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Accounting testing program of the American Institute of Certified Public Accountants

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THE ACCOUNTING TESTING PROGRAM of the American Institute of Certified Public Accountants

The phenomenal growth of the field of accounting during the past twenty years has motivated sustained effort by certified public accountants to identify properly qualified persons and to attract them into the ranks of the profession. A part of this effort is the development of instruments and techniques for improved guidance and selection of young persons considering a career in accounting. The work with objective tests was started in 1943 with the appointment of a committee by the American Institute of Certified Public Accountants, the national professional society. Experimental work led to means for appraising: (1) aptitude for accounting study and work, (2) vocational interests, and (3) knowledge of accounting principles and procedures. The Educational Records Bureau was designated as a co-ordinating agency, and specialists were engaged to develop tests in the three areas.

Special tests were constructed for the measurement of aptitude and achievement. As soon as the experimental data yielded evidence of satisfactory reliability and validity of the measurement devices, they were released for use by schools and colleges of business and by accounting employers. Extensive testing resulted in the development of special norms for the scales of the Strong Vocational Interest Blank.

These tests are now used widely as an established evaluation procedure. Since the beginning of the program more than 270,000 tests have been given to students of accounting in some 580 colleges and universities. Centers where the tests may be taken by persons not enrolled in college are established throughout the country. A number of public accounting employers consider the results of the tests in hiring personnel; many of these firms administer the tests in their own offices. Some industrial employers and governmental units have also found the tests useful. This evidence of acceptance has encouraged the Institute to view the testing project as a needed service to counselors, educators, and employers.

A continuing program of research is aimed at identification of relationships between performance in tests and professional success, in terms of schooling or preparation and in terms of actual job performance. Data are used in refining the instruments employed and in encouraging the intelligent use of test results. A bibliography of research findings is available on request to the Project Director.

Partly in response to inquiries received from high schools and partly to supplement other vocational materials developed for use at the secondary school level, a high school aptitude testing program has been established. Also, experimental testing with the Kuder Preference Record was undertaken in order to establish special norms for accountants and thus make the results of this inventory more useful in counseling regarding choice of accounting as a career. The high school aptitude test and the special norms for the Kuder Preference Record became available in the fall of 1953.



For the Measurement of Aptitude

The tests developed for this purpose are known as *Orientation Tests*. They are broad-range tests of general aptitude for solving problems of the business type. Three comparable forms of a higher level *Orientation Test* (Forms A, B, and C) and two separate and comparable forms of a lower level *Orientation Test* (Forms S and T) have been developed.

The higher level *Orientation Test* is designed for use with college students and adults. It contains three parts — business and general vocabulary, reading of business materials, and arithmetic problems in the field of business. The test yields a verbal score based on the first two parts, a quantitative score based on the third section, and a total score. It requires fifty minutes of working time. Since it is essentially a measure of intelligence slanted toward business situations, experience in accounting work has only a moderate effect on the scores.

Percentile norms for the higher level *Orientation Test* are available for each year of college study in the accounting curriculum and for each level of employment in the field of public accounting.

The lower level *Orientation Test* is gauged at the high school level. It contains three parts and yields three separate scores for these parts in addition to a total score. The separate parts are: (1) business and general vocabulary, (2) arithmetic problems in the field of business, and (3) problems comparable to those with which accountants work. This test requires forty minutes. Like the higher level test, it is prepared so that the study of bookkeeping or accounting is not a requirement for answering the questions. Percentile norms are available for high school seniors. Norms for high school juniors and sophomores are being developed.

The Orientation Tests provide information concerning abilities which relate to success in the study of accounting. Therefore, the lower level is useful in the guidance work of high schools and in the higher level counseling and placement work of colleges. It has also been found useful in predicting success in accounting firms and business organizations, and in predicting job performance where the ability to solve business problems is required.

For the Measurement of Vocational Interests

No attempt has been made to develop new instruments for appraising vocational interests relating to success in accounting. Special norms for public accountants have been developed for the Strong Vocational Interest Blank and Kuder Preference Record tests. The Strong blank is recommended for use at the college and adult levels. The Kuder test is recommended for use at the high school level.

For the Measurement of Achievement

Two levels of an accounting achievement test have been constructed. The lower level achievement forms, known as Level I, are designed to measure knowledge of accounting after about one year of college accounting study. The advanced achievement test, known as Level II, is planned to measure knowledge of accounting after completion of fifteen to eighteen semester hours in this field or its equivalent in experience.

The Achievement Tests are useful in schools and colleges for checking progress throughout the course of accounting study and for comparing the accounting knowledge of class groups at corresponding levels of study to a large group of students representative of all participating colleges. The Level II Tests are useful to employers for appraising knowledge of accounting principles and procedures.

For the Level I Achievement Test forms, percentile norms are available for each of the first, second and third years of study. Percentile norms available for the Level II Tests include college senior norms for all forms, norms for employed accountants in general for Level II-A, and norms for each level of employment in public accounting for Level II-C. A brief statement of the content of the separate forms of the achievement tests follows:

Achievement Test, Level I (Form A - two hours). Account classification, accounting vocabulary, arithmetic of comparative profit and loss statements, bookkeeping — entering and posting, bank reconciliation, adjustments in ten-column worksheet, analysis of depreciation histories, and tracing the effect of errors.

Achievement Test, Level I (Form B — two hours). Journalizing by account classification numbers, accounting vocabulary, arithmetic of comparative statements, bookkeeping — entering transactions in books, bank reconciliation, analysis of the gross profit formula, analysis of depreciation histories, and tracing the effect of errors.

Achievement Test, Level I (Form C — two hours). Balance sheet and income statements from the raw data, analysis of journal entries, journal entries by account number, flow chart analysis, calculations based on incomplete income statement, bank reconciliation, bad debts analysis,

analysis of depreciation histories, partners' income sharing plan, partnership dissolution, corporation dividends, and corporation dissolution.

Achievement Test, Level I (Form A-S — fifty minutes). Account classification, bookkeeping—entering and posting, bank reconciliation, adjustments in ten-column worksheet, and tracing the effect of errors.

Achievement Test, Level 1 (Form B-S — fifty minutes). Basic terms and concepts, journalizing by account classification numbers, bookkeeping: entering transactions in books, bank reconciliation, analysis of the gross profit formula, and analysis of depreciation histories.

Achievement Test, Level I (Form C-S — fifty minutes). Balance sheet and income statements from the raw data, analysis of journal entries, bank reconciliation, books of original entry and ledgers, classification of accounts, analysis of depreciation histories, and partnership dissolution.

Achievement Test, Level II (Form A — four hours). Fundamental classification relationships, entering transactions in books of original entry, posting books of original entry, analysis of comparative operating statements of branches, cash records and bank reconciliations, analysis of depreciation histories, tracing the effect of errors, inventory methods, influence of inventories on net profits, comparison of inventory methods, analysis of adjustments, and auditing.

Achievement Test, Level II (Form B — four hours). Journal entries by group classification numbers, entering transactions in books of original entry, posting the books of original entry, analysis of adjusting entries, sharing partnership profits, promissory notes and interest calculations, bank reconciliation, depreciation of equipment, judging the effect of errors, comparing inventory methods, meaning of cost or market, and auditing procedures.

Achievement Test, Level II (Form C — two hours). Bookkeeping, bank reconciliation, interpretation of a worksheet, manipulations to affect credit showing, depreciation — unit and group methods compared, manufacturing volume and burden estimates. (Note that this form, and form D below, do not include material on auditing.)

Achievement Test, Level II (Form D — two hours). Fundamental classification relationships, entering transactions in books of original entry, posting books of original entry, analysis of adjustments, cash records and bank reconciliations, analysis of depreciation histories, tracing the effect of errors, inventory methods (influence of inventories on net profits), and comparison of inventory methods.



The central trend of reliabilities for the various tests based on a variety of studies is as follows:

Spearman-Brown

Test	Reliability Coefficient
Orientation Test (advanced level):	
Verbal score	.86
Quantitative score	.85
Total score	.89
Orientation Test (high school level):	
Vocabulary	.87
Arithmetic Reasoning	.76
Accounting Problems	.78
Total score	.91
Achievement Test, Level I (2 hour forms)	.92
Achievement Test, Level I (50 min. forms)	
Achievement Test, Level II (4 hour forms)	
Achievement Test, Level II (2 hour forms)	

Reliable criteria against which to validate the professional tests are not readily found. In the various validity studies three kinds of criteria have been employed with the following results, all of which show relationships which are sufficiently high to indicate that the tests are useful predictive instruments. Additional studies are in process, and the results will be published as they are completed.

1. Relationship of test scores to grades in accounting courses:

	Test	Median Validity Coefficient
	Orientation Test verbal score	.33
	Orientation Test quantitative score	.43
	Orientation Test total score	.43
	Achievement Tests	.59
2.	Relationship of test scores to job performance:	
	Orientation Test total score	.35
	Achievement Tests	.50
3.	Relationship of test scores to grades on the CPA	
	Examinations:	
	Orientation Test verbal score	.33
	Orientation Test quantitative score	.41
	Orientation Test total score	
	Achievement Test, Level II	.54

Research sponsored by the authors and publishers of the two interest inventories has established satisfactory reliability for these instruments and has demonstrated considerable relationship between occupational success and interest as measured by the two instruments. In the work of this project, this published research has been supplemented by careful investigation of the stability of norms released for use.



The tests developed in the work sponsored by the American Institute of Certified Public Accountants are made available in three broad service programs known as: (1) the College Accounting Testing Program, (2) the Professional Accounting Testing Program, and (3) the High School Accounting Testing Program.

The College Accounting Testing Program

This is a service program for schools and colleges of business. The tests are made available for fall, midvear, and spring testing programs. The Orientation Test is stressed in the fall; the Achievement Test, Level II, and the Orientation Test are stressed at midyear; and the Achievement Tests, Levels I and II, are offered in the spring. The Strong Vocational Interest Blank serves equally well in any of the three programs. These are controlled testing programs managed by the project office. Specific testing dates are set. The tests are given by appointed examiners in the participating schools and all testing materials are returned to the project office for scoring and reporting of results. The tests are never sold outright to schools and colleges, but are used on a rental basis, and all supplies must be accounted for carefully. This part of the service program is designed to assist the college counselor in advising students considering a career in accounting, to provide the teacher and the student with a progress check early in the accounting course, to aid accounting seniors in finding employment by furnishing objective measurements of aptitude and proficiency to prospective employers, and to help colleges compare the aptitude and achievement of their students with the aptitude and achievement of a large group of students representative of all participating colleges. All colleges and business schools enrolling accounting students are eligible to take part in the College Accounting Testing Program. Information concerning costs and other details of operation of the college program is available in a separate brochure which can be obtained by writing the Project Director, College Accounting Testing Program, American Institute of Certified Public Accountants, 21 Audubon Avenue, New York 32, New York.

The Professional Accounting Testing Program

Under this program, tests assist employers with personnel selection, placement and promotion. Two procedures have been established for

giving the tests in the Professional Accounting Testing Program:

1. Firms or business organizations may give the tests within their own offices by appointing a personnel staff member to serve as special examiner for the Institute's program. This certified examiner is responsible for ordering, receiving and safeguarding all tests and test supplies. Materials may be kept on hand to anticipate testing needs but the examiner must account for test supplies through periodic reports to the project offlice.

2. For those firms who do not find it practical to provide the time and personnel for local administration of the tests, testing centers have been established in a number of locations throughout the country. Through these testing centers, operated by certified examiners, testing services are extended to local accounting employers who thus benefit from the program without having an examiner certified and without handling test supplies. The centers now established are listed on the last two pages of this brochure. Other centers will be established from time to time as the need arises.

More detailed information concerning costs and operation of the Professional Accounting Testing Program is available in a separate brochure. Write to the Project Director, Professional Accounting Testing Program, 21 Audubon Avenue, New York 32, New York.

The High School Accounting Testing Program

In this program, the most recently developed service aspect of the testing project, the High School Accounting Orientation Test is distributed by the project office through outright sales. It is unlike the college tests in that no attempt is made to control the lower level forms. However, the test should not be self-administered, and sales are not made to individual students. At the present time norms are available to high school seniors for the two forms of the test.

The Kuder Preference Record — Vocational is used quite commonly in high school guidance programs. The research undertaken with the Kuder record was designed to provide special norms for interpreting the appropriateness of interests for undertaking careers in accounting. A profile of mean scores for satisfied public accountants has been established and is available for use by high school counselors and teachers.

Specific information concerning the High School Accounting Testing Program can be obtained by writing to the Project Director, High School Accounting Testing Program, 21 Audubon Avenue, New York 32, New York.



Testing centers have been established in various locations throughout the country to meet two needs.

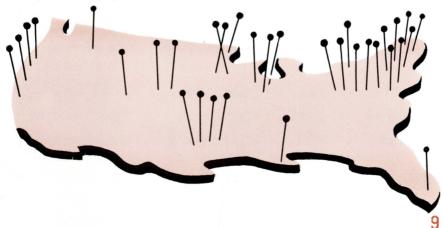
One of the purposes of the testing centers is to offer test service to smaller firms where it is not practical to administer the tests within their own offices. These firms are able to refer applicants for employment to nearby testing centers for the appraisals supplied by the professional tests.

The second purpose which the testing centers serve is that of guidance testing. Inquiries from individuals are received continually at the project office requesting information concerning availability of the tests in local areas. In many instances it is possible to refer such inquiries to nearby testing centers where the individual may take the tests for the purpose of obtaining information concerning his aptitudes, interests, and knowledge for undertaking a career in accounting.

The testing centers offer test service continuously rather than at scheduled periods. The confidential nature of the program is safeguarded by the appointment of a certified examiner to operate the center.

The locations of testing centers now in operation and names of the operating examiners are listed in the following section. Frequently it is possible to make special arrangements for individual testing if the person desiring to take the tests is not located near one of the centers. For example, occasionally arrangements are made for members of the Armed Services to be examined by the local Information and Education officer.

Application forms and information relative to individual testing can be obtained from the Project Director, American Institute of Certified Public Accountants, Accounting Testing Program, 21 Audubon Avenue, New York 32, New York, or from one of the testing centers listed on the following page.



Professional Accounting Testing Program Testing Centers

STATE	CITY	CENTER	EXAMINER
Arkansas	Little Rock	Arkansas Society of CPA's	Orvel M. Johnson
California	Berkeley Los Angeles Palo Alto	University of California University of California Consulting Psychologists Associated	Barbara A. Kirk Lillian L. Ralya John D. Black
	Stanford	Stanford University	John D. Black
Colorado	Denver	Universily of Denver	Wayne Shroyer
Connecticut	Hartford New Haven	Hillyer College Vocational Counseling Service	James J. Sullivan Mayo Schreiber
	New London	Connecticut College	Mortimer H. Applezweig
Dist. of Columbia	Washington	Strayer College	Lawrence K. Dixon
Florida	Coral Gables	University of Miami	C. Lee Philips
Hawaii	Honolulu	University of Hawaii	Arthur A. Dole
Idaho	Moscow	University of Idaho	Willard J. Wilde
Illinois	Chicago	LaSalle Extension University	Lowell C. Doak
Kentucky	Louisville Louisville	1111 Heyburn Building Bellarmine College	Charles H. Hardesty Robert J. Fitzpatrick
Louisiana	New Orleans	800 Baronne Building	O. Randall Braman
Maine	Portland	University of Portland	Owen C. Hall
Massachusetts	Boston	Suffolk University	Leo Lieberman
Michigan	Escanaba	Upper Peninsula Person- nel Service	George W. Rusch
Minnesota	Minneapolis	Psychological Testing Bureau	William A. Ziegler
Missouri	Kansas City	Rockhurst College	Lyman F. Richter
New Jersey	Newark	Rutgers University	William J. von Minden
New York	New York Rochester	AICPA Project Office Rochester Inst. of Technology	Thomas Mahorney Laurence Lipsett

Ohio	Cleveland	Fenn College	George A. Leech
Pennsylvania	Lewisburg Philadelphia Pittsburgh Reading	Bucknell University Temple University University of Pittsburgh Albright College	Harold I. Hinkelman Harold C. Reppert Robert Glaser Morton G. Geil
Rhode Island	Kingston	University of Rhode Island	George W. Lees
South Dakota	Vermillion	University of South Dakota	Harry E. Olson
Texas	Dallas Houston San Antonio Waco	412 City Hall The Personnel Counselors St. Mary's University Baylor University	C. Wedgeworth John H. Anthony Leo M. Donohue Roderick L. Holmes
Wisconsin	Manitowoc	School of Vocational and Adult Education	Richard F. Greig

Other Guidance Materials

The American Institute of Certified Public Accountants has brochures available which may aid in guidance and vocational counseling. Except for the moving picture, which may be obtained directly from the distributor, requests for these materials should be addressed to the American Institute of Certified Public Accountants, 270 Madison Avenue, New York 16, New York.

Career Motion Picture

16 mm. sound motion picture. A simple, dramatic story, it illustrates the advantages of public accounting as a professional career. Viewers learn about a CPA's services to the business community and his concept of professional standards.

The film is available, at no cost other than return postage, for showings to secondary school and college audiences, parent-teacher associations, business service clubs and similar organizations. Requests for bookings, specifying desired and alternate dates, should be sent to *Association Films, Inc.* at the address nearest you:

ASSOCIATION FILMS, INC. 561 Hillgrove Ave. La Grange, III.

ASSOCIATION FILMS, INC. 1108 Jackson Street Dallas 2, Texas ASSOCIATION FILMS, INC. Broad at Elm Ridgefield, New Jersey

ASSOCIATION FILMS, INC. 799 Stevenson Street San Francisco 3, California

