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ABSTRACT

This guide is intended to provide vocational administrators with general information about the current state of competency-based test development and specific information about selected products and services that are available or under development. The general information section deals with the types of test products and services that are available (occupation-specific tests, item banks, cognitive tests, performance tests, affective measures, and scoring services), access options (purchase, cost recovery, exchange, consortium membership, testing services, and restrictions), criteria for selecting tests (validity, reliability, criterion-referenced format, appropriateness, currency, local relevance, and convenience and usefulness for local purposes), and procedures for obtaining information (contained in computer databases and print-based resources) about products that are not included in the guide. Specific information is presented in the form of source abstracts describing currently available products and services and an occupation index that cross-references test titles and sources. (MN)

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Competency-Based Testing for Occupational Students: A Resource Guide

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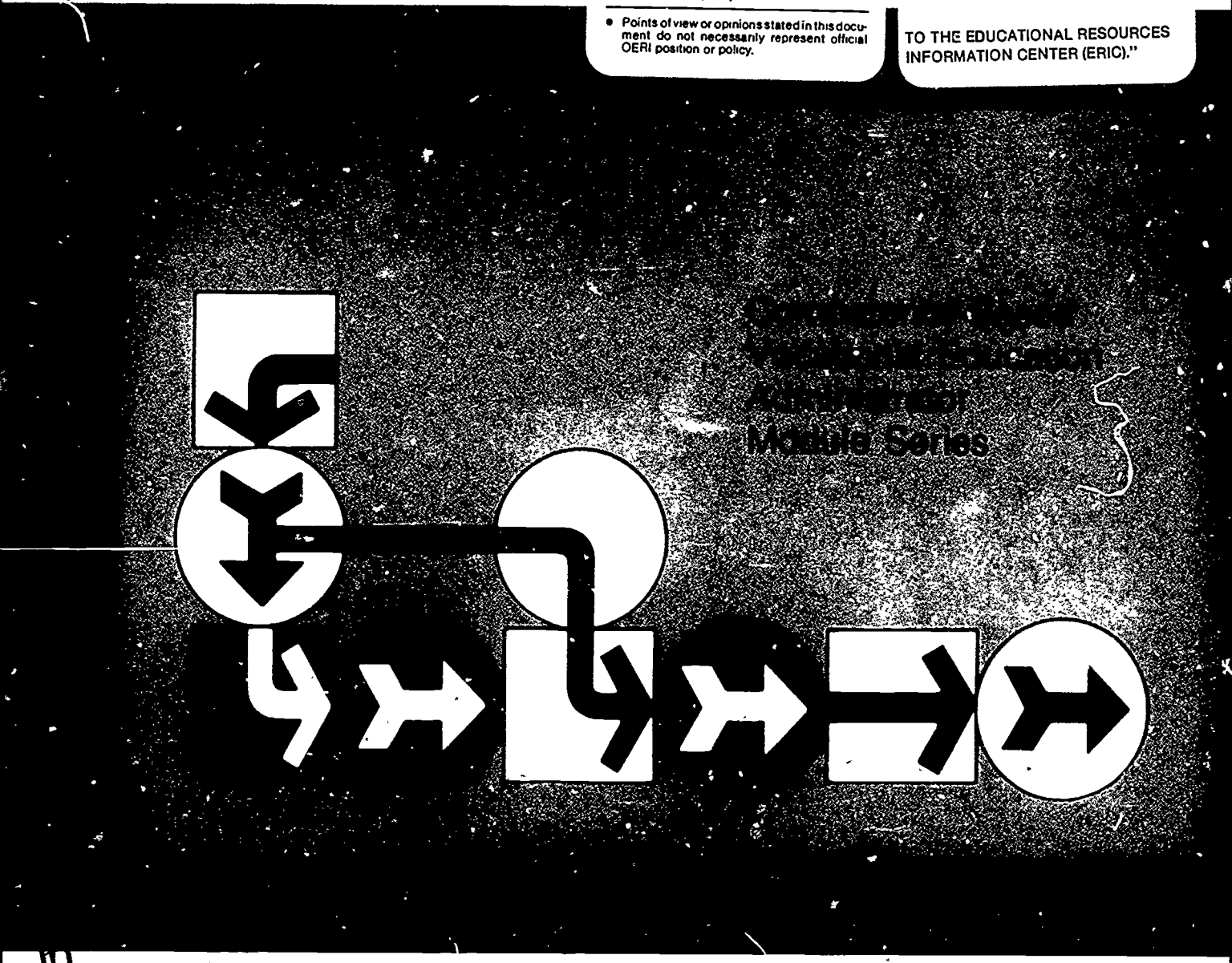

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Direction is given by a representative from each of the states, provinces and territories. AAVIM also works closely with teacher organizations, government agencies and industry.

Competency-Based Testing for Occupational Students: A Resource Guide

COMPETENCY-BASED VOCATIONAL EDUCATION ADMINISTRATOR MODULE SERIES

Consortium for the Development
of Professional Materials for Vocational Education

Robert E. Norton, Consortium Program Director
Catherine C. Fitch, Consultant
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The National Center for Research in Vocational Education
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FOREWORD

Since 1978, a group of states has been working cooperatively with the National Center for Research in Vocational Education to develop leadership training materials for vocational and technical education personnel at the secondary and postsecondary level. The efforts of this Consortium have focused on the development of competency-based administrator education modules and guides on critical issues and areas of management responsibility. During the 1986-87 Consortium year, competency testing for occupational students was identified as an area of concern, which resulted in the preparation of this resource guide.

Many persons participated in the development of this document. Catherine C. Fitch, Consultant, was employed to draft the original manuscript. Lois G. Harrington, Program Associate, assisted with preparation of the initial manuscript and assumed major responsibility for its revision and preparation for publication.

Special recognition also goes to the following persons who provided very helpful field reviews of the guide: Michael K. Curley, Rebecca S. Douglass, Roy Giehls, Barbara Hinton, Ora Kromhout, R. S. Lolla, Jack Nichols, Emma E. Rhodes, W. R. Silkman, Bruce Simpson, John E. Sotah, Evelyn C. Werner, Dolores Wilder, and Lawrence Zane.

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Ray D. Ryan
Executive Director
The National Center for Research
in Vocational Education

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INTRODUCTION

The growth of competency-based education has brought with it the need to provide standardized measures of student performance in vocational-technical programs; a proliferation of occupational tests have been developed to achieve that end. Federal criteria for evaluating vocational-technical programs and numerous state mandates to install performance-based vocational achievement measures by specific target dates have spurred test development even more.

Today tests are being developed at all levels, from individual programs and local education agencies to state departments of education and consortia of states and agencies. It goes almost without saying that "wheels" are being reinvented many times over as developers seek to produce tests for programs that are quite similar. Understandably, there is increasing interest among developers in taking advantage of one another's efforts and building upon existing materials and measures.

In order to avoid great duplication of effort, programs undertaking test development need to be aware of existing resources and to obtain certain information about them:

- o What tests or item banks already exist?
- o What other projects are currently planned or underway that might parallel or overlap with local efforts?
- o Which products have been systematically developed and verified?
- o What systems have been established for developing and verifying test items?
- o What mechanisms exist for sharing information and products?
- o What testing-related services exist that might meet local needs?
- o How can specific products or services be obtained?

Purpose of This Guide

This guide is intended to provide general information about the current state of competency-based test development and specific information about selected products and services that are available or under development.

- o General information addresses types of test products and services available, access options, criteria for selecting tests, and how to find information about products not included in this guide.
- o Specific information is presented in the form of source abstracts for currently available products and services and an occupation index that cross-references test titles with sources. Together, these two components allow you to find information about particular sources (e.g., their policies and products) or to begin from the other direction--a specific occupation--and determine which sources have developed items or tests in that area.

What Is Included

You will not find in this guide a complete listing of all tests that have been developed to date. This is due in part to the constantly changing status of test development: what will exist tomorrow may not have existed yesterday or even today.

Moreover, it was not feasible to contact all programs, at all levels, nationwide, to seek out "low-profile" test development projects. The methods of compiling information (which are described in greater detail in Appendix A) generally consisted of on-line database searches, an electronic call for information sent to all states, review of selected in-print information exchanges and publications, and a great deal of word-of-mouth pursuit of information. While not necessarily "scientific" or exhaustive, this approach did nonetheless produce a substantial amount of useful information about existing materials.

Beyond the limitations imposed by change and methodology, certain limits were intentionally placed on the search for test sources. These can best be explained by what the guide does contain. Included are tests and test item banks that fit the following descriptions:

- o Competency-based--Made up of criterion-referenced items based on verified occupational task lists
- o Vocational-technical--Designed for use with vocational-technical students at the secondary and/or postsecondary level
- o Achievement-based--Designed to measure cognitive, psychomotor, and attitudinal achievement, not vocational aptitude or interest
- o Occupation-specific--Developed for occupational-level (as opposed to unit- or competency-specific) assessment (e.g., the secretarial occupation rather than the unit level of typing a letter)
- o Well-developed--Developed according to sound principles of criterion-referenced item development, and verified (e.g., through expert review and field testing)
- o Part of a major effort--Developed as part of a broad-based test development effort (i.e., one with a well-defined system producing multiple tests)

While unintentional, this guide may overlook some worthy products and projects. During the information search, a few potential sources were interviewed whose programs were well-developed and of interest, but outside the focus of the search. Nonetheless, it is hoped that the sources and products that are included will enable vocational educators interested in competency-based testing to locate others engaged in similar work, who can serve as potential sources of information and materials.

Test Types and Features

A wide variety of test products and services is available. The specific sources and products are described in some detail in the source abstracts. The following is an overview of what is currently available.

Occupation-specific tests. Many occupation-specific tests have been developed in all secondary vocational program areas and in a wide range of postsecondary-level programs. Developed from occupational task lists, tests include criterion-referenced items that have been verified as representative of the competencies required of a worker in the occupation. These tests are usually keyed to locally developed task lists or broader item-bank systems. They are most often shared in "hard copy" (paper) form, although some have been or are being placed in computerized systems that provide for on-line student assessment.

Item banks. Item banks, as denoted by the name, are collections of individual test items from which tests can be created. Stored by computer and keyed to task lists, they may be used to assemble item sets or to custom-design tests. V-TECS (Source Abstract K) has the largest vocational test item bank, although some states are creating their own banks of items developed originally on paper.

Cognitive tests. By far the majority of competency-based tests are measures of cognitive achievement. Multiple-choice items predominate on cognitive tests and item-bank entries, with a few true-false items mixed in. Cognitive tests may be paper-and-pencil or on-screen computer-based instruments.

Performance tests. A few projects have developed performance tests designed to measure achievement of psychomotor skills. Usually these are either (1) product or performance mastery checklists or record sheets or (2) work assignments designed to sample manipulative skills in the occupation. In either case the tests include criteria for evaluating student performance. Test props in some cases are provided as part of the package; in others, they are listed and must be provided by the agency that uses the tests.

Affective measures. This aspect of evaluation seems to have received the least amount of emphasis. Inventories of work habits are available for some programs; in other cases, specific items related to work attitudes are included in either performance checklists or cognitive tests.

Scoring. Most cognitive test packages include scoring keys, the exception being the products of testing services that do their own scoring. Tests may be hand- or machine-scorable, and answer keys are sometimes annotated with explanations of answers so that they can be used as instructional devices. Some computer-based (on-line) instruments provide immediate feedback to the student.

Matters of Access

Tests, test items, and other test services can be obtained in a number of different ways. The following appear to be the most common means of access:

Purchase. Products can be purchased directly from numerous sources. Most such sources distribute catalogs of their products with current prices and terms of availability. Special purchase options are often available, such as individual items, classroom sets, sets of consumables and nonconsumables, sample sets, and demonstration disks. Review copies are available in some cases to those considering purchases.

Cost recovery. Some test developers are not seeking to make a profit on their materials but rather to share their products without added expense to their own budgets. Such sources will usually provide individual copies of materials for the cost of duplication.

Exchange. A few sources noted that they would be willing to share their materials in exchange for other materials, thus expanding both agencies' item banks or test files.

Consortium membership. Regional and national consortia of states and agencies have been established to share the costs and responsibilities of curriculum and test development. Item banks often function on a consortium basis. Consortia operate in various ways. One approach is to share the costs of development and then share materials freely among the members. Another is to accept a contribution of development (e.g., of tests or banks of items) as the price of membership and the right to share in the other members' materials. Some consortia offer products for sale and discount the prices for people in member states.

Testing services. Testing services offer their tests as part of a broader service, which may include scoring, interpretation, and compilation and presentation of results. Sometimes the tests themselves are controlled items, not for individual sale, and must be returned to the test service after use.

Restrictions. Some developers restrict the distribution of their materials in some way (e.g., to bona fide learning institutions, as evidenced by the use of letterhead stationery in placing the order). Administration may be restricted to qualified personnel (teachers, guidance counselors. or test administrators). Conversely, teachers in the given program area may be barred from administering the test, to avoid the possibility of teaching for the test.

Selecting Tests for Local Use

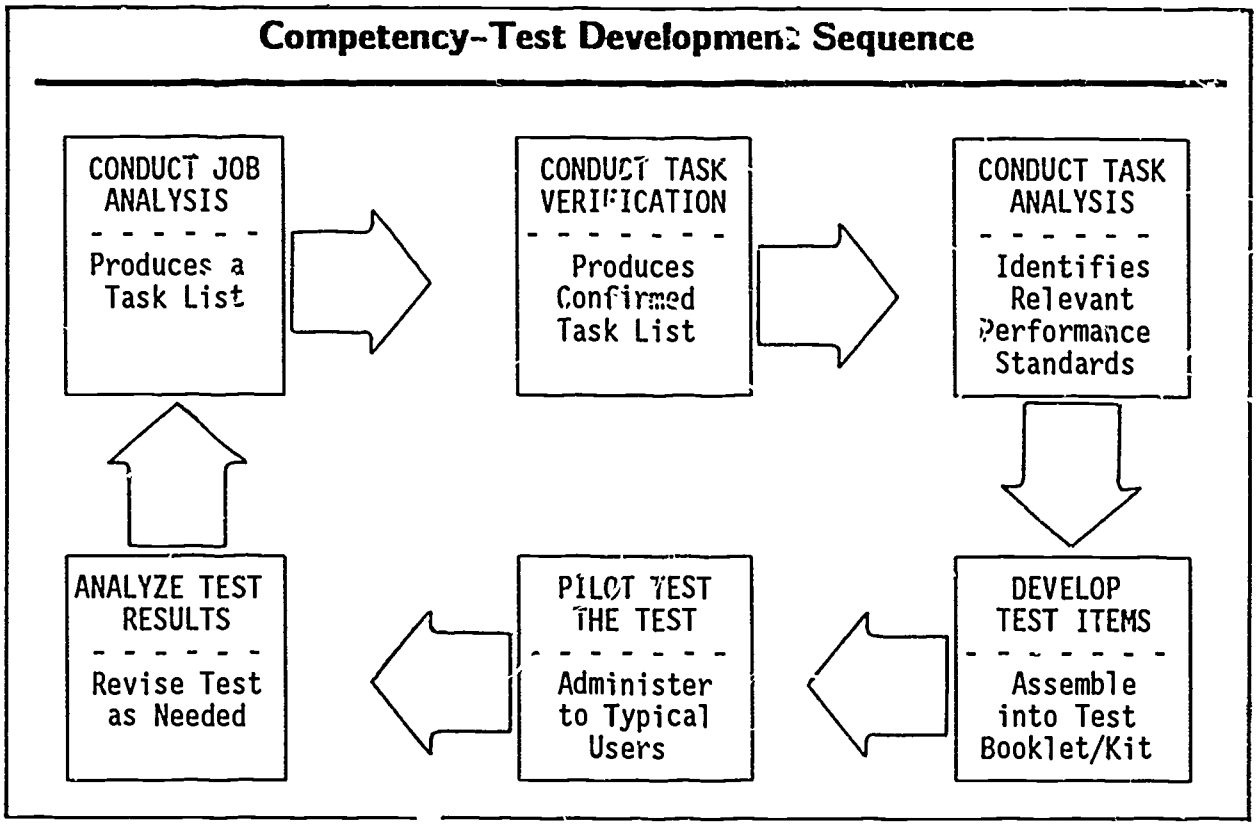
When selecting items or tests for local use, the questions of quality, appropriateness, currency, local relevance, convenience, and usefulness should be considered.

Quality. High-quality tests have the following characteristics:

- Validity and reliability--Good tests measure what they are intended to measure and they do so consistently. Tests and test items that have been developed by trained item-developers, reviewed by experts, validated in terms of importance to the occupation, and field tested with large numbers of students have a greater chance of being valid and reliable.
- Criterion-referenced--Criterion-referenced tests assess ability in terms of predetermined criteria, which in turn are based on realistic occupational behaviors. (Norm-referenced tests, by contrast, assess ability in relation to other students' performance.)

Competency-based test development, shown graphically in sample 1, should be a linear process that results in criterion-referenced tests with predetermined performance standards.

Sample 1



Appropriateness. Tests should use appropriate evaluation methods for the types of objectives to be measured. Written multiple-choice items, for example, can provide an effective measure of cognitive achievement (occupational knowledge). Only in limited cases (e.g., an occupation like bookkeeping, in which the job skills can be realistically simulated on paper) would paper-and-pencil tests effectively measure job skills. Performance tests generally provide the best measure of occupational job skills (psychomotor achievement).

Currency. As occupational practices change, so must the related curricula and evaluation instruments. A test that was carefully developed 10 years ago in a technological field is likely to bear little resemblance to current job requirements and performance standards for the occupation. Task lists and tests must be reviewed on a regular basis and updated as necessary to ensure that they reflect current competencies and performance standards for the occupation.

Local relevance. No matter how carefully a test has been developed, it will not be useful unless it represents locally relevant occupational goals and objectives. Any test materials acquired from other sources should be carefully examined with this in mind and adapted, as necessary, to local conditions.

Convenience and usefulness for local purposes. There are many factors to be considered in relation to convenience and usefulness. Many of these have already been discussed. Generally speaking, the concerns to be addressed are whether local needs will be best served by obtaining outside materials and which particular materials best meet those needs.

Sample 2 presents some questions that may be helpful in evaluating test materials according to the criteria already discussed.

Finding Additional Sources

Keeping abreast of test development efforts across the country seems to be primarily a matter of networking. Word-of-mouth information played a significant role in gathering information for this guide and is likely to do the same for local educators.

There are various mechanisms that can help in establishing and expanding networks, however. The following are some of them.

Databases. For those who have the facilities to conduct computer searches, the following databases can be used:

- o Educational Resources Information Center (ERIC)
- o Vocational Education Curriculum Materials (VECM)
- o Educational Testing Service (ETS)
- o Occupational Data Analysis System (ODAS)

Print-based resources. Various printed resources include information about available test products and current projects. For example:

- o Open Entries, a newsletter published by The Center for Instructional Development and Services, Florida State University, Stone Building, Tallahassee, FL 32306, includes information about programs both offering and seeking test materials.
- o Resources in Vocational Education (RIE), a monthly abstract journal produced by the ERIC Clearinghouse on Adult, Career, and Vocational Education at The Ohio State University in Columbus, Ohio, provides indexes to and summaries of instructional materials.

Additional selected readings related to competency-based testing in vocational education are listed on the inside back cover.

Sample 2

Questions for Evaluating Appropriateness of Competency Tests

TITLE OF TEST: _____

DATE(S) OF DEVELOPMENT/REVISION: _____

REVIEWED BY: _____ DATE OF REVIEW: _____

DEVELOPMENT

1.	Was development based on one or more verified task lists?	YES	NO	NA
2.	Were sound principles of criterion-referenced test development followed?	YES	NO	NA
3.	Did the development process include test/test-item validation (e.g., expert review and field testing)?	YES	NO	NA
4.	Have test items been weighted according to frequency and criticality?	YES	NO	NA
5.	Are the tests/items regularly reviewed and updated?	YES	NO	NA

NATURE

6.	Do the tests/items assess knowledge?	YES	NO	NA
7.	Do the tests/items assess attitudes?	YES	NO	NA
8.	Do the tests/items assess skill performance?	YES	NO	NA
9.	Are the tests/items keyed to task lists?	YES	NO	NA
10.	Are additional tests/items under development by the same source?	YES	NO	NA
11.	Are the test items appropriate for the objectives being evaluated?	YES	NO	NA
12.	Are instructions for administration, scoring, and interpretation included?	YES	NO	NA

KNOWLEDGE TESTS

13.	Are answer keys included	YES	NO	NA
14.	Are a variety of test questions (types) used?	YES	NO	NA
15.	Are the tests machine-scorable?	YES	NO	NA
16.	Are the test booklets reusable?	YES	NO	NA

PERFORMANCE TESTS

17.	Are explicit performance criteria stated?	YES	NO	NA
18.	Are test props (supplies) included?	YES	NO	NA
19.	Are special equipment or facilities required?	YES	NO	NA
20.	Are performance standards consistent with industry expectations?	YES	NO	NA

---

21. Describe the form (specific nature) of the test. _____

_____

22. If computer assisted, what is the nature of the software? _____

_____

For what hardware is software available? _____

_____

23. What testing services are available? _____

_____

24. If part of testing service package:

    a. What is the cost per student? _____

    b. What results are reported? _____

    c. How are results reported? _____

    d. How soon are results available? _____

    e. What restrictions are placed on test administration and use? _____

25. What are the terms of availability?

a. Purchase	_____	e. Exchange	_____
b. Loan	_____	f. Free	_____
c. Cost-recovery	_____	g. Available for review	_____
d. Consortium membership	_____		

26. Comments (unique features, etc.):

State departments of education. Divisions of vocational education may have information about competency-based test development going on in the state. In addition, the U.S. Department of Education supports the National Network for Curriculum Coordination in Vocational and Technical Education (NNCCVTE). This network includes six regional curriculum coordination centers (CCCs) to facilitate sharing of curriculum materials on a nationwide basis. To obtain materials on a specific topic, contact the NNCCVTE state liaison representative through your state department of education (Appendix B).

National Center for Research in Vocational Education. The National Center, which serves as a national resource to vocational-technical educators, has a wide variety of expertise and materials related to competency-based evaluation, as well as access to all major databases and ADVOCNET (an electronic network for vocational education).

Curriculum centers and laboratories. Local, regional, and state curriculum centers and laboratories may have information about development going on within their jurisdictions. Most states have curriculum laboratories or instructional materials centers.

Clearinghouses. Information clearinghouses such as the following are excellent potential information sources:

- o ERIC Clearinghouse on Adult, Career, and Vocational Education
  The National Center for Research in Vocational Education
  1960 Kenny Road
  The Ohio State University
  Columbus, Ohio 43210
- o Clearinghouse for Applied Performance Testing
  Northwest Regional Educational Laboratory
  Portland, Oregon
- o Vocational and Occupational Information Center for Educators (VOICE)
  California Department of Education
  721 Capitol Mall
  Sacramento, California 95814

Consortia. Regional and national consortia of states and agencies have been organized to develop occupational materials. Some of these are listed among the sources in this guide. In addition to their own materials, they may be able to share information about other current and planned local efforts of which they are aware.

Professional associations. Professional associations serving teachers or workers in the various occupational areas are potential sources of information about tests being developed in their own areas.

Military sources. The U.S. Army has developed performance-based and criterion-referenced Skill Qualification Tests containing both hands-on and written components. The Air Force and Navy have developed performance tests in the area of electronics. Contact the National Center or the individual armed forces for more information.

NOTES

SOURCE ABSTRACTS

SOURCE ABSTRACT A

Source American Association for Vocational Instructional Materials (AAVIM); 120 Driftmier Engineering Center; Athens, Georgia 30602

Item Vocational Competency Measures

Tests Available

Seventeen tests in the following program areas (see list of specific tests at the end of this abstract):

- Agriculture
- Business and Office
- Distributive Education
- Health
- Home Economics
- Technical
- Trade and Industry

Nature/Use

Each test package includes the following items:

- o Paper-and-pencil multiple-choice job information test, divided into two parallel parts for flexibility. Answer keys are in the examiner's manual; machine-scorable answer sheets may be used.
- o Performance tests (4 to 13 in each package), including examiner and examinee instructions, test props, and performance test record sheet.
- o Work habits inventory (for assessing nontechnical, work-related attitudes and behaviors), divided into three parts: "How I Am," a student self-assessment; "Importance of Job-Related Traits," on which students estimate job trait importance as perceived by an employer; and "Assessment of Student's Work Habits," completed by the teacher. This instrument is common to all the tests; items of special relevance to the specific occupation are listed in the examiner's manual.
- o Examiner's manual, including directions for the administration of the information test, performance tests, and work habits inventory; a summary of how the vocational competency measures were developed; technical data on test reliability and validity; scoring keys; and a listing of those items on the work habits inventory that are of special relevance to each specific test.

Development

These tests were developed by the American Institutes for Research under the sponsorship of the U.S. Department of Education. The tests were designed for use by vocational-technical teachers and administrators at the secondary and postsecondary levels, as well as by employers. Teachers and administrators can use the tests to assess and improve the competencies of their students, identify areas for further improvement in their programs, and inform prospective

employers about the job-related competencies acquired by program graduates. Employers can use the tests to screen and select new employees or objectively assess the training needs of present employees.

The test development process included task analysis; interviews with employers, supervisors, and workers; item development; expert reviews; pilot testing and revision; and field testing. The tests were developed during the period 1980-82; the performance test package of the Computer Operator test was revised in 1985. At present, there are no plans for future updating by the developer.

Availability

Tests may be purchased from AAVIM. Materials are separately priced for specimen sets, packages of 10 reusable test booklets, and 10-set packets of consumable test materials. A catalog with test descriptions, price list, and order form is also available from AAVIM.

Occupational Areas Addressed by Tests

Agriculture
- Agricultural Chemicals Applications Technician
- Farm Equipment Mechanic

Business and Office
- Computer Operator
- Word Processing Specialist

Distributive Education
- Apparel Sales
- Fabric Sales
- Grocery Clerk
- Hotel (Motel) Front Office

Health
- Dental Assistant
- Physical Therapist Assistant

Home Economics
- Custom Sewing
- Restaurant Service (Waiter, Waitress, Cashier)

Technical
- Electronics Technician
- Wastewater Treatment Technician
- Water Treatment Technician

Trade and Industry
- Carpenter
- Diesel Mechanic

SOURCE ABSTRACT B

Source California State Department of Education, Career-Vocational Preparation Division, Business Education Unit; 721 Capitol Mall; Sacramento, California 95814; (916) 445-8882

Item Business Education Tests for Selected Office Occupations

Tests Available

Accounting Clerk
Clerk Typist
General Office Clerk
Legal Secretary
Stenographer
Word Processing Operator

Nature/Use

These are entry-level tests developed from the job performance criteria (competencies and objectives) identified in the California Business Education Program Guide for Office Occupations. Each test has both an objective section (to measure attitudes and knowledge) and a performance section (to measure skills). Objective sections include multiple-choice, matching, and true-false items. Industry-validated achievement standards are provided in the instructions to the teacher, and answer keys are provided.

The tests may be given to students completing instruction in secondary schools, regional occupational centers or programs, community colleges, and adult education programs. They may be administered over a one-, two-, or four-day period. State-level certificates of success are provided, which describe the test, list the competency areas assessed by the test, and indicate skill levels (e.g., typing or dictation speed).

Development

The tests were developed in 1985 through a cooperative effort of business education teachers and the Industry Education Council of California. The process included multiple cycles of test development, review, field testing in both schools and industry, revision (in 1986-87), and industry validation. An ongoing process has been established for annual review and updating. A complete test revision will be undertaken in early 1988 in response to a new Office Education Curriculum Guide. The guide is currently in the field-review stage and is due to be disseminated during 1987-88.

Availability

Single-copy sets of the tests are available to business education programs throughout California. Multiple copies are also available, at a cost, for

those agencies who choose not to reproduce their own. Agencies outside California can obtain loan copies for local reproduction through the VOICE clearinghouse (see p. 9 of this guide).

SOURCE ABSTRACT C

Source Florida Department of Education, Division of Vocational, Adult, and Community Education; Knott Building; Tallahassee, Florida 32301; (904) 488-3192

Item Criterion-referenced written and performance tests and test-item bank

Test Items Available

Items have been or are being developed for the following occupational areas:

Auto Body Repairer
Automobile Mechanics
Carpentry
Cattle Rancher
Clerk Typist
Commercial Cook
Computer Programmer
Day Care Worker
Dental Assisting
Drafting, Architectural
Drafting, Mechanical
Electronics Mechanic
Greenhouse Grower
Heating and A/C
Hospital Ward Clerk
Hotel/Motel Clerk
House Electrician
Machinist
Nurse Aide
Nursery Worker
Plumber
Refrigeration Mechanic
Salesperson, Parts
Secretary
Tractor Mechanic
Truck and Bus Mechanic
Welder

Nature/Use

An item bank of criterion-referenced written and performance test items, from which tests can be constructed, is being developed to meet the requirements of the Florida Accountability in Curriculum, Educational Instructional Materials, and Testing Act (FACET) of 1984. This act calls for, among other things, standardized vocational student achievement testing according to student performance standards.

The written tests (currently under development), requiring 40 to 45 minutes to administer, are made up of four-option multiple-choice items requiring either recall or application of information. The performance tests (about 2 to 3 hours each) are composed of performance checklists for tasks necessary for job entry. Items are weighted according to frequency and criticality in the occupation and are coded to both Student Performance Standards and to V-TECS catalogs.

Development

The item development process utilizes a network of vocational assessment coordinators (VACs) trained to coordinate local education agency participation. Item-writing teams and item-review teams, composed of teachers, incumbent

workers, and state occupational program directors and/or specialists, receive training in item development and review.

Writing teams are provided with V-TECS catalogs, performance standards, curriculum frameworks, available test items, and other materials. The team develops new items or revises existing items according to the V-TECS Handbook for Developing Criterion-referenced Test Items, and weights and codes the items. Review teams review the items for consistency and adequacy, and an educational measurement expert acts as a resource person and reviews all items.

Items are field tested (with a minimum of 50 students per written item and 10 per performance item), and teachers and students are interviewed for input.

Ongoing item maintenance, to keep pace with industry and curriculum changes, will be supported by a computerized system.

Availability

Test items are available through the V-TECS system. For more information on the development procedures, contact the Florida Division of Vocational, Adult, and Community Education.

SOURCE ABSTRACT D

Source The Instructional Materials Laboratory, The Ohio State University; 842 West Goodale Boulevard; Columbus, Ohio 43212

Item Ohio Vocational Education Achievement Tests

Tests Available

Currently 39 tests are available in the following six program areas, as listed at the end of this abstract:

- Agricultural
- Business
- Marketing
- Health Occupations
- Home Economics
- Trade and Industrial

Nature/Use

The Ohio Vocational Education Achievement Tests, used in both secondary and postsecondary vocational programs, are designed for use by teachers, supervisors, and administrators for evaluation and diagnosis of vocational achievement for the improvement of instruction.

Each test includes two occupational parts. Those occupational portions are paper-and-pencil tests composed of multiple-choice items designed to measure skills and understanding in specific vocational areas. For secondary schools, a third part, the Short Form Test of Academic Aptitude (SFTAA), Level 5, is also provided. The SFTAA includes language and nonlanguage subtests.

Administration. The tests are designed to be administered in five hours over a three-day period. To ensure that they are instructing according to the local plans and program rather than toward test results, teachers should not see or administer the achievement test in their instructional field.

Scoring. All test materials are returned to The Instructional Materials Laboratory after use, where they are scored. A computer printout of student scores by occupation and grade level is returned to each school. Other provided data include rank ordering of student scores, raw scores for tests and subtests, and percentile norm sheets.

Development

Test development begins with occupational analysis and a verified task list, from which a comprehensive occupational task analysis is developed. Test questions are developed and reviewed, the tests are field tested, the results are subjected to statistical analysis for reliability, and the tests are revised. The task analyses and achievement tests are reviewed annually for currency and revised as needed.

Availability

The tests are available only as part of the total testing service program. The test booklets are controlled items, not for sale, review, or study. The program is used extensively in Ohio secondary schools and is available to postsecondary schools and non-Ohio secondary schools.

Occupational Areas Addressed by Tests

Agricultural Education
- Agricultural Business
- Agricultural Mechanic
- Farm Management
- Horticulture
- Production Agriculture

Business Education
- Accounting/Computing Clerk
- Clerk-Stenographer
- Clerk-Typist
- Data Processing
- General Office Clerk
- Word Processing

Health Occupations Education
- Dental Assisting
- Medical Assistant
- Diversified Health Occupations

Home Economics Education
- Child Care Services
- Community and Home Services
- Fabric Services
- Food Services

Marketing Education
- Apparel and Accessories
- Food Marketing
- Food Service Personnel
- General Merchandise Retailing

Trade and Industrial Education

Automotive:
- Auto Body Mechanic
- Automotive Mechanics
- Diesel Mechanics

Construction Trades:
- Carpentry
- Construction Electricity
- Heating, Air Conditioning, and Refrigeration
- Building Maintenance
- Masonry

Electronics:
- Communication Products Electronics
- Industrial Electronics

Graphic Communications:
- Commercial Art
- Drafting
- Lithographic Printing

Metal Trades:
- Machine Trades
- Welding

Personal Services:
- Cosmetology

Recreational and Industrial Equipment:
- Small Engine Repair

SOURCE ABSTRACT E

Source Kentucky Department of Education, Office of Vocational Education, Curriculum Development Unit; 2028 Capital Plaza Tower; Frankfort, Kentucky 40601; (502) 564-2890

Item Kentucky Vocational Achievement Tests

Tests Available

Tests are being developed for 63 postsecondary vocational programs (see list at the end of this abstract).

Nature/Use

Kentucky's Vocational Achievement Tests are multiple-choice paper-and-pencil knowledge tests. Items are included that require either recall or application of information; some items include graphics. A Procedures Manual is included. The tests are in hard-copy form at present, although they will be entered into a computerized test-item bank. Within Kentucky, the tests are controlled items, administered by state test coordinators to students certified (by their instructors) as having completed the program of instruction and being ready for testing.

Development

Tests were developed by teachers, using task lists and a handbook for developing criterion-referenced items. The 63 achievement tests were field tested with over 2,000 total students. Criticality ratings have been obtained for the duty areas in order to balance the percentages of test items. Revision of both task lists and tests is underway.

Availability

The tests are available on a loan basis (no cost) outside Kentucky, but not within the state, where they are controlled items. Contact the National Network for Curriculum Coordination in Vocational and Technical Education (NNCCVTE) state liaison representative through your state department of education to gain access. Items will also be available through V-TECS.

Occupational Areas Addressed by Tests

Agribusiness
Groundkeeper

Business and Office
Administrative Clerk
Bookkeeper
Computer Operator
Computer Programmer
Legal Secretary
Management Trainee
Medical Secretary
Secretary
Shorthand Reporter
Word Processing Operator
Word Processing Specialist

Health and Personal Service
Barber
Biomedical Equipment Technician
Cosmetologist
Dental Assistant
Licensed Practical Nurse
Medical Assistant
Medical Laboratory Technician
Radiologic Technologist
Respiratory Therapy Technician
Surgical Technologist

Home Economics
Head Baker or Baker Chef
Head School Cook
Kitchen Supervisor
Preschool Director
Preschool Teacher
Restaurant Cook

Industrial Education
Air Conditioning Mechanic
Appliance Repairer
Architectural Drafter
Automobile Body Repairer
Automobile Mechanic
Building Maintenance Repairer
Carpenter
Civil Drafter
Combination Welder
Company Laborer
Construction Bricklayer
Construction Equipment Mechanic
Custom Tailor
Diesel Mechanic
Electrical Appliance Servicer
Electronics Technician
Furniture Upholsterer
Industrial Electrician
Laboratory Tester
Machinist
Maintenance Mechanic (Industrial)
Maintenance Mechanic (Mining)
Meat Cutter
Mechanical Drafter
Mine Surveyor
Miner
Mining and Quarrying Operating Engineer
Plumber
Printer
Refrigeration Mechanic
Residential Electrician
Sheet Metal Worker
Small Engine Mechanic
Surveyor Assistant
Television and Radio Repairer
Tool and Die Maker

SOURCE ABSTRACT F

Source The Marketing Education (MarkED) Resource Center, A Division of IDECC, Inc., The Ohio State University; 1375 King Avenue; P.O. Box 12226; Columbus, Ohio 43212-0226; (614) 486-6708

Items Comprehensive Occupational Exams for marketing; Student Competency Records and Training Plans: competency lists/evaluation checklists for marketing industries; Software: computer-based marketing test-item banks

Materials Available

A variety of marketing materials is available from The MarkED Resource Center, all described in their catalog. The following are those most closely related to occupation-level testing.

Comprehensive Occupational Exams. Sample exams from past DECA competitions in the following areas:

- Advertising/Display
- Apparel and Accessories
- Common "Core"
- Finance and Credit
- Food Marketing
- Free Enterprise Economics
- General Marketing
- General Merchandise Retailing
- Marketing Math
- Full-Service Restaurant
- Quick-Serve Restaurant
- Vehicle: Petroleum, Parts, Accessories (Service Station)

Exams are paper-and-pencil tests containing 100 multiple-choice items, with answer keys.

Student Competency Records (SCRs). Lists of all identified competencies (skills and concepts) for particular marketing industries (e.g., apparel retailer) at particular occupational levels (e.g., career-sustaining), available for the areas listed under Training Plans. SCRs are paper instruments with space for writing in evaluations or checking off competencies as they are completed.

Training Plans (TPs). Lists of competencies, designed for use as training plans and as on-the-job evaluation instruments, for the following areas:

- Apparel Retailing
- Food Marketing--Supermarket
- General Marketing
- General Merchandise Retailing
- Hotel-Motel-Lodging
- Restaurant--Full Service
- Restaurant--Quick Service
- Vehicle: Petroleum, Parts, Accessories

MarkeTest. A complete marketing test-item bank for Apple computers, with descriptive key. The software disks may be used for student on-line tests and record keeping or for generating hard-copy tests. The item bank may be used to develop specialized tests by level or industry.

Business Quiz. Software packages for Apple or IBM computers containing test-item banks and answer keys for specific marketing subject areas. Each software package includes approximately 200 questions from which classroom tests can be designed. May be used on-line or to print hard copies.

Nature/Use

MarkED materials have historically been for use with secondary students, although some materials are targeted for postsecondary. MarkED's development of materials in the future will be balanced among secondary, postsecondary, and "adult" programs. All test-bank items are cognitive multiple-choice items. SCRs and TPs provide skill competency checklists.

Development

Core competencies have been developed for the entire marketing curriculum. These have been incorporated into curriculum outlines, learning activity packages, and other MarkED materials. Test items are developed by marketing teachers trained in item development, reviewed for content and readability, revised, and validated.

Availability

MarkED materials development is funded through a consortium of states, including as of January 1987, Alabama, Arkansas, California, Delaware, Florida, Georgia, Hawaii, Idaho, Louisiana, Michigan, Mississippi, North Carolina, North Dakota, Nebraska, New Hampshire, New Mexico, New York, Ohio, Oklahoma, Pennsylvania, Utah, Virginia, Vermont, Wisconsin, West Virginia, and Wyoming.

All materials are available both to members and to nonmembers. Vocational educators in member states receive discounted prices. A variety of purchase options is available, including individual items, starter packages, class packages, various sizes of sets, demo disks, and full software packages. Prices and descriptions are listed in the current catalog, available from the MarkED Resource Center.

SOURCE ABSTRACT G

Source Northeast Metro Technical Institute 916; 3300 Century Avenue North; White Bear Lake, Minnesota 55110

Item Learning packages with related competency-based tests

Tests Available

Competency-based tests are available as part of the related learning packages in more than 50 secondary and postsecondary vocational-technical programs (see list at the end of this abstract).

Nature/Use

Learning packages and tests are in print form, with various related resources, such as videotapes, sound-on-slides, or computer software. The tests include both paper-and-pencil criterion-referenced multiple-choice tests and product/performance mastery checklists for teacher use.

Development

Tests are developed by instructors on the basis of task lists, and they are field tested with students. The curriculum is evaluated annually, and the learning guides (including tests) revised as needed.

Availability

Learning packages and tests are available from Northeast Metro Tech on a cost-recovery basis. Inquiries (prepaid on school letterhead) should indicate programs of interest. After receiving and reviewing task lists for those programs, learning guides (with tests) can be obtained; if desired, related audiovisuals can also be obtained.

Occupational Areas Addressed by Learning Packages/Tests

Business and Office/Data Processing
- Accounting
- Bookkeeping
- Computer Programming
- Computer Operations
- General Office
- Legal Secretarial Specialty
- Medical Secretarial Specialty
- Purchasing and Inventory Management
- Traffic Office
- Word/Information Processing Specialty

Health
- Dental Assistant
- Dental Laboratory Technician
- Emergency Medical Technician
- Intensive Care Paramedic
- Medical Assistant
- Nursing Assistant--Basic
- Nursing Assistant--Hospital/Home Health Aide
- Orthotic Practitioner
- Orthotic Technician
- Pharmacy Technician
- Prosthetic Practitioner
- Prosthetic Technician

Home Economics/Consumer Marketing
- Apparel Services
- Child Development Assistant
- Cosmetology
- Fashion Merchandising and Management
- Interior Design and Home Furnishing Sales

Services
- Auto Body Mechanics
- Auto Dismantler (HS only)
- Auto Mechanics
- Chef
- Dietetic Technician
- Food Service Aide
- Horticulture
- Marine and Power Equipment Technology
- Quantity Food Preparation
- Small Animal Care (HS only)
- Truck Mechanics
- Vending Machine Technician

Trade and Industry
- Building Cleaning and Care
- Building Operating and Equipment Maintenance
- Contract Building Services Technician
- Graphic Communications
- Heating and Air Conditioning Sales and Service
- Refrigeration and Major Appliance Sales and Service
- Television and Audio-Video Production Technician
- Upholstery

Technical
- Air and Water Analysis Technician
- Audio-Video Electronics Technician
- Bio-Medical Equipment Technician
- Business Machine Technology
- Electro-Mechanical Technician
- Industrial Laboratory Technician
- Machine Technology
- Mechanical Drafting
- Quality Control Technician
- Television Electronic Systems Technician

SOURCE ABSTRACT H

Source National Occupational Competency Testing Institute (NOCTI), Ferris State College; 318 Johnson Hall; Big Rapids, Michigan 49307; (616) 796-4695

Item Student Occupational Competency Achievement Test (SOCAT) series

Tests Available

SOCATS are currently available for 29 occupations (see list at the end of this abstract). In addition, 40 tests (also listed) are under development and tentatively scheduled for field testing in late spring 1987, with availability for national use beginning in 1988.

Nature/Use

SOCATS are designed for secondary and postsecondary completers of two-year vocational programs of studies (up to 2,000 hours). They consist of three parts: written, performance, and an optional aptitude test.

The multiple-choice written test covers factual knowledge, technical information, understanding of principles, and problem-solving abilities related to the occupation. The performance test consists of work assignments designed to sample the manipulative skills required in the occupation. The McGraw-Hill Test of Cognitive Skills is used to test scholastic ability.

Administration. The written test is administered by qualified school staff (teacher, guidance counselor, or test administrator); administration occurs in the school, as part of the ongoing program. Written tests take from 2-1/2 to 3 hours to administer. A person with technical expertise in the occupation (e.g., a journeyman tradesperson or business representative) should administer the performance test (advisory committee members and co-op employers are often asked to do this). Time requirements for the performance tests range from 2-1/2 to 5 hours, with most averaging 3 hours.

Scoring. Completed tests are returned to NOCTI for scoring, and printouts are returned to each student, teacher, and school. Separate scores for the written and performance tests are reported, along with subscores for each test, standings in relation to various groups, performance criterion listings, certificates of completion, and other data displays.

Development

SOCATS are developed from occupational analyses and task lists, nationally field tested and validated, and revised after statistical analysis of the field-test results. Tests are reviewed every two to three years and updated as needed.

Availability

The SOCAT service--which includes provision of the test materials and instructions, scoring, and interpretation--is available to any bona fide learning institution. Costs per student vary (all under $10), and the costs of consumable materials for performance tests are assumed by the school.

Occupational Areas Addressed by Tests

Tests currently available:
Accounting/Bookkeeping
Agriculture Mechanics
Auto Body
Auto Mechanics
Cabinetmaking
Carpentry
Commercial Foods
Computer Programming
Construction Electricity
Construction Masonry
Drafting
Electronics
General Merchandising
General Office
Graphic Arts
Heating and Air Conditioning
Home Entertainment Equipment Representative
Horticulture
Industrial Electricity
Industrial Electronics
Machine Trades
Plumbing
Practical Nursing
Production Agriculture
Refrigeration
Sewn Products
Small Engine Repair
Truck and Bus Mechanics
Welding

Tests under development:
Appliance Repair
Architectural Design
Audiovisual Communications
Auto Diesel Mechanics
Automotive Specialist
Baking
Building Construction Occupations
Building Trades Maintenance
Business Data Processing
Child Care Services
Civil Technologies
Clothing and Textiles Management and Production
Commercial Art
Communications Electronics
Computer and Information Sciences
Dental Assisting
Diesel Engine Mechanics
Diversified Health Occupations
Electrical Construction and Maintenance
Electrical Occupations
Electrical Technology
Electromechanical Technology
Electronic Technology
Food Production, Management, and Services
Forestry Products and Processing
General Drafting and Design
General Secretarial
Health Assisting
Heating
Heavy Equipment Maintenance and Repair
Home Health Aide
Marketing and Distribution
Mechanical Drafting
Medical Assisting
Metalworking and Fabrication
Nursing Assisting
Painting and Decorating
Sheet Metal
Upholstering
Warehousing Services

SOURCE ABSTRACT I

Source Oklahoma State Department of Vocational and Technical Education, Evaluation and Testing Unit; 1500 West 7th Avenue; Stillwater, Oklahoma 74074; (405) 377-2000

Item Competency-based tests and item bank

Tests Available

Competency-based, occupational test batteries are under development. The first 14 test batteries are currently available in the following areas (see list of specific occupations within each battery for which tests can be drawn at the end of this abstract), and development will continue in other priority areas.

- Auto Body
- Auto Mechanics
- Business and Office
- Carpentry, Commercial
- Carpentry, Residential
- Child Care
- Drafting
- Emergency Medical Technician (EMT)
- Machine Tool
- Marketing Education
- Masonry
- Microcomputers
- Nursing Assisting
- Welding

Nature/Use

Tests include multiple-choice cognitive items, hands-on performance items, and scenario items and are performance-oriented. Hands-on items include evaluation criteria, time limit, process steps, administrative comments, and lists of required equipment, tools, and supplies. The item bank is computerized, allowing random test generation.

Development

Development of the test plan begins with an occupational analysis of the industry and is followed by refinement by industry representatives and instructors. Duties and tasks are identified for each selected occupation. Writers who have been trained in test development techniques then develop the items, and the items are edited by a testing specialist. Finally, all items are reviewed for content, currency, and other factors by a committee of industry representatives and instructors. Field testing and revision follow.

Availability

Tests are currently available to Oklahoma's vocational educators for field testing; the intent is to make them available throughout the state and ultimately to gather data from the field tests. The tests will not be

available outside the state until validity/reliability analyses are complete. However, some test batteries may be available nationwide as a result of Oklahoma's membership in the V-TECS consortium.

Occupational Areas Addressed by Test Batteries

Auto Body
Painter and Refinisher
Repairman

Auto Mechanics
Automatic Transmission/ Transaxle Specialist
Brake Specialist
Electrical Systems Specialist
Engine Performance Specialist
Engine Repair Specialist
Heating and A/C Specialist
Suspension and Steering Specialist

Business and Office
Account Clerk
Acounts Payable and Receivable Clerk
Administrative Assistant
Bookkeeper, Hand
Bookkeeper, Computer
Clerk Typist
Computer Account Clerk
Executive Secretary
General Clerk
Medical Transcriptionist
Office Manager
Receptionist
Secretary
Secretary Clerk
Secretary Contract
Secretary Maintenance
Secretary Office Manager
Stenographer
Word Processor

Carpentry, Commercial
Carpenter
Drywall Hanger/Finisher
Form Builder/Form Setter

Carpentry, Residential
Carpenter
Cornice Carpenter
Drywall Hanger/Finisher
Finish Carpenter (Exterior Trim)
Finish Carpenter (Interior Trim)
Form Carpenter
Frame Carpenter
Insulation Installer
Roofer (Shingles)

Child Care
Child Care Director
Teacher
Teacher's Aide

Drafting
Architectural Drafter
Civil Drafter
Electronic Drafter
General Drafter
Mechanical Drafter
Process Pipe Drafter
Structural Drafter
Technical Illustrator

Emergency Medical Technician
Basic EMT/First Responder

Machine Tool
Drill Press Operator
Grinding Maching Operator
Lathe Operator
Machine Tool Operator
Mill Operator
Power Saw Operator

Marketing Education
Advertising/Marketing/Display Coordinator
Buyer
Cashier/Checker
Clerk

Marketing Education (continued)
Customer Service/Service Representative
Manager/Supervisor/Owner
Sales/Distribution Manager
Stocker

Masonry
Bricklayer
Helper
Rocklayer

Microcomputers
Automated Accounting Clerk
Data Entry Clerk
Data Processing Clerk
Microcomputer Analyst
Microcomputer Business Applications Specialist
Microcomputer Operator
Microcomputer Programmer
Word Processing Specialist

Nursing Assisting
Geriatric Assistant
Hospital Assistant
Long-Term Care Assistant
Mental Health/Mental Retardation Assistant
Nursing Assistant

Welding
Burner
General Welder
Mig Welder
Tig Welder
Stick Welder
Welder's Helper

SOURCE ABSTRACT J

Source Richmond County Public Schools; P.O. Box 1259; Hamlet, North Carolina 28345; (919) 582-5860

Item Competency-based tests for vocational courses

Tests Available

Tests are being developed for all vocational courses taught in the system. Currently 38 tests have been developed (see list at the end of this abstract).

Nature/Use

Competency-based, 100-item tests are made up primarily of multiple-choice items, with a few performance-based items. The test items are stored on computer, so tests can be randomly generated, weighted by percentage of focus in the instructional programs.

Development

The Richmond County Schools are developing and piloting a demonstration model for obtaining competency-based achievement data on students enrolled in high school vocational programs. As part of project activities, the following items are being entered into computer files: (1) all North Carolina vocational competencies, (2) objectives for each vocational course offering, and (3) at least three competency-based test items keyed to each objective.

Competencies are identified in unit outlines using the system developed by the Florida Department of Education, and teachers serve as item developers. The tests are administered to students in the state on a pre- and posttest basis; tests are revised on the basis of pretest results. The software package provides for computerized management of the assessment activity.

Availability

Tests can be made available to educational agencies outside North Carolina in exchange for similar materials.

Occupational Areas Addressed by Tests

Agriculture Education
- Introduction to Agriculture/ Natural Resources
- Ornamental Horticulture

Business and Office Education
- Accounting
- Business Communication
- Business Law
- Introduction to Data Processing Occupations
- Office Occupations
- Shorthand
- Typing

Health Occupations Education

Home Economics Consumer and Homemaking
- Advanced Child Development
- Advanced Clothing and Textiles
- Advanced Home Economics
- Advanced Housing and Home Furnishings
- Advanced Interpersonal Relations
- Consumer Education/Management
- Family Life Education
- Foods and Nutrition
- Introductory Home Economics

Home Economics Occupations
- Applied Home Economics Occupations
- Child Care Services

Industrial Arts Education
- Exploratory Industrial Arts

Trade and Industrial Education
- Auto Mechanics
- Carpentry
- Cosmetology
- Electronics
- Graphics
- Industrial Co-op Training
- Introduction to Trade and Industrial Education
- Machine Shop
- Masonry
- Principles of Technology
- Technical Drafting
- Textiles

SOURCE ABSTRACT K

Source Vocational Technical Education Consortium of States (V-TECS), Commission on Occupational Education Institutions, Southern Association of Colleges and Schools; 795 Peachtree Street NE; Atlanta, Georgia 30365; (404) 897-6158

Item Criterion-referenced test items

Item Banks Available

V-TECS makes a number of different types of products and services available, including catalogs of performance objectives and performance guides, curriculum guides, criterion-referenced test items, task lists, an occupational data analysis system, and technical assistance. Of special interest for our purposes are the test items.

Item banks have been completed for 17 occupational areas (see list at the end of this abstract), and development is underway for additional areas (also listed). V-TECS is in the process of creating a computerized item bank, which will enable users to access the bank electronically. As banks are completed and put onto disk, they are distributed to member states.

Nature/Use

The item banks include both written items to test the cognitive domain and performance items to test the psychomotor domain. Not all occupational areas presently include performance items. Written items are in both multiple-choice and matching formats and are keyed to specific duties and tasks. Performance items include a checklist of performance determinants.

Development

V-TECS is a consortium of states and agencies that share development and diffusion of competency-based vocational-technical education materials. Item banks, based on V-TECS task lists, are developed by consortium members and validated using V-TECS guidelines for developing criterion-referenced test items.

Availability

Item banks can be obtained in consortium member states by contacting the state V-TECS representative (for information on who the representative is, contact V-TECS or the state department of vocational education). Each state has established its own distribution policies and procedures.

Consortium members currently include the following: Alabama, Arizona, Arkansas, Colorado, Florida, Georgia, Illinois, Indiana, Kansas, Kentucky, Maryland, Massachusetts, Michigan, Mississippi, Missouri, New York, North Carolina, Oregon, Oklahoma, Pennsylvania, South Carolina, Utah, Virginia, Washington, and West Virginia. However, membership does change, so check with your state department of education, or military or government agency, to find out if your state or agency is a member.

Occupational Areas Addressed by Item Banks

Item banks completed:

- Auto Mechanics
- Bricklayer
- Building Repairer
- Carpentry
- Cashier/Checker
- Computer Equipment Repair
- Computerized Numerical Control
- Farm Business Manager
- Homemaker: Family Management and Economics
- Machinist/Machine Tool
- Masonry
- Nurse Assistant
- Office Manager
- Secretarial Occupations
- Sheet Metal Worker
- Small Engine Repair
- Welding

Item banks under development:

- Architectural Drafter
- Auto Engine and Drive Train Technician
- Information Processing Specialist
- Introduction to Technology
- Nursing Assistant for Long-Term Health Care
- Ornamental Horticulture
- Radiologic Technology
- Supervisor of Administrative Services
- Tractor Trailer/Truck Driver

OCCUPATIONAL INDEX

OCCUPATIONAL INDEX

The letters following each occupational area refer to source abstracts in this guide. In some cases, test titles vary slightly but have been combined on the basis of similarity. Occupations are grouped by program areas. However, developers did not always categorize their programs in the same way, and some minor changes have been made in order to put similar topics together in the index. Words in parentheses indicate some of these changes.

Agricultural Education

Agriculture/Natural Resource, Introduction . . J
Agricultural Business . . D
Agricultural Chemicals Applications Technician . . A
Agricultural Mechanic . . D, H
Cattle Rancher . . C
Farm Equipment Mechanic . . A
Farm Management . . D, K
Forestry Products and Processing . . H
Greenhouse Grower . . C
Groundkeeper . . E
Horticulture . . D, G, H
  Ornamental . . J, K
Nursery Worker . . C
Production Agriculture . . D, H
Tractor Mechanic . . C

Business and Office Education

Accounting . . G, H, J
Accounting Clerk . . B, D
  Automated . . I
Accounts Payable and Receivable Clerk . . I
Administrative Assistant . . I
Administrative Clerk . . E
Administrative Services Supervisor . . K
Bookkeeper . . E, G, H, I
Business Communication . . J
Business Law . . J
Computer Account Clerk . . D, I
Computer and Information Sciences . . H
Computer/Microcomputer Analyst . . I
Computer/Microcomputer Operator . . A, E, G, I
Computer/Microcomputer Programmer . . C, E, G, H, I
Computerized Numerical Control . . K
Data Entry Clerk . . I
Data Processing
  Business . . H
  General . . D, I, J
General Office Clerk . . B, D, G, H, I
Information Processing Specialty . . G, K
Management Trainee . . E

Medical Transcriptionist . . I
Microcomputer Business Applications Specialist . . I
Office Manager . . I, K
Office Occupations . . J
Purchasing and Inventory Management . . G
Receptionist . . I
Secretarial Occupations . . K
  Clerk-Stenographer . . D
  Clerk Typist . . B, C, D, I
  Secretary (General) . . C, E, H, I
  Secretary Clerk . . I
  Stenographer . . B, I, J
  Typist . . J
  Word Processor . . A, B, D, E, G, I
Secretarial Specialties
  Contract . . I
  Executive . . I
  Legal . . B, E, G
  Maintenance . . I
  Medical . . E, G
Shorthand Reporter . . E
Traffic Office . . G

Health Occupations

Biomedical Equipment Technician . . E
Dental Assistant . . A, C, D, E, G, H
Dental Laboratory Technician . . G
Diversified Health Occupations . . D, H
Emergency Medical Technician . . G, I
Geriatric Assistant . . I
Health Assisting . . H
Health Occupations Education . . J
Home Health Aide . . G, H
Hospital Assistant . . I
Hospital Ward Clerk . . C
Intensive Care Paramedic . . G
Long-Term Care Assistant . . I, K
Medical Assistant . . D, E, G, H
Medical Laboratory Technician . . E
Mental Health/Mental Retardation Assistant . . I
Nursing Occupations
  LPN . . E
  Nurse Aide . . C
  Nursing Assistant . . G, H, I, K
Orthotic Practitioner . . G
Orthotic Technician . . G
Pharmacy Technician . . G
Physical Therapist Assistant . . A
Practical Nursing . . H
Prosthetic Practitioner . . G
Prosthetic Technician . . G
Radiologic Technologist . . E, K
Respiratory Therapy Technician . . E

Small Animal Care . . G
Surgical Technologist . . E

Home Economics Education

Apparel Services . . G
Child Care
  Director . . I
  Services . . D, H, J
  Teacher . . I
  Teacher's Aide . . I
Child Development, Advanced . . J
Child Development Assistant . . G
Clothing and Textiles, Advanced . . J
Community and Home Services . . D
Consumer Education/Management . . J
Custom Sewing (or Sewn Products) . . A, H
Day Care Worker . . C
Fabric Services . . D
Family Life Education . . J
Foods and Nutrition . . J
Home Economics
  Advanced . . J
  Applied . . J
  Introductory . . J
Homemaker . . K
Housing and Home Furnishings, Advanced . . J
Interpersonal Relations, Advanced . . J
Preschool Director . . E
Preschool Teacher . . E

Marketing and Distributive Education

Advertising/Marketing/Display Coordinator . . F, I
Apparel Retailing . . A, D, F
Buyer . . I
Cashier/Checker . . I, K
Clerk . . I
Common "Core" . . F
Customer Service/Service Representative . . I
Fabric Sales . . A
Fashion Merchandising and Management . . G
Finance and Credit . . F
Free Enterprise Economics . . F
General Merchandise Retailing . . D, F, H
Grocery Clerk . . A
Home Entertainment Equipment Representative . . H
Hotel/Motel Clerk (or Front Office) . . A, C
Interior Design and Home Furnishing Sales . . G
Manager/Supervisor/Owner . . I
Marketing
  Food . . D, F
  General . . F, H
  Math . . F

Restaurant
Full Service. . . F
Quick Service . . F
Waiter, Waitress, Cashier . . A
Sales/Distribution Manager . . I
Salesperson, Parts . . C
Stocker . . I
Vehicle: Petroleum, Parts, Accessories (Service Station) . . F
Warehousing Services . . H

Trade and Industrial Education

Appliance and Equipment Repair
Appliance Repairer . . E, H
Business Machine Technology . . G
Electrical Appliance Servicer . . E
Maintenance Mechanic (Industrial) . . E
Marine and Power Equipment Technology . . G
Sales and Service . . G
Small Engine Repair . . D, E, H, K
Automotive
Auto Body
Repairer or Mechanic . . C, D, E, G, H, I
Painter and Refinisher . . I
Auto Diesel Mechanics . . H
Auto Engine and Drive Train Technician . . K
Automatic Transmission/Transaxle Specialist . . I
Automobile Dismantler . . G
Automobile Mechanic . . C, D, E, G, H, J, K
Automotive Specialist . . H
Brake Specialist . . I
Diesel Engine Mechanic . . A, D, E, H, K
Electrical Systems Specialist . . I
Engine Performance Specialist . . I
Engine Repair Specialist . . I
Heating and A/C Specialist . . I
Heavy (Construction) Equipment Maintenance and Repair . . E, H
Suspension and Steering Specialist . . I
Truck and Bus Mechanic . . C, G, H
Construction Trades
Building Cleaning and Care . . G
Building Construction Occupations . . H
Building Maintenance Mechanic . . D, E, G, H
Building Repairer . . K
Cabinetmaking . . H
Carpenter . . A, C, D, E, H, I, J, K
Cornice Carpenter . . I
Drywall Hanger/Finisher . . I
Finish Carpenter (Exterior/Interior Trim) . . I
Form Builder/Form Setter . . I
Form Carpenter . . I
Frame Carpenter . . I
Insulation Installer . . I
Roofer . . I

Carpentry, Commercial . . I
Carpentry, Residential . . I
Company Laborer . . E
Contract Building Services Technician . . G
Electrical Occupations . . H
Construction Electricity . . D, H
Electrical Construction and Maintenance . . H
Electrical Technology . . H
Electrician
Residential (House) . . C, E
Industrial . . E, H
Heating, A/C, Refrigeration Occupations
A/C Mechanic . . E
Heating . . H
Heating and A/C . . C, H
Heating, A/C, Refrigeration . . D
Refrigeration Mechanic . . C, E, H
Sales and Service . . G
Masonry Occupations . . D, H, I, J, K
Bricklayer . . E, I, K
Masonry Helper . . I
Rocklayer . . I
Painting and Decorating . . H
Plumber . . C, E, H
Surveyor Assistant . . E
Cosmetology
Barber . . E
Cosmetologist . . D, E, G, J
Food Services . . D, G
Baker (Head) or Baker Chef . . E
Baking . . H
Chef . . G
Commercial Foods . . H
Cook
Commercial . . C
Head School . . E
Restaurant . . E
Dietetic Technician . . G
Food Production, Management, and Services . . H
Food Service Aide . . G
Kitchen Supervisor . . E
Meatcutter . . E
Personnel . . D
Quantity Food Preparation . . G
Graphic Communications
Architectural Design . . H
Audiovisual Communications . . H
Commercial Art . . D, H
Civil Technology . . H
Drafting Occupations
Architectural . . C, E, I, K
Civil . . E, I
General . . D, H, I
Electronic . . I

Mechanical . . C, E, G, H, I
Process Pipe . . I
Structural . . I
Technical . . J
Graphic Arts . . H, J
Graphic Communications . . G
Lithographic Printing . . D
Printer . . E
Technical Illustrator . . I
Metal Trades
Drill Press Operator . . I
Grinding Machine Operator . . I
Lathe Operator . . I
Machine (Shop) Technology, Trades . . D, G, H, J
Machine Tool Operator . . I, K
Machinist . . C, E, K
Metalworking and Fabrication . . H
Mill Operator . . I
Power Saw Operator . . I
Sheet Metal Worker . . E, H, K
Tool and Die Maker . . E
Welder . . C, D, E, H, K
Burner . . I
General Welder . . I
Mig Welder . . I
Tig Welder . . I
Stick Welder . . I
Welder's Helper . . I
Mining
Maintenance Mechanic (Mining) . . E
Mine Surveyor . . E
Miner . . E
Mining and Quarrying Operating Engineer . . E
Needle Trades
Clothing and Textiles Management and Production . . H, J
Custom Tailor . . E
Furniture Upholsterer . . E, G, H
Technical
Air and Water Analysis Technician . . G
Bio-Medical Equipment Technician . . G
Electro-Mechanical Technician (Technology) . . G, H
Electronics Occupations . . H, J
Audio Video Electronics Technician . . G
Communication (Products) Electronics . . D, G, H
Computer Equipment Repair . . K
Mechanic . . C
Technician (Technology) . . A, E, H
Industrial . . D, H
TV Electronic Systems Technician . . G
Industrial Arts, Exploratory . . J
Industrial Co-op Training . . J
Industrial Laboratory Technician . . G
Laboratory Tester . . E
Quality Control Technician . . G

Technology
Introduction to . . K
Principles of . . J
TV and Audio-Video Production Technician . . G
TV and Radio Repairer . . E
Vending Machine Technician . . G
Wastewater Treatment Technician . . A
Water Treatment Technician . . A
Trade and Industrial Education, Introduction . . J
Transportation
Tractor Trailer/Truck Driver . . K

NOTES

APPENDIX A: PROCEDURES USED TO COMPILE INFORMATION

The following procedures were used to obtain information about currently available competency-based test materials and in-progress developmental efforts.

1. An update search was run on a previous (1985) search of the following databases:

   - o Educational Resources Information Center (ERIC)
   - o Vocational Education Curriculum Materials (VECM)
   - o Educational Testing Service (ETS)

2. A request was sent out over ADVOCNET to all states for information pertaining to local competency test products and projects.

3. Information was obtained from printed materials (see additional readings listed on the inside back cover).

4. Past copies of Open Entries were reviewed for test development projects.

5. Potential sources were contacted at conferences, by telephone, and by mail.

6. Sample materials were obtained and reviewed.

NOTES

APPENDIX B: INFORMATION SOURCES

State Liaison Representatives

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NOTE: State Liaison Representatives and Curriculum Coordination Center sites change periodically. Up-to-date information should be available through your state department or through the current source listed.

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Additional Recommended References

Brickell, Henry M., and Paul, Regina H. *Minimum Competencies and Transferable Skills: What Can Be Learned from the Two Movements.* IN 142. Columbus, OH: The National Center for Research in Vocational Education, The Ohio State University, 1978. ED 183 965

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Clearinghouse for Applied Performance Testing. *Annotated Bibliography on Minimum Competency Testing.* Portland, OR: Northwest Regional Educational Laboratory, CAPT, 1978. ED 156 186

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Open Entries (A Competency-Based Vocational Education Information Exchange). Tallahassee, FL: Florida State University, The Center for Instructional Development and Services.

Shaycoft, Marion F. *Handbook of Criterion-Referenced Testing: Development, Evaluation and Use.* Palo Alto, CA: American Institutes for Research in the Behavorial Sciences, 1979. ED 217 048

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

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