock Island, Illinois 61201
(309) 793-5227

CITY OF DULUTH-CAREER DEVELOPMENT CENTER
206 West Fourth Street
Duluth, Minnesota 55806
(218) 723-3496

CENTRAL TEXAS MANPOWER CONSORTIUM
c/o Central Texas College
Highway 190 West
P.O. Box 108
Killeen, Texas 76541
(817) 526-1320

PENINSULA OFFICE OF MANPOWER PROGRAMS
2017 Cunningham Drive
P.O. Box 7489
Hampton, Virginia 23666
(804) 838-5206

BALANCE OF STATE - KANSAS
Department of Human Resources/CETA
708 Jackson
P.O. Box 1556
Topeka, Kansas 66601
(913) 296-3031

CITY OF TORRANCE - OFFICE OF CETA PROGRAMS
3231 Torrance Boulevard
Torrance, California 90501
(213) 328-5310 X331

YAKIMA COUNTY CETA
2011 South 64th Avenue
Yakima, Washington 98903
(509) 575-4252

BALANCE OF STATE - WASHINGTON
Employment and Training Division
1007 South Washington Street
Olympia, Washington 98504
(206) 754-1055

APPENDIX B

SAMPLE COMPETENCY DEVELOPMENT PLAN

SAMPLE COMPETENCY DEVELOPMENT PLAN

In order to clarify the purposes of the youth employability program of the balance of state CETA prime sponsor, to improve communication and cooperation among agencies and organizations interested in youth employabilty development, and to improve accountability of youth employability programs, a competency development project is being undertaken. The specific objectives of the project follow:

- To establish a complete list of employability competencies
- To establish relative importance among the various competencies
- To determine responsibility for providing services and activities that lead youth to competency development

Data Collection Analysis and Reporting Procedures

Because of the nature of the community and a desire for widespread community involvement in the competency development effort, the following procedures will be used to collect information:

Phase I

- A series of five open forum meeings will be held in key locations throughout the area.

- A group of no more than 25 persons will attend each meeting. Each person will be invited by letter and asked to confirm attendance. Alternates will be invited for those who cannot attend so that there are 25 persons at each meeting.

- The group at each meeting will be representative of all interested agencies and organizations as listed below.

- Each meeting will be four hours in length so that participants can drive in, meet and drive back in one day.

- A trained facilitator will be identified and asked to facilitate all five meetings. An honorarium will be paid if necessary.

- The initial part of each meeting will be devoted to an explanation of the project and group building activities. The remaining portion of the meeting will follow open forum processes with small groups working together and then reporting back to the large group.

- The ideas from the small groups will be synthesized together into a single listing of employability competencies. The entire group will be involved in the synthesis process.

- The ideas from the five meetings will be synthesized into a single list of employability competencies. The list will be distributed with a letter of thanks to all participants and youth advisory council members. The list will provide the basis for the survey in Phase II.

Phase II

- Using the competency list generated through the open forum process, an opinionnaire will be constructed to determine the relative importance of each competency and to discover various agencies and organizations that provide services or activities that lead to the development of each competency. There will be two basic questions asked in relationship to each competency. They are:

  1. How important is the competency to getting and holding employment?
  2. Do you or does your agency or organization provide services or activities that help youth develop the competency?

- The survey form will be developed by a consultant, reviewed by the youth advisory council and pilot tested with ten individuals before the final form is printed and distributed.

- The survey will be distributed to all or a sample of individuals in each group listed below under "Participants." There will be a postage-paid return envelope included for the convenience of the persons completing the form. A cover letter will explain the competency development effort and urge the person to complete the opinionnaire. The cover letter will be signed by the governor or lieutenant governor and will be addressed individually to the person being asked to complete the form.

- Question One on the survey will allow response on a five point scale of importance in which five (5) will represent very important and one (1) will represent not important. Question Two will be answered either yes or no. The response will be to check the appropriate spaces.

- The relative importance will be determined by the average rating by the groups.

- Results of the survey will be analyzed for each group and for the combination of all groups. The report will describe areas of agreement among groups as well as areas of disagreement. The competencies will be presented in rank order from highest to lowest average score.

- The answer to Question Two will be used to discover agencies and organizations that are providing services and/or activities for specific competencies. The analysis will show which competencies are being worked on by one or more agencies or organizations and which ones are not being developed. The report will show which agencies or organizations are working on the same competencies, thus setting up the possibility of cooperation.

- The results of the survey will be sent to each person who completes the form and will be publicized widely through news releases, radio and TV announcements and direct mailings to schools, Chamber of Commerce members and service club members.

Participants

Individuals representing the following key groups will be included in both phases of the project:

- Youth ages 14 to 18. Lists will be obtained from schools, employment service, alternative nonpublic schools and CETA prime sponsors.

- Parents of youth. List will be obtained from the same sources as for youth.

- Employers. Lists of contact persons will be obtained from Chambers of Commerce, vocational education programs, service clubs, government agencies and businesses.

- School staff. List will be obtained from schools.

- Staff from CETA, employment service, and alternative nonpublic schools. Lists will be obtained from the agencies.

- Representatives from regional economic development councils. Names of contact persons will be obtained from the councils.

Anticipated Final Product

The final product will be a list of employability competencies. Three levels of specificity in expression will be included. The three levels are competency areas, competencies and competency indicators. Standards (benchmarks) will be set in a later effort. An example of the three-level system follows:

Competency Area:	Work Maturity
Competency:	Demonstrate appropriate work attitude
Competency Indicators:	- Shows interest in the job - Observes regulations, policies and procedures - Cares for the property of others - Uses correct communications channels - Does appropriate share of work - Shows a willingness to learn

The final product will also have an explanation of the project and the use to be made of the list. The relative importance of each competency will be shown also.

Uses of the Final Product

The set of competencies will be used in the following ways:

- To communicate to employers the intent of youth employability programs
- To establish cooperative efforts with other agencies or organizations in delivering services or activities to youth
- To develop procedures to assess competency development by youth
- To improve accountability for development of youth employability
- To improve procedures for documenting and reporting competency development of individual youth

Resources

The following resources have been allocated to the effort:

- $2000 from the balance of state CETA prime sponsor budget
- 25 percent of the youth coordinator's time
- 10 percent of time from counselors at three secondary schools
- Printing of survey forms at cost of materials by a local business
- Volunteer time from Chamber of Commerce representatives from two chapters

Timeline

Start	October 15
Conduct open forum meetings	October 22 and 29 November 3, 10, and 17
Compile results and send report	December 15
Develop survey instrument	February 1
Send survey	February 15
Send followup to nonrespondents	March 7
Analyze data	April 15
Prepare and distribute final report	May 15

(end of sample plan)

APPENDIX C

SAMPLE COMPETENCY SETS

Work Maturity Competencies

Competencies in this domain represent the skills and attitudes essential to function as a valued employee. The skills and attitudes developed in work maturity will enable participants to meet employer demands for getting work done, getting along with supervisory and other personnel and taking the initiative for the benefit of the employer and oneself.

The participant will:

1. Demonstrate dependability
   - Be in attendance regularly
   - Be punctual
   - Notify others when absence or lateness is necessary
2. Demonstrate appropriate appearance
   - Be groomed properly
   - Be dressed properly
3. Demonstrate appropriate work performance
   - Meet standards for quantity of work
   - Meet standards for quality of work
   - Describe the consequences of errors
4. Demonstrate appropriate interpersonal skills
   - Relate appropriately to one or more supervisors
   - Relate appropriately to co-workers
   - Show willingness and ability to work cooperatively with others
5. Demonstrate appropriate work attitudes
   - Describe appropriate work attitudes
   - Show interest in the job
   - Observe regulations, policies and procedures
   - Care for the property of others and the employer
   - Use correct communication channels
   - Do an appropriate share of work
   - Show a willingness to learn

6. Demonstrate work adjustment skills

- o Keep trying in spite of problems and setbacks
- o Resolve conflicts in constructive ways
- o Accept things that cannot be changed
- o Work toward changes that are possible and beneficial to both employer and employee
- o Adjust to new assignements
- o Work under pressure of deadlines and heavy demand periods
- o Use good judgment in emergencies, crises and unexpected events

7. Demonstrate responsibility

- o Practice good safety habits
- o Accept responsibility for and consequences of own behavior
- o Follow through on commitments
- o Check quality of own work
- o Meet deadlines

8. Demonstrate time management skills

- o Organize and schedule tasks
- o Set priorities for work to be done
- o Plan for unexpected events

9. Demonstrate initiative and resourcefulness

- o Know what has to be done
- o Do work on own with minimal supervision
- o Contribute to the organization by recommending better ways of doing things
- o Inform supervisor of unused skills and abilities

Pre-Employment Competencies

Competencies in this domain cover the knowledge and skills each CETA participant needs to make a variety of occupational decisions and to effectively seek and enter employment. These competencies orient the CETA participant to the work environment. The emphasis is on job planning and the development of occupational self-control.

The participant will:

1. Describe personal characteristics that relate to employment

   o Describe methods for gaining information about self

   o Identify interests, abilities, limitations, short- and long-range goals

2. Explain conditions associated with work

   o Describe general characteristics of jobs and work environments (routine nature of most work, need for on-the-job teamwork, need for productivity and quality control, relationships between work and leisure, etc.)

   o Relate education and experience to job entry and advancement

3. Explore job preferences

   o Name preferred jobs

   o Locate information about preferred jobs

   o Describe preferred jobs (setting, hours, pay rates, entry level qualifications)

   o Match personal characteristics/interests/needs with preferred jobs

   o Name jobs that could be entered directly and those preferred jobs that require more training or experience

4. Summarize job market conditions

   o Name sources of information about the job market

   o Describe market characteristics of preferred jobs

   o Predict availability of preferred jobs

   o Select one or more preferred jobs for job search effort

5. Locate job openings

   o Name helping agencies and describe services available

   o List sources of information that can be used to find vacancies

   o Use information resources to find out about job openings

6. Apply for a job

   o Prepare a personal fact sheet (simple resume)

   o Complete a job application

7. Interview for a job

- o Prepare for an interview (rehearse, dress appropriately, etc.)
- o Interact effectively with an interviewer (maintain eye contact, answer questions directly, avoid slang, ask appropriate questions about the job, etc.)

8. Start a job effectively

- o Accept a job offer appropriately (positive approach, direct contact)
- o Gather necessary start-up information (when? where? resources needed?)
- o Describe fringe benefits
- o Complete paperwork related to job start-up and fringe benefits
- o Calculate take-home pay and budget it
- o Obtain transportation to and from job
- o Obtain needed job support services (day care, etc.)

9. Develop a job plan

- o Set short and long range job plans
- o Describe opportunities for advancement above entry level
- o Describe techniques for getting ahead on-the-job (consistent high performance, extra effort, positive attitude)
- o Describe how to get additional skill training
- o Relate income to immediate and long range personal goals

10. Solve on-the-job problems

- o Describe union benefits and responsibilities of membership
- o Cite labor contract terms and grievance procedures
- o State the practical applications of labor, civil rights and safety laws

11. Plan a job change

- o Cite reasons for changing jobs
- o Describe how to end employment appropriately (letter of resignation, obtaining letter of recommendation from employer, etc.)
- o Locate job change advice
- o Plan a job change that will result in a smooth work transition

Educational Skill Competencies

Competencies in this area represent the basic skills and attitudes necessary for successful employment and continued learning. Included in this area are the skills of communication, mathematics, use of information resources and reasoning. The competencies developed in this area will have application in the other three competency areas as well as in continued learning and other life skills areas.

The participant will:

1. Communicate through writing and speaking

    - Write legibly
    - Select and use job-related terms
    - Complete business forms
    - Write terse factual memos
    - Write business or employment-related letters
    - Write narrative reports
    - Take notes during informational meetings
    - Speak distinctly at appropriate volume levels
    - Participate in task-oriented conversations and in group discussions
    - Express one's point of view regarding a job-related issue
    - Pass on task directions to others
    - Conduct interviews with supervisors to gain job-related information
    - Use the telephone to convey information

2. Understand written and oral communications

    - Read business forms, notes, memos, charts, tables and technical or reference books for their literal content (literal comprehension)
    - Relate written information to job requirements or problems (interpretive comprehension)
    - Define terms and abbreviations related to jobs or employment
    - Locate gross grammatical or procedural errors in completed forms, memos, letters or reports
    - Complete job-related tasks and activities using written directions
    - Listen attentively
    - Maintain eye contact with speaker
    - Gesture appropriately while listening

- Paraphrase to confirm understanding of speaker's intent
- Distinguish between fact and opinion in written or oral communication
- Check assumptions by asking closed questions
- Describe pictoral, graphic or symbolic displays using words
- Complete job-related tasks following oral directions

3. Apply mathematics skills

- Add, subtract, multiply and divide whole numbers, decimals and fractions
- Perform operations in correct order when solving problems involving mixed operations
- Solve job-related word problems involving mixed operations
- Read measurement scales
- Measure using metric and English scales
- Verify accuracy of measurements and calculations
- Read numerical values from graphs, charts and tables
- Use measurement equivalents, ratios and proportions
- Estimate numerical quantitities (measurements, costs and time)
- Compare numerical values
- Perform calculations and transactions involving money
- Calculate amounts needed to do practical jobs
- Compute averages
- Interpret descriptive statistics data (mean, range, mode)
- Calculate amounts needed to do practical jobs (area, volume, linear feet, etc.)
- Perform operations with time
- Operate four-function calculator
- Prepare simple scale drawings or informational sketches

4. Use information resources

- Match resources to information needs
- Locate resource materials
- Locate experts and obtain advice
- Obtain information from books
- Use the dictionary
- Synthesize information
- Apply information to job-related problems

5. Apply reasoning processes

- o Sort objects and data
- o Rank objects according to criteria
- o Rate objects using qualitative criteria
- o Develop classifications for objectives
- o Sequence tasks to achieve outcomes
- o Prioritize tasks
- o Establish goals
- o Prepare plans
- o Diagnose problems
- o Identify solution alternatives
- o Evaluate solutions using criteria
- o Select alternative most likely to produce desired results
- o Set standards (quality, quantity, time)

<u>Occupational Skill Competencies</u>

The area of employability competence includes knowledge and skills needed to perform job tasks successfully. These skills are more technical and specialized and relate to one or a group of specific occupations. They are sometimes called vocational skills.

It is impossible to develop a single set of competencies that applies to all occupations. It is more usual to develop a set of competencies that pertain to a specific occupation--welder for example. If this approach is taken, it is necessary to develop many sets of competencies to meet diverse needs of youth and employers.

A second approach is to develop a more general set of competencies that fit a cluster of related occupations--metals for example. In this case, there are fewer sets of competencies, but the copmpetencies do not fit a single occupation perfectly.

A third approach is to develop a set of generally useful occupational skills. This set would include competencies useful across a wide range of occupations. The benefit is having to develop only a single set of competencies; the problem is that the competencies will not fit any occupation closely.

Each local area has a choice of approaches. A sample set of competencies for each of the three approaches has been developed to facilitate decision making.

Occupation Specific Competencies--Welder

The participant will demonstrate:

1. Knowledge of metals

   - o Properties of metal
   - o Structural shapes of metals

2. Oxyacetylene welding skills

   - o Safety rules and terminology
   - o Equipment use and care
   - o Cutting with oxyacetylene equipment, straight lines, circles and curves, bevels
   - o Piercing techniques
   - o Cutting round stock and pipe
   - o Puddling in flat position
   - o Beading with rod
   - o Fillet welds
   - o Butt joint welds
   - o Flange joint welds
   - o Lap joint welds
   - o Corner joint welds
   - o Bronze welding
   - o Cast iron welding
   - o Silver brazing
   - o Soft soldering
   - o Welding aluminum, stainless steel, magnesium and white metal

3. Metal arc welding

   - o Safety rules and terminology
   - o Equipment use and care
   - o Continuous bead welds
   - o Wash bead welds
   - o Fillet weld
   - o Square and vee butt joint welds
   - o Outside corner welds

Occupational Cluster Competencies--Metals Cluster

Participants will demonstrate:

1. Knowledge of the scope and distribution of various occupations in the metals industry in the local area

   - Cite local businesses that hire people with metal working skills
   - Describe ten occupations in the metals industry
   - Describe demand for metal workers in the local labor market
   - Describe metal industry trade and professional organizations

2. Common sheet metal shop operations

   - Use and care of equipment, including safety
   - Sketch and make sheet metal layouts
   - Shape, bend and fold sheet metal
   - Join sheet metal by riveting, soldering, seaming and making lock joints

3. Common welding operations

   - Use and care of equipment, including safety
   - Cutting metals
   - Joining metals by arc and oxyacetylene methods

4. Common machine shop operations

   - Use and care of equipment, including safety
   - Use and care of measurement instruments
   - Machine round parts
   - Machine flat parts
   - Machine threads

5. Common foundry operations

   - Use and care of equipment, including safety
   - Ram and pour a sand casting

6. Use of a variety of basic metals references

   - Charts and tables
   - Technical information

Generally Useful Occupational Skills

Participants will demonstrate:

1. Numerical skills

   - Calculations and transactions involving money
   - Make and use graphs, charts and tables
   - Use measurement equivalents, ratios, proportions
   - Estimate numerical quantities
   - Compare numerical values
   - Calculate amounts needed to do practical jobs
   - Interpret statistical data

2. Communication skills

   - Explain, describe, demonstrate and give directions
   - Write legibly
   - Speak clearly
   - Write reports and summaries
   - Write letters, want ads and telegrams
   - Understand and follow written instructions, directions and information
   - Understand and follow spoken instructions, directions and information
   - Understand and use pictorial, graphic and symbolic information
   - Interact verbally with others

3. Manual-perceptual skills

   - Use common tools and equipment
   - Make and assemble useful objects
   - Adjust, repair and maintain common tools and equipment
   - Read displays and scales
   - Make visual representations

4. Information-processing and decision-making skills

- Remember specifics, procedures and principles that are basic to continued learning and that are frequently used
- Apply concepts, principles and procedures in circumstances different from those in which they were learned
- Analyze information and define problems
- Collect and organize data
- Develop and evaluate alternatives
- Choose from among alternatives in terms of consistent criteria
- Devise plans, new ideas and better ways of doing things
- Implement plans and modify based on feedback

APPENDIX D

STARTER LISTS OF PUBLISHED INSTRUMENTS

STARTER LISTS OF PUBLISHED INSTRUMENTS

Certain features of the instrument lists provided in this section are important to note. First of all, not all available instruments are listed. An attempt was made to present the instruments which are widely used now or seemed most likely to be of use in employment training. These instruments have all been published within the last ten years and represent a wide range of publishers. The inclusion of an instrument does not imply our endorsement for use in a particular situation. That decision must be made locally based on review using the guidelines presented in Chapter Three. Another notable feature of the list is that it contains almost no checklists or rating scales for on-the-job behavioral observation or product reviews. Generally, these instruments need to be developed specifically for the situation and are not available from publishers. One would be well-advised, though, to contact other employment and training projects to see if they have instruments available which could be adapted for use in your situation.

Two lists of published instruments are provided. The first one covers both work maturity and pre-employment competencies, since published tests often do not make distinctions between these categories. This list also includes instruments focused on general aptitude and interest which are not linked to specific competencies but may be useful in initial assessment to gain a better understanding of the person. Computerized career information delivery systems are now being developed in many states to help people determine career interests. Contact your state Occupational Information Coordinating Committee to obtain information on these and various commercial systems. They may also be very useful in initial assessment.

The second list presents knowledge tests related to basic educational skills. Most of the tests described here are ones which report criterion-referenced rather than norm-referenced scores. Norm-referenced test scores reflect how one examinee compares to another examinee or group. The most common types of norm-referenced scores are percentiles, grade equivalent scores and stanines.* Criterion-referenced scores compare an examinee's performance to prespecified criteria, without regard to the performance of others. Criterion-referenced scores are frequently expressed as "percent of objectives mastered" and "percent of items correct for each learning objective."

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*Percentiles indicate the percent of people scoring at or below a given score. For example, if a person were at the 80th percentile, 80 percent of the people would have received equal or lower scores. A grade equivalent score indicates a person's performance on a particular test relative to the median performance of students at a given grade level and month. For example, a fifth grader who receives a grade equivalent score of 8.2 on a reading test achieved the same raw score performance as the typical eighth grader in the second month of eighth grade would be expected to achieve on the <u>same fifth grade test</u>. It does not mean the fifth grader can do eighth grade work. Stanines constitute a standard score scale consisting of nine values with an average of five.

Criterion-referenced scores are particularly useful for a competency-based training program. These scores illustrate the extent to which a person has acquired certain specific skills or knowledge. It is seldom of use to know how one person compares to some national group.

Another problem with norm-referenced scores is that they are frequently thought to imply certain standards. In particular, it is often assumed that an above average score is satisfactory, and a below average one unsatisfactory. By definition, half the people tested must be above average and half below. Whether "average" performance is satisfactory, below satisfactory or superior is another issue entirely. This decision requires determining what specific tasks a person needs to be able to do, and what levels of performance within each task are acceptable.

Grade equivalent scores present a particular problem. On many standardized tests the grade equivalent score scale is constructed in such a way that a score as high as 6.0 may be equivalent to the chance score.* On such a test, results showing that an adult is reading at the fifth grade level only indicate that the test was too difficult. There is no way to know whether the person has some reading skills or was simply guessing in response to test questions.

The Guide to Adult Functional Literacy Assesment: Using Existing Tests (Anderson, 1981) contains comprehensive lists of educational skills tests which do include norm-referenced tests. It also includes tests which measure a person's ability to apply basic skills to everyday non-job-related activities (e.g., reading road signs, balancing a checkbook, reading a TV schedule). These non-job-related activities are not likely to be included in the four job related competency areas focused on in this handbook but they are sometimes taught in employment programs.

Lists of assessment instruments for occupational skills are not provided because of the wide variety of occupations which could be covered. Most training use simulations because this is the approach that will best show (as compared to paper and pencil knowledge tests) that the person has the skills required in the occupation.

Comments about the quality of instruments have been drawn from The Mental Measurement Yearbook (Bucos, 1978). The yearbook, published about every six years, contains reviews of nearly all published tests. It is an excellent reference for determining what published instrument exists which may be best for a particular situation.

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*The chance score is the number of items one would expect a person to answer correctly on a multiple choice test merely by guessing.

STARTER LIST OF PUBLISHED ASSESSMENT INSTRUMENTS: PRE-EMPLOYMENT AND WORK MATURITY COMPETENCIES

1. Assessment for Career Education (ACE), 1977, grades 3-12, PREP, Inc., 1575 Parkway Ave., Trenton, New Jersey 08628.

   The Assessment for Career Education was developed to measure the outcomes and objectives identified by the U.S. Office of Education which have become the central concept of career education across the nation. It contains multiple choice test items with scores reported in terms of mastery of the eight major objectives and 26 sub-objectives of career education. Self-scoring or computerized scoring is available. Three levels of the test exist.

2. Career Maturity Inventory (CMI), 2nd edition, by John O. Crites; 1978; Grades 6-16; CTB/McGraw-Hill, Del Monte Research Park, Monterey, California 93940.

   The Career Maturity Inventory consists of an Attitude Scale (available in a screening and a counseling form) and a Competence Test. The Attitude Scale contains 50 items and measures decisiveness, involvement, independence, orientation and compromise in career decision making, and requires 30-40 minutes to administer. The Competence Test contains 100 items and assesses abilities in self-appraisal, occupational information, goal selection, planning and problem-solving, and requires approximately two hours to complete. Tests are available in hand-scorable or machine-scorable editions, and yield raw scores which can be converted to percentile ranks or standard scores using the norms provided, or local norms. Suggested uses for the test include studying career development, screening for career maturity, assessing guidance needs, evaluating career education, and testing in career counseling.

3. Career Skills Assessment Program (CSAP): 1978; Grades 9-14 and adults: The College Board, 888 Seventh Avenue, New York, New York 10019.

   The Career Skills Assessment Program was developed to identify the skills most central to successful career development and to provide the means for assessing student competencies in these areas. CSAP consists of six separate self-assessment tools covering skills in self-evaluation and development, career awareness, career decision making, employment-seeking, work effectiveness, and personal economics. Each area has 60-70 questions and can be completed in about one hour. In addition to printed materials, a sound filmstrip for staff and student orientation is provided. Materials can be hand scored, but those requesting central computer scoring have available a combination of norm-referenced and criterion-referenced interpretations. They provide class as well as individual summary reports. Validity studies have not yet been done; thus, users must carefully review items for quality and consistency for competencies being taught. The reading level (mainly grade 9-11) may be too difficult for some persons. Also, the range of jobs discussed goes beyond those likely to be involved in CETA projects.

4. Program for Assessing Youth Employment Skills (PAYES), 1979; individuals with low verbal skills; Cambridge Book Company, 888 Seventh Avenue, New York, New York 10019.

   PAYES is designed to assist program directors, counselors, and teachers in the guidance of persons with low verbal skills as they prepare for entry level employment. It is based on extensive research in measurement by ETS for school dropouts, potential dropouts and disadvantaged youth. The battery is divided into three general categories: Attitudinal Measures (job holding skills, attitude toward supervision, self-confidence); Cognitive Measures (job knowledge, job-seeking skills, practical reasoning); and a Vocational Interest Inventory. Total testing time is approximately 75 minutes. Measures of validity and reliability are presented in the technical manual.

5. Strong-Campbell Interest Inventory, revised edition, by Edward K. Strong and David P. Campbell; 1977; Ages 16 and over; Stanford University Press, Stanford, California 94305.

   The Strong-Campbell Interest Inventory is designed to help individuals discover interests in the following occupational themes: investigative, artistic, realistic, conventional, social, and enterprising. Basic interest scales are available for the following: adventure, agriculture, art, athletics, business management, domestic arts, law/politics, mathematics, mechanical activities, medical science, medical service, merchandising, military activities, music/dramatics, nature, office practices, public speaking, religious activities, sales, science, social service, teaching, and writing. Individuals are also rated as to how their interests compare with individuals already working in 124 different occupations. An academic orientation scale and introversion-extroversion scale are also included. The test requires from 20-30 minutes to complete, and scoring must be purchased through authorized scoring agencies.

6. USES General Aptitude Test Battery (GATB) Forms A, B, C, and D: 1970; Grades 9-12 and adults; United States Department of Labor, Manpower Administration, Washington, D.C. 20210.

    GATB is a multiple aptitude test battery testing the following areas: intelligence, verbal, numerical, spatial, form perception, clerical perception, motor coordination, finger dexterity, and manual dexterity. Administration time is approximately two and one-half hours for the total battery. Also available is the USES Nonreading Aptitude Test Battery, a comparable instrument for nonreading populations. GATB was developed by the United States Employment Service for use in its occupational counseling program. Minimum aptitude scores and norms for specific occupations are provided for use in counseling. Use of the GATB as a measure of intelligence is not advised.

7. Vocational Opinion Index (VOI), Forms A and B; Associates for Research in Behavior, Inc., The Science Center, 34th and Market Street, Philadelphia, Pennsylvania 19104.

    The Vocational Opinion Index is a short paper-and-pencil test to measure an individual's Job Readiness Posture (JRP) - attitudes, perceptions and motivations which impact on ability to obtain and maintain a job. The 58 item VOI can be administered in about 20 minutes and assesses the following dimensions: attractions of work, losses associated with obtaining and maintaining a job, and barriers to employment. The test provides a diagnosis of reasons contributing to an individual's classification as a potential nonworker, and can be used to develop prescriptive material to improve the JRP. The test, available in English and Spanish, must be scored by the publisher. The VOI was designed, tested and normed specifically for the economically disadvantaged population. Research has been done to establish the validity and reliability of VOI.

8. Wide Range Employability Sample Test (WREST) by Joseph F. Jastak and Sarah Jastak; 1980; Ages 16-55; Jastak Associates, Inc., 1526 Gilpin Avenue, Wilmington, Delaware 19806.

    The WREST was originally designed for use with mentally and physically handicapped individuals, but has more recently been revised for use with the general population. The ten work sample tasks included are: folding, stapling, packaging, measuring, tag stringing, gluing, collating, color and shade matching, pattern matching, and assembling. Each task takes seven to 15 minutes to complete, while the entire test requires about one and one-half hours for individual administration, and two hours for small groups of three to six persons. Norms are provided for production quantity and production quality for the general population and for special groups.

STARTER LIST OF PUBLISHED ASSESSMENT INSTRUMENTS: EDUCATIONAL SKILLS*

Multisubject Batteries (usually a combination of reading, writing, language arts and/or mathematics)

1. Adult Basic Learning Examination (ABLE), Forms A and B, by Bjorn Karlsen, Richard Madden, and Eric F. Gardner; 1967-74; Adults with achievement levels grades 1-12; Psychological Corporation, 304 E. 45th Street, New York, New York 10017.

   ABLE is a norm-referenced test with subscores available in the following areas: vocabulary, reading, spelling, and arithmetic. The tests are available for adults with skills at the following grade levels: 1-4 (Level 1), 5-8 (Level 2), and 9-12 (Level 3). SelectABLE is available for use as a preliminary screening test to determine the appropriate level of ABLE for each adult. Test administration time for levels 1 and 2 is 145 minutes, and for level 3, 250 minutes. All levels have been validated and reliabilities established with heterogeneous youth and adults enrolled in schools or community-based training programs.

2. Adult Performance Level Survey (APLS); 1976; High school and adults; American College Testing Program, P.O. Box 168, Iowa City, Iowa 52240.

   The APL is a criterion-referenced measure of functional literacy. Scores are available for the following skills: identification of facts and terms, reading, writing, computation and problem solving. Content scores are also computed on the following: community resources, occupational knowledge, consumer economics, health, and government and law. Two levels are available, one for high school students, and one for adults, in either machine or hand scorable editions. Approximate administration time is 60 minutes for the high school level, and 75 minutes for the adult level. Norms, standard deviations, and below, average, and above ratings are given for individuals, as well as groups.. Supplementary directions are given for interpreting the data, and for modifying instruction.

*Most of the instruments included in this section are criterion-referenced tests. If norm-referenced tests are desired, consult the appendix of Guidelines for Selecting Basic Skills and Life Skills Tests (see reference list).

3. Analysis of Skills: Language Arts (ASK-Language Arts) by O. F. Anderhalter, Neil J. Vail, and Joseph F. Papenfuss; 1975-76; Grades 2-8; Scholastic Testing Service, Inc., 480 Meyer Road, Bensenville, Illinois 60106.

ASK-Language Arts is an objective-referenced and norm-referenced test measuring skills in capitalization and punctuation, usage, and sentence knowledge/composing process. Each of 36-58 skills are tested by three items, and the results are given as mastery, partial mastery and non-mastery of each skill. The test is available in six levels, with the overlapping of grades (2-3, 3-4, etc.). Approximate administration times vary from 60 to 90 minutes. Rental and scoring services are available.. No data on reliability is presented, nor are norms given for the skill scores.

4. Diagnostic Skills Battery (DSB), Form A and B; 1977; Grades 1-8; Scholastic Testing Service, 480 Meyer Road, Bensenville, Illinois 60106.

The Diagnostic Skills Battery tests reading and mathematics in four levels for grades 1-8 (Levels 12, 34, 56, and 78), with language arts also included in Levels 34, 56, and 78. The tests are similar to those of the Analysis of Skills test series (published by the same company as described below), but test fewer objectives. DSB focuses on 35-45 objectives in each area at each level, using two items per objective. Test administration time is approximately two hours, 40 minutes. Both objective-referenced scores and norm-referenced scores are reported. The General Manual contains the rationale for the tests as well as an explanation of the scores reported. Descriptions of the standardization procedures, and internal characteristics of the test are also provided.

5. General Educational Performance Index, Forms AA and BB, by Don F. Seaman and Anna C. Seaman; 1981; Adults; Steck-Vaughn Company, P.O. Box 2028, Austin, Texas 78768.

The General Educational Performance Index was devised to measure the extent to which adults are ready to attempt the General Educational Development test. The five subtests include writing, reading, mathematics, social studies, and science. Administration time is approximately three hours. Test scores may be useful for grouping for instructional purposes or following progress in test-retest situations. A description of the test construction and standardization procedures, along with the test's validity and reliability, are included in the Manual of Directions.

6. High School Equivalency Test Guide by Raymond G. Hodges; 1975; Adults; P.A.R. Inc., Abbott Park Place, Providence, Rhode Island.

The High School Equivalency Test Guide is a test primer for the GED, similar in some aspects to the General Education Performance Index described earlier. Subscores are available in the following areas: correctness and effectiveness of expression (spelling, capitalization, punctuation, usage, effectiveness of expression, diction and style); interpretation of reading materials in literature, social studies and general science; and general mathematical ability. The test guide contains 310 multiple choice items.

7. Minimum Essentials Test, Forms A, B, and C, by John W. Wick and Jeffrey K. Smith; 1980; Grades 8-12 and adults; Scott, Foresman and Company, 1900 East Lake Ave., Glenview, Illinois 60025.

The Minimum Essentials Test measures student achievement in reading, language, and mathematics, and provides information on the student's ability to apply basic skills to life situations. An optional writing test is included. The 124-item test requires about one and one-half hours to administer. The reading section covers literal comprehension, inferential comprehension, context clues, and main idea. The language section assesses knowledge in punctuation, capitalization, and sentence structure. The mathematics test covers basic arithmetic operations for whole numbers, fractions, decimals and percents. The life skills section tests the application of those skills in communication; finance; government and law; health, safety and nutrition; transportation; and occupations. Both norm-referenced and criterion-referenced scoring information is available, with standards of mastery set by the local user. Information on the tests' development and additional technical data are provided in the Teacher's Manual.

8. Objectives-Referenced Bank of Items and Tests: Reading and Communication Skills (ORBIT: RCS); 1975; Grades K-Adults; CTB/McGraw-Hill, Del Monte Research Park, Monterey, California 93940.

ORBIT: RCS is a collection of 335 objectives and corresponding test items from which educators can select those most appropriate for their local goals and programs. Objectives and items are available in the following areas: visual discrimination, phonic analysis, structural analysis, word meaning, literal comprehension, reference skills, language mechanics and language expression. Each objective indicates the vocabulary level of the corresponding items (primary through 10th grade). Scores are reported for each subtest with the criterion level for all subtests established at 75 percent. Each subtest requires approximately five minutes to administer. If a set of items requires oral administration, or requires more than one page, that information is noted in the catalog of objectives. Tests are available in two formats, and include an examiner's manual. Objectives booklets are also available. Low reliabilities for subtests, and the need for precise recordkeeping, may be concerns for the potential user.

9. SRA Norm-Referenced/Criterion-Referenced Testing Program; 1971-76; Grades 3-9; Science Research Associates, Inc., 155 N. Wacker Drive, Chicago, Illinois 60606.

The SRA Norm-Referenced/Criterion-Referenced Testing Program is a collection of tests that can be used in a variety of combinations to fit local needs and circumstances. The norm-referenced tests contain 30 items and require 25 minutes to administer. The criterion-referenced tests require 45 minutes to administer and contain 13-15 objectives with three items per objective. Reading CRT's are available in the following areas: phonic analysis, structural analysis, vocabulary, comprehension and study skills. Agencies desiring customized CRTs may select from the Mastery: An Evaluation Tool reading or mathematics objectives. The Survival Skills Reading and Mathematics tests are presented as an optional component. Some technical data is available in the NRT/CRT Interpretive Manual, but close examination should be made of the validity and reliability data of the individual tests being considered.

10. SRA Survival Skills in Reading and Mathematics; 1976; Grades 6-Adult; Science Research Associates, Inc., 155 N. Wacker Dr., Chicago, Illinois 60606.

The SRA Survival Skills Test, a criterion-referenced test, measures 20 objectives in math and 20 objectives in reading. Each objective is measured using three items. The test requires approximately two hours to complete. Tests may be hand or machine scored. Suggested mastery level for each item is 100 percent while mastery level for each test is suggested as 80 percent. The available student data includes the percent of students mastering each objective, performance on each item, and overall test performance. Group data includes the percent of students mastering each objective, the percent of students responding to each item correctly, the average overall test performance, and the distribution of students mastering cumulative numbers of objectives.

11. Steck-Vaughn Placement Survey for Adult Basic Education, Forms I-K, I-L, II-M, and II-Q, by Beth Ann Phillips; Adults with educational skills from grades 1-8; Steck-Vaughn Company, P.O. Box 2028, Austin, Texas 78768.

The Steck-Vaughn Placement Survey for Adult Basic Education is designed to assess skills from a nonreading level through 8th grade. Skills are assessed in the areas of reading, language, and mathematics and include phonics, vocabulary, comprehension, capitalization, punctuation, spelling, English usage, money, word problems, and operations with whole numbers. Test administration time is approximately 15 minutes for each section, or 45 minutes for the entire survey. A word list is used as an initial screening device to prevent learners from experiencing excessive frustration when taking certain parts of this survey. A Skills Breakdown Chart is provided to help identify specific strengths and weaknesses. Prescriptions are given by grade level, keyed to other Steck-Vaughn publications. Technical data is not included in the examiner's manual.

12. Tests of Adult Basic Education (TABE); 1976; Adults with reading levels grade 2-9; CTB/McGraw-Hill, Del Monte Research Park, Monterey, California 93940.

    TABE is a measure of adult proficiency in the basic skills of reading, mathematics and language. The test is available in three levels, E (easy), M (medium), and D (difficult), and requires from 127 minutes to 209 minutes to complete. Subtest scores are reported for vocabulary, comprehension, computation, concepts and problems, mechanics and expression, and spelling. Scores are reported as standard scores and grade equivalent scores. TABE is the adult version of the California Achievement Test (CAT-70), and uses the same basic content and format. Norms are available, but they are based on CAT-70, rather than TABE.

13. USES Basic Occupational Literacy Test (BOLT), Forms A, B, and C; 1973; Educcationally disadvantaged adults; United States Department of Labor, Bureau of Labor Statistics, 1515 Broadway, New York, New York 10036.

    BOLT is a test of basic reading and math skills developed for use with educationally disadvantaged adults. It is available in three forms at four levels: fundamental, basic intermediate, high intermediate, and advanced. Administration of the BOLT is preceded by giving the Wide Range Scale, a brief screening test in reading and math, to determine the appropriate level of BOLT for the individual. Subscale scores are available in reading vocabulary, reading comprehension, arithmetic computation, and arithmetic reasoning. Subtest raw scores are converted to standard scores, which are translated to a GED (General Educational Development) level. Counselors can compare literacy skills on the subtests with occupational skill requirements provided in the supplements to facilitate vocational placement. The entire test requires approximately 130 minutes to administer, and can be hand or machine scored.

STARTER LIST OF PUBLISHED ASSESSMENT INSTRUMENTS: READING TESTS

1. Analysis of Skills: Reading (ASK-Reading) by O.F. Anderhalter and Frances Shands; 1974-76; Grades 1-8; Scholastic Testing Service, Inc., 480 Meyer Road, Bensenville, Illinois 60106.

   ASK: Reading is a criterion- and norm-referenced test measuring skills in the following areas: word analysis, comprehension, and study skills. Skill scores are interpreted as mastery, partial mastery, and non-mastery in the following categories: discrimination, phonetic analysis, structural analysis, word recognition, vocabulary in context, literal comprehension, inferential comprehension, critical comprehension, library and reference skills, organization skills, pictorial and graphic material, and following directions. In most cases, each skill is measured by three items. Total test administration times vary (depending on the test level) from approximately 135 to 175 minutes, divided among three testing sessions.

2. Criterion-Referenced Tests: Reading Tactics, Levels A - F, Olive Stafford Niles and J. Japp Tuinman; 1981; Grades 7-12; Scott, Foresman and Company, 1900 East Lake Avenue, Glenview, IL 60025.

   Reading Tactics is an instructional program which is designed primarily for students who are typically below average in their reading skills. The criterion-referenced tests are the diagnostic and evaluative components of this system. The concepts and skills taught in the Tactics program are defined by 12 Program Objectives and 78 Skills Objectives in the following areas: word attack (context, structure, sound, and dictionary), inferences, central focus, relationships, sentence meaning, judgments, figurative language, imagery, and flexibility. Each objective is measured by a six- to eight-item subtest, which is available in either hand scored or machine scored editions. These tests can be used to their greatest advantage when used in conjunction with the other elements of the instructional program.

3. Fountain Valley Teacher Support System in Secondary Reading (FVTSS-SR); 1976; Grades 7-12; Richard L. Zweig Associates, Inc., 20800 Beach Blvd., Huntington Beach, California 92648.

The Fountain Valley Teacher Support System in Secondary Reading (FVTSS-SR) is a continuation of the earlier edition which was developed for grades 1-6. Sixty-one specific objectives are divided into three subtest areas: comprehension, study skills, and vocabulary. Subtests are of varying lengths with the majority consisting of four or six items. An optional survey test is available for initial screening of students. While the system assesses student mastery of specific objectives and provides references for remediation, the extensive record-keeping required may inhibit some potential users.

4. Gray Oral Reading Test; 1967; Grades 1-Adult; Bobbs-Merrill Company, 4300 West 62nd Street, Indianapolis, Indiana 46268.

The Gray Oral Reading Test is useful as an adjunct to silent reading tests. The test is available in four comparable forms, with 13 passages ranging in difficulty levels from pre-primer through adult. The examiner presents different passages for the student to read aloud, progressing until the student makes seven or more errors on two successive passages. Errors are classified as aid, gross mispronunciation of a word, partial mispronunciation, omission of a word or group of words, insertion of a word or group of words, repetition of one or more words, and inverting or changing word order. Instructions are provided for scoring the four comprehension items given at the conclusion of each passage.

5. Individualized Criterion Referenced Testing: Reading (ICRTR), Forms A and B; 1973-76; Grades K-8; Educational Development Corporation, P.O. Box 45663, Tulsa, OK 74145.

The ICRTR consists of nine levels of tests covering 345 overlapping objectives, with two items per objective. Each level includes from two to nine minibooklets covering from 16 to 72 objectives. Objectives include letter recognition, phonetic analysis, structural analysis, literal and critical comprehension, and vocabulary. Tests are available in machine- and hand-scorable editions. The items appear to have content validity in that they reflect the objectives accurately. The manual does not discuss in detail other questions of objective and item selection, nor does it discuss field test information on final test forms, assignment of objectives to a level, development of the continuum of objectives, and the reliability of the test in general. Test results are reported in the form of a student summary, listing the objectives the student has mastered, as well as the objectives needing review.

6. An Evaluation Tool: Reading (System for Objective-Based Assessment--Reading (SOBAR), Forms L and M by the Center for the Study of Evaluation, University of California at Los Angeles; 1974-76; Grades K-9; Science Research Associates, Inc., 155 N. Wacker Drive, Chicago, Illinois 60606.

SOBAR is a set of criterion-referenced subtests in six areas: comprehension, letter recognition, phonic analysis, structural analysis, study skills and vocabulary. Each grade level test includes from 25-35 objectives, each meassured by three items. Each subtest can be administered in approximately three minutes. The potential user has the option of selecting from 302 objectives for a customized test in either English or Spanish. Scoring services available include performance on each objective, as well as performance on the total test for each pupil, class or system. The manual recommends a program of criterion-referenced probes called Diagnosis: An Instructional Aid. SOBAR provides additional instructional prescriptions based on pages from basal texts and supplementary materials.

7. Performance Assessment in Reading (PAIR); 1978; Grades 7-9; CTB/McGraw-Hill, Del Monte Research Park; Monterey, California 93940.

PAIR provides identification of learner needs in basic reading skills and instructional prescriptions referenced to those skills. The 72-item test is divided into two sections for administration: reading enabling skills and life role applications. Each section requires approximately 50 minutes to complete. Reading subtests include vocabulary, literal comprehension, critical comprehension, and location/study skills. Life role applications include pictorial representation, reference, forms and documents and rules and regulations. Local programs set the standards of mastery. Reporting services are available from the publisher.

8. Power Reading Survey Test by William E. Blanton, James L. Laffey, Edward L. Robbins, and Carl B. Smith; 1973-75; Grades 1-12; BFA Educational Media, 2211 Michigan Avenue, P.O. Box 1795 Santa Monica, California 90406.

The Power Reading Survey Test is a series of three criterion-referenced tests measuring 105 objectives in three areas: word recognition, comprehension and study skills. Test administration time ranges from one to five hours depending on the test level used. Approximate test administration times are one hour for Power 1, two hours for Power 2, and five hours for Power 3. The Power tests are a part of the Power Reading System, a program for diagnosis and remedial instruction which includes lesson plans and additional tests which must be reproduced locally. Some of the tests in each level must be administered individually. A recordkeeping system is included for monitoring the progress of individual students by objective.

9. Stanford Diagnostic Reading Test (SDRT), Forms A and B, by Bjorn Karlsen, Richard Madden, and Eric F. Gardner; 1966-76; Grades 1.5-13; The Psychological Corporation, 757 Third Avenue, New York, New York 10017.

The Stanford Diagnostic Reading Test is available in machine- or hand-scorable editions at four levels. The red level, designed for grades one-three tests abilities in word reading, comprehension, auditory vocabulary, auditory discrimination and phonetic analysis. The green level, for grades two-five, measures auditory vocabulary, auditory discrimination, phonetic analysis, structural analysis, and literal and inferential comprehension. The brown level, for people with reading ability in the four-nine grade range assesses abilities in auditory vocabulary, literal and inferential comprehension, phonetic analysis, structural analysis, and reading rate. The blue level (grades nine-13), tests literal and inferential comprehension, vocabulary (word meaning and word parts), phonetic analysis, structural analysis, and rate (scanning, skimming and fast reading). Administration times vary from 115 minutes to 165 minutes. Content-referenced scores and norm-referenced scores are provided along with suggestions for prescriptive teaching and instructional alternatives.

10. Woodcock Reading Mastery Tests. Forms A and B; by Richard W. Woodcock, 1972-73; Grades K-12; American Guidance Service, Inc., Publisher's Building, Circle Pines, Minnesota 55014.

The Woodcock Reading Mastery Tests is an individually administered test measuring abilities in the following areas: letter identification, word identification, word comprehension, and passage comprehension. Although the predicted administration time is 20-30 minutes, poor readers may require much longer.

STARTER LIST OF PUBLISHED
ASSESSMENT INSTRUMENTS:
MATHEMATICS TESTS

1. Analysis of Skills: Mathematics (ASK-Mathematics) by O.F. Anderhalter; 1974-76; Grades 1-8; Scholastic Testing Service, Inc., 480 Meyer Road, Bensenville, Illinois 60106.

   ASK-Mathematics is an objective-referenced and norm-referenced test measuring skills in the following areas: computational skills, concepts, and applications. Skill scores are provided for the following areas: positive whole numbers, fractions, and decimals; negative integers; computational processes; numbers and numeration systems, properties, and theory; set notation and operation; common measures; metric and nonmetric geometry; percents; statistics and probability; trigonometry; functions and graphs; ratios and proportions; mathematical sentences and algebra; everyday problems; and use of specific concepts. Each skill is tested by three items, and the results are given as mastery, partial mastery, and nonmastery of each skill. The test is available in seven levels, with overlapping of the grades 1-8 (1-2, 2-3, etc.). Approximate administration times vary from 100-180 minutes, divided among three testing sessions.

2. Diagnostic Mathematics Inventory (DMI), Levels A - G, by John Gessel; 1971-75; Grades 1.5-8.5; CTB/McGraw-Hill, Del Monte Research Park, Monterey, California 93940.

   The DMI is a criterion-referenced test measuring 325 specific objectives using four items per objective. The individual diagnostic report and the objectives mastery report for the entire class reflect learning on an objective-by-objective basis. The objectives are in the following general areas: numeration, computation, fractions, decimals, negative numbers, number properties, numerical reasoning, number theory, metric geometry, measurement, money, temperature, time, geometry, percents, and set notation. Suggested mastery level is 75 percent though local standards may be substituted. Included in the testing materials are a teacher's guide and a learning activities guide. Also available are reference guides to each textbook keyed to DMI and a guide to nontextbook materials.

3. Fountain Valley Teacher Support System in Mathematics (FVTSS-M); 1972-74; Grades K-8; Richard L. Zweig Associates, Inc., 20800 Beach Blvd., Huntington Beach, California 92648.

The Fountain Valley Teacher Support System in Mathematics is a series of 786 subtests, each measuring a specific objective in one of the following areas: applications, functions and graphs, geometry, logical thinking, measurement, numbers and operations, problem solving, sets, statistics and probability. The test is administered by tape cassette in both self-scoring and hand-scoring editions. Tests require from 11-25 minutes per subtest. Looseleaf prescription guides and individual record forms are included with the test manual for each grade. While this system assesses student mastery of specific objectives and provides references for remediation, the amount of recordkeeping required may be prohibitive for some instructors.

4. Individual Pupil Monitoring System--Mathematics (IPMS-Mathematics), Forms S and T; 1973; Grades 1-8; Riverside Publishing Company, 1919 South Highland Avenue, Lombard, Illinois 60148.

The IPMS-Mathematics is a criterion-referenced test measuring objectives in the following areas: numeration and number systems, basic mathematical operations, geometry, measurement, problem solving, probability and statistics, and sets. The system includes a series of tests that are grouped into "assessment modules", answer sheets, pupil progress records, teacher management records, behavioral objective booklets, reference booklets for individualizing instruction, and teachers' guides. There are from 47-64 objectives for each grade level, with [illegible]42 objectives in all. The objectives in the assessment module match those generally taught in the fall, winter or spring quarter of each year. Levels one-three have five items per objective, while levels four-eight have ten items per objective.

5. Individualized Criterion Referenced Testing; Math (ICRTM), Forms A and B; 1973-77; Grades 1-8; Educational Development Corporation, P.O. Box 45663, Tulsa, Oklahoma 74145.

The ICRTM consists of eight levels of tests measuring 312 objectives in the following areas: sets; bases/numeration systems; addition and subtraction/whole numbers; place value; equations and inequalities; properties of addition and subtraction; money; time; geometry; fractions; measurement; word problems; multiplication of whole numbers; division of whole numbers; properties of multiplication and division; multiples/prime and composition, factorization; estimation and rounding; graphs and scale drawings; decimals and percents; exponential notation; ratio and proportion; and operations of rational numbers/integers. Objectives are measured by two items each, and are grouped in four or five booklets for each level. Mastery levels are established as 100 percent for all tests. The tests are available in machine- or hand-scorable editions. Test results are reported as a student summary, listing the objectives the student has mastered, as well as the objectives needing review.

6. KeyMath Diagnostic Arithmetic Test by Austin J. Connolly, William Nachtman, and E. Milo Pritchett; 1971-76; K-6; American Guidance Service, Inc., Publisher's Building, Circle Pines, Minnesota 55014.

   KeyMath Diagnostic Arithmetic Test is an individually administered test originally developed for use with educable mentally retarded children. Subtest scores are available in the following areas: numeration, fractions, geometry, symbols, addition, subtraction, multiplication, division, mental computation, numerical reasoning, word problems, missing elements, money, measurement, time and metrics. The items are keyed to objectives and deficit areas are defined in detail, allowing accurate remediation. The items are presented in an easel kit folder and the test requires approximately 30 minutes to administer. The testing packet includes diagnostic records and manual.

7. Mastery: An Evaluation Tool: Mathematics, Forms X and Y; Grades K-9; Science Research Associates, Inc., 155 N. Wacker Drive, Chicago, Illinois 60606.

   Mastery: An Evaluation Tool: Mathematics is a set of criterion-referenced subtests in ten areas--fractional numbers; geometry; integers; measurement; numbers and numerals; sets, functions and graphing; sets, logical thinking and geometry; statistics and probability; whole number computations; and whole numbers. Each grade level test includes from 15 to 40 objectives, each measured by three items. They can be administered in approximately three minutes each. Scoring and reporting are similar to SOBAR with mastery levels at 100 percent for each subtest. A user's guide, manual, and manual supplement are also available.

8. Mathematics: IOX Objectives-Based Tests, Forms A and B; by Ira Moskow, Denis Purcell, and Don May; 1973-76; Grades K-9; Instructional Objectives Exchange, Box 24095, Los Angeles, California 90024.

   Mathematics: IOX Objectives-Based Tests are 280 criterion-referenced tests with five-ten items based on behavioral objectives. The K-6 tests assess skills in the following areas: sets and numbers, operations and properties, numerations and relations, measurement and geometry. Tests for grades seven-nine include measures in the following areas: elements, symbolism, measurement, geometry, operations and relations. Printed on spirit masters, each test requires five-ten minutes to administer.

9. Objectives-Referenced Bank of Items and Tests: Mathematics (ORBIT: M); 1975; Grades K-Adults; CTB/McGraw-Hill, Del Monte Research Park, Monterey, California 93940.

ORBIT: M is a customized, criterion-referenced test consisting of four-item, single objective subtests covering up to 50 objectives. The 507 available objectives correspond with items in the following 18 areas: addition, subtraction, multiplication, division, number and numeration, number theory, number sentences, number properties, set theory, common scales, geometry, measurement, graphs, coordinate geometry, word problems, probability and statistics, algebra, ratio and proportion and percent. Subtests are categorized according to the grade range in which each objective is typically introduced and mastered. Each subtest requires approximately five minutes to administer. If a subtest requires oral administration, or requires more than one page, it is noted in the catalog of objectives available from the publisher. The customized tests are available in two formats, hand-scorable, or machine-scorable, and each includes an examiner's manual.

10. Stanford Diagnostic Mathematics Test is available in machine- or hand-scorable editions at four levels. The red level, designed for grades one-four, tests abilities in number system and numeration-simple and compound, addition and subtraction, story problems, tables and graphs, geometric shapes and properties, time and money. The green level, for grades three-six, tests concepts of whole numbers, decimals, ordering, rounding, addition, subtraction, multiplication, division, simple and compound number sentences, story problems, geometric shapes and properties, metric system, time and money. The brown level (grades five-eight) tests the same concepts as the previous one, with adjustments made for grade level. It also includes both metric and English systems of measure. The blue level, (grades seven-13) measures many of the same concepts as the previous two levels, with the addition of rate problems. Test administration times range from 95-120 minutes per level. Norms are provided, along with percentile ranks and stanines by grade. Individual diagnostic reports and pupil profiles identify individual strengths and weaknesses and facilitate remediation in the general areas. If more detailed information is needed, a locally produced test might serve better.

PUBLISHERS' NAMES AND ADDRESSES

Listed below are assessment instrument publishers mentioned in the Handbook as well as other publishers whom readers may wish to contact for possible assessment instruments.

Academic Therapy Publications
20 Commercial Blvd.
Novato, California 94947

Addison-Wesley Publishing Co., Inc.
South Street
Reading, Massachusetts 01867

American College Testing Program
P.O. Box 168
Iowa City, Iowa 53340

American Guidance Service
Publisher's Building
Circle Pines, Minnesota 50014

Associates for Research in
Behavior, Inc.
The Science Center
34th and Market Street
Philadelphia, Pennsylvania 19104

BFA Educational Media
2211 Michigan Avenue
P.O. Box 1795
Santa Monica, California 90406

Bobbs-Merrill Col, Inc.
4300 West 62nd Street
Indianapolis, Indiana 46268

Brador Publications, Inc.
Livonia, New York 14487

Bureau of Educational Measurement
Emporia State University
Emporia, Kansas 66801

CAL Press, Inc.
76 Madison Avenue
New York, New York 10016

California State Department
of Education
721 Capitol Mall
Sacramento, California 95814

California Testing Bureau/
McGraw-Hill
Del Monte Research Park
Monterey, California 93940

Cambridge Book Company
888 Seventh Avenue
New York, New York 10019

The Center for Applied Research in
Education, Inc.
Route 59
West Nyack, New York 10994

Charles E. Merrill Publishing Company
1300 Alum Creek Drive
Columbus, Ohio 43216

The College Board
888 Seventh Avenue
New York, New York 10019

Cutronics Educational Institute
128 W. 56th Street
Bayonne, New Jersey 07002

Educational Development Corporation
P.O. Box 45663
Tulsa, Oklahoma 74145

Educational Testing Service
Princeton, New Jersey 08541

Educators Publishing Service
75 Moulton Street
Cambridge, Massachusetts 02138

Harcourt, Brace, Jovanovich,
Publishers
757 Third Avenue
New York, New York 10017

Instructional Objectives Exchange
Box 24095
Los Angeles, California 90024

Jastak Associates, Inc.
1526 Gilpin Avenue
Wilmington, Delaware 19806

Kern High School District
2000 24th Street
Bakersfield, California 93301

McGrath Publishing Company
P.O. Box 9001
Wilmington, North Carolina 28402

McGraw-Hill Book Company
8171 Redwood Highway
Novato, California 94947

New Mexico State Department of
Education
Monitor
Education Building
State Capitol
Santa Fe, New Mexico 87501

Northern Illinois University
Alan M. Voelker
Curriculum & Instruction
De Kalb, Illinois 60115

P.A.R. Inc.
Abbott Park Place
Providence, Rhode Island

Paul S. Amidon & Associates, Inc.
1966 Benson Avenue
St. Paul, Minnesota 55116

Prep. Inc.
1575 Parkway Avenue
Trenton, New Jersey 08628

PRO-ED
333 Perry Brooks Building
Austin, Texas 78701

The Psychological Corporation
Harcourt, Brace, Jovanovich,
Publishers
757 Third Avenue
New York, New York 10017

Richard L. Zweig, Associates, Inc.
20800 Beach Blvd.
Huntington Beach, California 92648

Riverside Publishing Company
1919 South Highland Avenue
Lombard, Illinois 60148

SOI Institute
214 Main Street
El Segundo, California 90245

Scholastic Testing Service
480 Meyer Road
Bensenville, Illinois 60106

Scholastic Testing Service
480 Meyer Road
Bensenville, Illinois 60106

Science Research Associates, Inc.
155 N. Wacker Drive
Chicago, Illinois 60606

Scott, Foresman and Company
1900 East Lake Avenue
Glenview, Illinois 60025

Southern Illinois University Press
P.O. Box 3697
Carbondale, Illinois 62901

Southwest Regional Resource Center
127 S. Franklin Street
Juneau, Alaska 99801

Stanford University Press
Stanford, California 94305

Steck-Vaugh Company
P.O. Box 2028
Austin, Texas 78768

Stoelting Company
1350 S. Kostner
Chicago, Illinois 60623

United States Department of Labor
Bureau of Labor Statistics
1515 Broadway
New York, New York 10036

U.S. Department of Labor
MANPOWER Administration
Washington, D.C. 20210

Western Psychological Services
12031 Wilshire Blvd.
Los Angeles, California 90025