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College accounting testing program bulletin no. 49; Results, 1963-1964

American Institute of Certified Public Accountants. Testing Project Office

THE AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS / TESTING PROJECT OFFICE

RESULTS

1963 — 1964

College Accounting Testing Program

PREPARED BY THE AICPA
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21 AUDUBON AVE., N.Y. 32, N.Y.

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THE AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS
COLLEGE ACCOUNTING TESTING PROGRAM

CONTENTS

INSTITUTIONS PARTICIPATING IN THE 1963-1964 COLLEGE ACCOUNTING TESTING PROGRAMS

The programs in which the colleges participated are indicated by the letters after the names as follows:
(F)-Fall, 1963; (M)-Midyear, 1964; (S)-Spring, 1964

Adelphi College (S)
A & M College of Texas (S)
University of Akron (M,S)
University of Alabama (S)
Albany Business College (S)
Allegheny College (M,S)
Alpena Community College (F,S)
Amarillo College (S)
American International College (S)
American Institute of Business (F,M)
University of the Americas (F,S)
Anderson College (S)
Anchorage Community College (F)
Arizona State University (F,S)
Arkansas College (S)
Arkansas State College (S)
Arkansas Polytechnic College (M)
Ashland College (S)
Atlantic Union College (F,S)
Aurora College (S)

Babson Institute-Massachusetts (F)
Badger Green Bay Business Institute (S)
Ball State Teachers College (S)
Baltimore College of Commerce (S)
University of Baltimore (S)
Bellarmine College (M,S)
Bentley College of Accounting & Finance (S)
Berea College (S)
Berkshire Community College (S)
Bismarck Junior College (S)
Belmont College (F)
Bliss College (F,S)
Bloomfield College (S)
Bluefield College (S)
Bob Jones University (M)
Bowling Green State University (M,S)
Bradley College (S)
Bridgewater College (S)
Brigham Young University (F,S)
Brooklyn College (F,S)
Broome Technical Community College (S)
Bryant College (F,M,S)
Burdett College (S)

Cabrillo College (S)
Calvin College (S)
Canisius College (S)
Carson-Newman College (S)
Catawba College (M,S)
Central Michigan University (S)
Chaffey College (M,S)
University of Chattanooga (S)
Chicago Teachers College (S)
Chico State College (F)
Chowan College (M)
Christian Brothers College (M)
Clark College (S)
Cleary College (F,S)
Coleman Vocational and Adult Schools (S)
Colorado College (S)
Colorado State College (S)
University of Colorado (S)
Columbia College-South Carolina (S)
Concord College (S)
Cornell College (S)
University of Connecticutt (M)

Dana College (S)
David Lipscomb College (F,S)
University of Dayton (S)
University of Delaware (S)
De Paul University (F,S)
De Pauw University (S)
Detroit Institute of Technology (S)
Dickinson College (F,S)
Dominican College (S)
Drake University (F,M,S)
University of Dubuque (F,S)
Duff's Iron City Business Institute (F,S)
Duquesne University (M,S)

East Carolina College (F,M,S)
East Tennessee State College (S)
Eastern Michigan College of Commerce (F,S)
Eastern Washington State College (S)
Elizabethtown College (M,S)
Elon College (S)
Erie Business Center (S)
Evansville College (S)

Fairfield University (S)
Fenn College (S)
Flint College-University of Michigan (S)
Flint Community Junior College (M,S)
Florence State College (S)
Florida A & M University (F)
Florida Southern College (S)
Florida State University (S)
University of Florida (F,M)
Fordham University (M)
Franklin & Marshall College (M)
Freed-Hardman College (M)

Gallaudet College (M,S)
Gannon College (S)
Gates College (M,S)
Gavilan College (S)
Globe Business College (M)
Golden Gate College (F,M)
Goshen College (S)
Graceland College (M)

Hamilton College (F)
Hampton Institute (S)
Harding College (F)
Harpur College (S)
University of Hartford (F,S)
University of Hawaii (M)
Hofstra University (F,M,S)
College of the Holy Cross (M,S)
Hope College (S)
Humboldt State College (S)
Humphreys College (M)
Huntingdon College (S)
Husson College (F,M)

College of Idaho (S)
Immaculata College (S)
Indiana Central College (S)
Indiana State College-Pennsylvania (S)
Iola Junior College (S)
Iona College (S)
State University of Iowa (M)
Ithaca College (S)

Jackson Junior College (S)
Jacksonville University (S)
Jefferson Community College (S)
John Carroll University (M)

Kent State University (F,S)
Keuka College (S)
Knapp College (S)

Lafayette College (M)
Lamar State College of Technology (S)
Langston University (F)
LaSalle College (S)
Lawrence College (S)
Lebanon Valley College (S)
Lee College (S)
Lehigh University (S)
Lewis & Clark College (M,S)
Lincoln University (S)
Little Rock University (S)

INSTITUTIONS PARTICIPATING IN 1963-1964 PROGRAMS (Continued)

Long Island University (F,M)
University of Louisville (M,S)
Luther College (S)
Lycoming College (S)

Manchester College (S)
Manhattan College (F,S)
Mankato State College (M,S)
Marquette University (F,M,S)
Mars Hill College (S)
University of Massachusetts (M,S)
McIntosh College (F,S)
McMurry College (S)
Memphis State University (F,S)
Merrimack College (S)
Miami University (F)
University of Miami (M,S)
Middle Tennessee State College (S)
Middlebury College (S)
Midland Lutheran College (S)
Midwest Institute of
Business Administration (F,S)
Millikin University (S)
Mississippi College (S)
Mississippi State University (S)
University of Mississippi (S)
Monmouth College (F)
Montana State College (S)
Moravian College (S)
Morehead State College (F,S)
Muhlenberg College (M)
Murray State College (F,M)

Nasson College (F,S)
New England College (M)
New York City
Community College (F,S)
New York State Ag.-Tech.
Institute-Alfred (F,S)
New York State Ag.-Tech.
Inst.-Cobleskill (S)
Niagara County Community College (F)
Niagara University (M,S)
Nichols College of
Business Administration (S)
Norfolk State College (F)
North Alabama College
of Commerce (M)
University of North Carolina (F,S)
North Central College (S)
Northern Illinois University (F)
Northern State Teachers College (S)
Northland College (S)
Norwalk Community College (S)

Ohio State University (S)
University of Omaha (S)
Orange County Community College (S)
Olympic College (M)

Pacific Union College (S)
Pacific University (S)
University of the Pacific (F)
Parsons College (F,M,S)
Peirce School of
Business Administration (M,S)
Pennsylvania Military College (S)
University of Pennsylvania (F,S)
Pfeiffer College (F,S)
Phoenix College (S)
Port Huron Junior College (S)
Providence College (F,M,S)

Queens College (F,M,S)
Quincy College (M,S)

Regis College-Colorado (S)
University of Rhode Island (S)
Richmond Professional Institute (S)
Rider College (S)
Riverside City College (F,S)
Robert Morris Junior College (F,S)
Rochester Institute
of Technology (S)
University of Rochester (M,S)
Roosevelt University (M,S)
Rutgers, The State
University-Camden (M,S)
Rutgers, The State
University-Newark (F)

Saginaw Business Institute (F,S)
St. Ambrose College (S)
St. Francis College-New York (S)
St. Francis College-Pennsylvania (S)
St. John's University-Minnesota (S)
St. John's University-New York (S)
St. John Fisher College (F,M)
St. Joseph's College-
Calumet Campus (F,S)
St. Joseph's College-Indiana (S)
St. Martin's College (S)
St. Mary's College (M)
St. Mary's University (M,S)
St. Michael's College (S)
St. Norbert College (M,S)
St. Olaf College (S)
St. Peter's College (S)
St. Petersburg Junior College (S)
St. Vincent College (S)
Salisbury Business Institute (S)
San Diego Mesa College (F,S)
San Diego State College (M)
City College of San Francisco (F,S)
University of San Francisco (S)
College of the Sequoias (S)
Seton Hall University (S)
Shasta College (S)
Siena College (F,M,S)

Skagit Valley College (F,S)
State University of South Dakota (S)
University of South Florida (S)
Southern Illinois University (S)
Southern Missionary College (S)
Southern State College (S)
University of South-
western Louisiana (S)
Southwestern University
in New Orleans (M)
Southwestern University-Texas (F,S)
Spring Hill College (S)
Strayer Junior College (S)
Susquehanna University (F,S)

Taft College (S)
University of Tennessee (F)
Texas College of Arts
and Industries (S)
Texas Western College (S)
Thompson Institute (S)

Union Junior College (F,S)
Ursinus College (S)

Villa Madonna College (M,S)
Virginia Junior College (S)
Virginia Polytechnic Institute (F,S)
University of Virginia (F)

Wake Forest College (F,S)
Walla Walla College (S)
Walsh Institute of Accountancy (S)
Washington and Lee University (F,S)
Washington State University (S)
West Liberty State College (S)
West Texas State College (S)
West Virginia State College (F,S)
West Virginia University (S)
Western Kentucky State College (M)
Western State College (S)
Wheaton College (S)
Wheeling College (F,S)
Whitman College (S)
Wilkes College (S)
Willamette University (S)
College of William and Mary (F,M,S)
University of Windsor (M,S)
Winona State College (F,S)
Wisconsin State College-Eau Claire (S)
Wisconsin State College-La Crosse (S)
Wisconsin State College-River Falls (S)
Wisconsin State College-Whitewater (S)
University of Wisconsin-Madison (M)
University of Wisconsin-Milwaukee (M,S)
Woodbury College (F,S)
University of Wyoming (S)

Xavier University (F,M,S)

The 298 institutions listed above include eighty that tested in the 1963 fall program, seventy-one in the 1964 midyear program, and 249 in the 1964 spring program. Of these, 208 are represented in one of the three programs, seventy-nine in two, and eleven in all three of the 1963-64 programs.

INTRODUCTION

The College Accounting Testing Program was initiated in the fall of 1946 as a service to schools and colleges of business. Three yearly programs are offered: fall (September-October), midyear (January-February), and spring (April-May). The Testing Project Office also scores and reports for testings throughout the year outside these three formal programs.

With this issue of the College Accounting Testing Program Bulletin, the AICPA Testing Project Office is inaugurating a policy of publishing a single annual bulletin at the end of each academic year. These bulletins will show the distributions and statistics for the tests used in the fall, midyear, and spring programs of that year. An analysis of the year's results, including comparisons with the results of previous years, will also be included in these annual bulletins. One or more research articles pertaining to the tests will appear in most issues. Formerly, a bulletin was published after each of the three seasonal programs. The Testing Project Office staff hopes that the participating colleges will welcome this change in procedure and will find the comprehensive annual bulletin more useful than the former seasonal issues. Comments about this new procedure will be welcomed.

As in past years, the 1963 fall program featured the use of the Orientation Test and the Strong Vocational Interest Blank as measures of aptitude and interests in the field of accounting. The 1964 midyear program served colleges that were unable to schedule fall testing and those that wanted to test seniors for employment interviews before June graduation. The 1964 spring program emphasized the use of the Level I and Level II achievement tests for evaluating academic progress in the study of accounting.

The first College Accounting Testing Program in the fall of 1946 listed twenty-nine participants. During the past five years, an average of eighty institutions participated in the fall programs. Fifty-seven colleges took part in the first (1947) spring program. The recent spring programs have attained an average of nearly two hundred and fifty participating institutions. The auxiliary midyear program was originated in January, 1951, with fifty colleges listed. The current average of midyear participants is about seventy. More than seven hundred colleges have taken part in the fifty-one seasonal programs that have been conducted since the inception of the College Accounting Testing Program in 1946, and more than a half-million tests have been used.

The scoring and reporting services were conducted at the usual tempo during the 1963-64 programs. For example, 52 per cent of the spring program reports were mailed within twenty-four hours of the time the answer sheets were received for scoring. An additional 30 per cent of the reports for that program went out from two to four days after receipt of the answer sheets.

Judging from the comments received in letters and on report acknowledgment cards, most of the participating colleges are enthusiastic about the value of the Institute's testing programs. Continuous participation by very much the same group of colleges has enabled the Testing Project Office to compile valid and stable norms, based on results for substantial numbers of students. Some colleges have rendered special service to the program by giving new forms of the tests experimentally, thus enabling the committee to analyze and perfect the items before publishing the program editions of the tests. Additional assistance of this nature will be needed during the 1964-65 academic year for the new forms of the Level I tests that are being developed.

The number of participating colleges and the total quantity of tests used during the past year were substantially the same as the totals for the previous year (Table I). The 1963 fall program was the largest of the five-year period in terms of the quantity of tests used. This increase was offset in the total quantity for the year by small decreases in the amounts of tests administered in the midyear and spring programs.

The pattern of the relative amount of use of the various types of tests in the 1963-64 programs, as shown in Table II, is quite similar to that of the previous 1962-63 programs. Again this year, nearly three-fourths of the tests used in the fall program were Orientation

tests. In the midyear program, the use of the Level II achievement tests increased from 18 per cent last year to 27 per cent this year, while the use of the Level I and Orientation tests in that program decreased somewhat. The trend in the spring program was toward a little more use of the two-hour forms of the Level I test and slightly less use of the other tests. For the year as a whole, the Orientation Test accounted for about a third of the total volume, Level I tests about 44 per cent, and the Level II tests about 16 per cent. The Strong Vocational Interest Blank and non-program forms of the other tests made up the other 7 per cent of the total volume for the year.

TABLE I

NUMBER OF PARTICIPATING COLLEGES AND QUANTITIES OF TESTS USED DURING THE PAST FIVE YEARS

YEAR	FALL PROGRAM		MIDYEAR PROGRAM		SPRING PROGRAM		TOTAL FOR YEAR	
	COLLEGES	TESTS	COLLEGES	TESTS	COLLEGES	TESTS	COLLEGES	TESTS
1959-60	71	7,743	64	3,255	214	12,597	264	23,595
1960-61	75	8,408	63	3,056	254	15,362	293	26,826
1961-62	88	8,363	67	3,499	235	15,536	287	27,398
1962-63	86	8,158	74	4,381	245	15,443	299	27,982
1963-64	80	8,921	71	3,845	249	15,210	298	27,976

TABLE II

QUANTITIES OF EACH OF THE TESTS USED IN THE 1963-64 PROGRAMS

TEST	FALL, 1963		MIDYEAR, 1964		SPRING, 1964		TOTAL FOR YEAR	
	NUMBER	PER CENT	NUMBER	PER CENT	NUMBER	PER CENT	NUMBER	PER CENT
Orientation Test	6,486	73%	1,160	30%	1,551	10%	9,197	33%
Achievement Tests								
Level I, Short Form	1,022	11%	842	22%	5,761	38%	7,625	27%
Level I, 2-Hour Form	-	-	688	18%	4,040	27%	4,728	17%
Level II, 2-Hour Form	284	3%	990	26%	2,753	18%	4,027	14%
Level II, 4-Hour Form	28	1%	22	1%	513	3%	563	2%
Strong Blank and Non-Program Forms	1,101	12%	143	3%	592	4%	1,836	7%
Totals	8,921	100%	3,845	100%	15,210	100%	27,976	100%

The numbers of institutions of various types that participated in the 1963-64 programs, with corresponding figures for the previous year, are shown in Table III. More than half of the participating institutions, or about 54 per cent, were liberal arts colleges, as compared with about 49 per cent the year before. Schools of business in universities again comprised about a fourth of the total. Independent business schools, junior colleges, technical colleges, and teachers colleges constituted about a fifth of the total group this year, which was a slight drop from approximately a fourth the year before.

TABLE III

PARTICIPATION BY TYPE OF COLLEGE DURING THE PAST TWO YEARS

TYPE OF INSTITUTION	1962-63 PROGRAMS		1963-64 PROGRAMS	
	NUMBER	PER CENT	NUMBER	PER CENT
Liberal Arts Colleges	146	48.8	160	53.7
Schools of Business in Universities	78	26.1	76	25.5
Independent Business Schools	30	10.0	25	8.4
Junior Colleges	25	8.4	18	6.0
Technical Colleges	15	5.0	14	4.7
Teachers Colleges	5	1.7	5	1.7
Totals	299	100.0	298	100.0

As will be seen from Table IV, the geographical distribution of the participating institutions showed very little change from the previous year. Forty-seven states and the District of Columbia, Canada, and Mexico were represented in the 1963-64 programs. The North Central region led, with 86 participating institutions, followed by the South with 84 and the Middle Atlantic region with 63.

TABLE IV

COMPARISON OF GEOGRAPHICAL REGION PARTICIPATION DURING THE PAST TWO YEARS

REGION	1962-63 PROGRAMS		1963-64 PROGRAMS	
	NUMBER	PER CENT	NUMBER	PER CENT
New England	22	7.4	23	7.7
Middle Atlantic	63	21.1	65	21.8
North Central	86	28.8	82	27.5
South	84	28.1	82	27.5
West	42	14.0	44	14.9
Canada	1	.3	1	.3
Mexico	1	.3	1	.3
Totals	299	100.0	298	100.0

The Testing Project Office offers its services throughout the year, including the summer, and is glad to cooperate in special research projects and scholarship programs involving the use of the Institute's tests. During the past year, it provided scoring and reporting services for the scholarship testings of the Florida, Mississippi, and New Jersey Societies of CPAs and for research studies conducted by the University of Massachusetts and the Washington State Board of Accountancy.

SUMMARY OF TEST RESULTS

Distributions of the scores and college medians for the recommended forms of the Orientation and Achievement Tests are shown in the tables on the following pages. Indicated numerically at the bottom of each distribution are: the number of students tested and the number of colleges; the median, quartiles, range, and the 90th and 10th percentile points. Medians are not reported for less than five frequencies, nor are quartiles, 90th, and 10th percentile points shown for less than fifteen frequencies.

The medians are shown graphically by the short horizontal lines adjacent to the distributions. The ranges of the middle 50 per cent of the scores are marked by the vertical lines parallel to the distributions. Norm medians, based on results obtained in earlier programs, are indicated by broken lines extending across the distribution columns.

The Q3, median, and Q1 points are the scores that divide the distributions into fourths. A Q3 entry in a column signifies that one-fourth of the students tested had scores above that point, and that three-fourths of the students fell below it. At the other end of a distribution, a Q1 entry represents the point below which one-fourth of the students' scores fell. The median denotes the midpoint in the distribution. The 90th percentile and 10th percentile points separate the highest 10 per cent and the lowest 10 per cent of the distribution from the other 80 per cent.

In accordance with the customary procedure, the results obtained from the tests administered to students on a voluntary participation basis are reported in separate distributions. Participation is regarded to have been on a voluntary basis when less than 90 per cent of the students in a given class took the test.

A summary of the results of the various tests is given below.

Fall, 1963 (Tables VIII-XI): As will be seen from the statistical tables in the following section of this bulletin, the 1963 fall program medians for Form B of the Orientation Test and for Form B-S of the Level I Achievement Test are very close to the established norm medians. On Form E of the Level II Achievement Test, the fall program median for seniors is about five percentile points above the norm median, which is based on the results of the fall programs of 1960-62.

Midyear, 1964 (Tables XII-XV): Since relatively small groups of students are tested in the midyear programs, the medians in these programs tend to show more variation than do those in the fall and spring programs. Nevertheless, the verbal median of first-year students on the Orientation Test, Form C, in the 1964 midyear program is about the same as the 1961-63 norm median, and the quantitative median of these students is less than two percentile points above the corresponding norm median. The current midyear program median for first-year students on Form C-S of the Level I test is about three percentile points below the 1958-63 norm median, while the median on the two-hour Form C of the Level I test for first-year students in that program is six percentile points above the 1956-63 norm median. The group of seniors who were tested with Form E of the Level II Achievement Test in the midyear program had a median that is about two percentile points above the 1961-63 norm median.

Spring, 1964 (Tables XVI-XXI): The 1964 spring program medians of first-year students tested with Forms A-S and A of the Level I test and Form A, revised, of the Orientation Test do not differ from the established norm medians to any appreciable extent. Similarly, the medians of the seniors tested this spring on a required basis with Forms F and B of the Level II test are within a few percentile points of the norm medians based on the results of previous spring programs. The program medians of some of the relatively small groups of second-year and third-year students, as well as some of those of students tested at various levels on a voluntary basis, tend to show somewhat larger variations from the established norm medians.

In Tables V-VII, successive program medians during the 1960-64 period are shown for the major groups tested with the Orientation and Achievement tests. The sizeable groups of first-year accounting students who have taken Form B of the Orientation Test during the past four

years that the revised form of this test has been offered have maintained relatively stable medians. Their fall program medians on the Verbal, Quantitative, and Total score scales of this test are all within the percentile range of 48-55 on the current norms.

TABLE V

1960-63 FALL PROGRAM MEDIANS OF FIRST-YEAR STUDENTS ON THE ORIENTATION TEST, FORM B, REVISED

YEAR	STUDENTS	COLLEGES	MEDIAN RAW SCORES			%ILE ON CURRENT NORMS		
			VERBAL	QUANT.	TOTAL	VERBAL	QUANT.	TOTAL
1960	5,734	47	36.5	23.7	60.0	53	48	48
1961	6,285	57	37.2	25.2	62.1	55	52	51
1962	6,303	59	35.9	24.2	60.3	50	50	49
1963	6,304	53	36.8	25.0	61.6	54	52	51

The medians of first-year accounting students on Forms A-S and A of the Level I Achievement Test have also been quite stable in recent years. During the 1960-64 spring programs, these medians have consistently fallen in the percentile range of 47-57, using the current norms as the base. No distinct upward or downward trend is evident in these medians.

TABLE VI

1960-64 SPRING PROGRAM MEDIANS OF FIRST-YEAR STUDENTS ON THE LEVEL I ACHIEVEMENT TEST, FORMS A-S AND A

YEAR	LEVEL I, FORM A-S				LEVEL I, FORM A			
	NO. OF STUDENTS	NO. OF COLLEGES	MEDIAN RAW SCORE	%ILE ON CURRENT NORMS	NO. OF STUDENTS	NO. OF COLLEGES	MEDIAN RAW SCORE	%ILE ON CURRENT NORMS
1960	3,283	65	32.4	57	3,438	68	53.4	53
1961	4,998	86	31.0	52	4,436	78	50.7	47
1962	4,781	86	31.6	54	3,814	72	52.9	52
1963	5,796	86	30.7	51	2,977	59	53.6	53
1964	5,155	89	30.6	51	2,860	61	53.1	52

In the midyear programs, the medians of seniors on Form E of the Level II test, which was introduced in 1961, rose seven raw score points between 1961 and 1963, but fell back about one raw score point in the 1964 program. The relatively low median in 1961 for the group of 372 seniors corresponds to a percentile of 34 on the current norms, while the most recent midyear program median on this test is equivalent to a percentile of 57.

The spring program medians of seniors on Form F of the Level II test, which was published in 1962, have varied less than a raw score point during the past three years. The percentiles corresponding to these medians are in the narrow percentile range of 51-53 on the current norms.

TABLE VII

1961-64 MIDYEAR AND SPRING PROGRAM MEDIANS OF SENIORS ON THE LEVEL II ACHIEVEMENT TEST, FORMS E AND F

YEAR	LEVEL II, FORM E (MIDYEAR PROGRAMS)				LEVEL II, FORM F (SPRING PROGRAMS)			
	NO. OF STUDENTS	NO. OF COLLEGES	MEDIAN RAW SCORE	%ILE ON CURRENT NORMS	NO. OF STUDENTS	NO. OF COLLEGES	MEDIAN RAW SCORE	%ILE ON CURRENT NORMS
1961	372	21	25.5	34	-	-	-	-
1962	510	26	30.6	53	1,746	79	37.1	52
1963	614	29	32.5	60	1,550	70	37.3	53
1964	829	33	31.6	57	1,870	75	36.6	51

In summary, the results of the programs during the 1960-64 period indicate that the median levels of aptitude and achievement of the accounting students tested have shown little change during this period, especially where the medians are based on groups of at least 500 students.

TABLE VIII, FALL, 1963

ORIENTATION TEST, FORM B, REVISED
FIRST YEAR STUDENTS

VERBAL			QUANTITATIVE			TOTAL		
SCORE	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES	SCORE	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES	SCORE	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES
90			60	8		150		
87			58	18		145		
84			56	8		140	1	
81	2		54	48		135	1	
78	5		52	73		130	7	
75	17		50	102		125	15	
72	33		48	122		120	34	
69	51		46	69		115	47	
66	68		44	139		110	70	
63	89		42	206		105	117	
60	140		40	195	1	100	159	
57	181		38	242	2	95	208	
54	245	1	36	208	2	90	242	2
51	302	2	34	249	3	85	313	3
48	366	3	32	284		80	340	2
45	428	3	30	323	2	75	371	1
42	436	3	28	341	3	70	431	3
39	431	6	26	332	6	65	462	7
36	- - -498 - - - - - -	-5- - -	24	- - -383 - - - - -	-5- - -	60	- - -497 - - - - -	-9- - -
33	487	11	22	351	5	55	504	4
30	519	6	20	349	6	50	496	7
27	441	4	18	408	11	45	444	6
24	406	5	16	326	3	40	409	6
21	327	2	14	327	2	35	325	1
18	281		12	275		30	284	
15	212	1	10	240		25	208	
12	133	1	8	198	1	20	130	1
9	82		6	165		15	81	1
6	51		4	114	1	10	47	
3	42		2	83		5	43	
0-2	31		0-1	118		0-4	18	
Total	6304	53	Total	6304	53	Total	6304	53
Q3	47.5	41.4	Q3	34.9	27.9	Q3	79.7	68.4
Md	36.8	35.0	Md	25.0	23.0	Md	61.6	60.3
Q1	27.1	30.1	Q1	16.3	19.1	Q1	45.3	48.5
Range	0-81	12.9-55.2	Range	0-60	5.2-40.5	Range	0-140	18.7-94.7
90 %ile	56.5	48.7	90 %ile	43.6	35.8	90 %ile	95.7	84.3
10 %ile	18.8	24.8	10 %ile	9.5	16.9	10 %ile	31.8	41.9

- - - Medians, combined fall programs, 1960 through 1963

TABLE IX, FALL, 1963

ORIENTATION TEST, FORM B, REVISED
SECOND YEAR STUDENTS

VERBAL			QUANTITATIVE			TOTAL		
SCORE	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES	SCORE	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES	SCORE	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES
90			60			150		
87			58	1		145		
84			56	2		140		
81			54	1		135		
78			52	1		130		
75	1		50	6		125		
72			48	5	1	120		
69			46	6		115	1	
66			44	5		110	4	
63	5		42	4		105	5	
60	3		40	6		100	9	1
57	10	1	38	7		95	7	
54	10		36	6		90	9	
51	10		34	5	2	85	7	
48	9	1	32	7		80	11	1
45	12		30	8	1	75	15	1
42	9	1	28	14		70	10	
39	7		26	7		65	6	1
36	13		24	4		60	11	
33	5		22	7	1	55	10	1
30	9	2	20	8		50	5	
27	7		18	4		45	3	
24	5		16			40	4	
21	1		14	4		35		
18	4		12	3		30	5	
15	2		10	1		25	1	
12	1		8			20	1	
9			6	1		15		
6	1		4	1		10		
3			2			5		
0-2			0-1			0-4		
Total	124	5	Total	124	5	Total	124	5
Q3	53.4		Q3	42.0		Q3	92.2	
Md	44.3	43.5	Md	32.0	34.5	Md	77.0	77.5
Q1	33.6		Q1	25.0		Q1	60.9	
Range	8-76	30.0-58.5	Range	5-58	22.0-49.0	Range	21-119	56.4-102.5
90 %ile	59.0		90 %ile	49.4		90 %ile	103.7	
10 %ile	26.0		10 %ile	19.2		10 %ile	47.3	

- - - Medians, combined fall programs, 1960 through 1963

TABLE X, FALL, 1963

ACHIEVEMENT TEST, LEVEL I
FORM B-S

SCORE	FIRST YEAR		SECOND YEAR	
	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES
60				
58				
56	5			
54	7		2	
52	20		3	
50	14		4	
48	25	1	8	
46	29		5	
44	44	1	4	
42	32	1	10	2
40	46	1	9	1
38	36	2	2	1
36	46	4	4	
34	49	3	8	
32	30	2	4	
30	47	1	2	
28	38	1	1	
26	41		3	
24	33	1	3	
22	28	1	1	
20	24		3	
18	23	2	1	
16	12	1		
14	21			
12	14			
10	13			
8	5			
6	7			
4	6			
2	3			
0-1	3			
Total	701	22	77	4
Q3	42.0	38.5	47.1	
Md	34.1	35.3	41.4	
Q1	25.0	29.0	34.3	
Range	0-57	17.0-48.7	18-55	38.0-43.0
90 %ile	48.1	43.6	50.7	
10 %ile	15.8	19.2	25.8	

- - - Medians, combined fall programs, 1956 through 1962

TABLE XI, FALL, 1963

ACHIEVEMENT TEST, LEVEL II, FORM E
SENIOR STUDENTS

SCORE	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES
78		
76		
74		
72		
70		
68		
66		
64	1	
62	1	
60		
58	1	
56	4	
54	5	
52	7	
50	6	
48	9	1
46	8	
44	4	
42	9	
40	11	1
38	15	
36	13	1
34	15	2
32	23	1
30	16	1
28	21	1
26	23	
24	7	
22	10	1
20	10	
18	10	
16	2	
14	4	
12		
10	2	
8	1	
6		
4		
2		
0-1		
Total	238	9
Q3	41.2	
Md	33.1	34.5
Q1	27.2	
Range	9-64	23.5-48.7
90 %ile	50.4	
10 %ile	21.0	

- - - Median, combined fall programs, 1960 through 1962

TABLE XII, MIDYEAR, 1964

ORIENTATION TEST, FORM C, REVISED
FIRST YEAR STUDENTS

VERBAL			QUANTITATIVE			TOTAL		
SCORE	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES	SCORE	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES	SCORE	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES
90			60			150		
87			58	1		145		
84			56	2		140		
81			54	2		135		
78			52	8		130		
75	1		50	10		125	2	
72			48	8		120	1	
69	4		46	16		115	3	
66	5		44	18		110	7	
63	8		42	37		105	13	
60	21		40	36		100	17	
57	26		38	38	1	95	25	
54	27		36	45		90	44	
51	44		34	60	2	85	56	1
48	51	2	32	43	1	80	61	
45	72		30	57	2	75	62	3
42	72	3	28	64		70	78	2
39	98	1	26	54		65	88	1
36	83	2	24	55		60	87	
33	82	1	22	77	2	55	70	3
30	84	1	20	53	4	50	82	
27	79	1	18	45		45	65	1
24	64	2	16	48	1	40	60	2
21	44		14	37	1	35	43	1
18	30		12	35		30	35	
15	28		10	42		25	29	
12	22	1	8	24		20	20	
9	12		6	18		15	12	
6	3		4	12		10	3	
3	4		2	8		5	2	
0-2	2		0-1	13		0-4	1	
Total	966	14	Total	966	14	Total	966	14
Q3	45.7		Q3	35.3		Q3	79.0	
Md	37.0	37.5	Md	26.6	23.0	Md	63.5	62.5
Q1	28.2		Q1	18.2		Q1	47.8	
Range	0-76	14.5-49.0	Range	0-58	15.8-38.8	Range	3-127	37.5-86.1
90 %ile	53.7		90 %ile	42.3		90 %ile	91.8	
10 %ile	20.6		10 %ile	11.0		10 %ile	34.2	

- - - Medians, combined midyear programs, 1961 through 1963

TABLE XIII, MIDYEAR, 1964

ACHIEVEMENT TEST, LEVEL I
FORM C-S

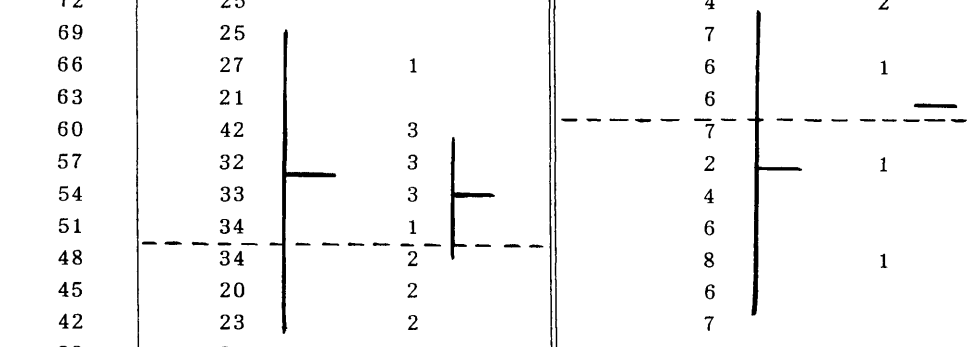
SCORE	FIRST YEAR		SECOND YEAR	
	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES
60				
58	1			
56				
54	1			
52	1			
50	2		1	
48	10		3	
46	15		1	
44	13		3	
42	14		3	
40	19		3	1
38	21	2		
36	20		3	
34	35	2	3	
32	19	1	4	
30	35	2	8	1
28	26	1	3	
26	34	1	7	1
24	36	1	3	
22	37	2	2	1
20	44		2	
18	56	3	2	
16	36	1	3	
14	42	2	2	
12	41	1	1	
10	32	1		
8	40	1	2	
6	22		1	
4	26		1	
2	16			
0-1	8			
Total	702	21	61	4
Q3	31.7	31.8	37.2	
Md	21.5	23.5	30.4	
Q1	13.5	16.5	23.3	
Range	0-58	9.4-38.5	5-50	23.0-40.0
90 %ile	40.6	35.9	45.3	
10 %ile	7.8	12.2	15.1	

- - - Medians, combined midyear programs, 1958 through 1963

TABLE XIV, MIDYEAR, 1964

ACHIEVEMENT TEST, LEVEL I
FORM C

SCORE	FIRST YEAR		SECOND YEAR	
	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES
111-135				
108	2		1	
105	1			
102	3			
99	4		2	
96	5		2	
93	7			
90	6			
87	13		4	
84	15		4	
81	8		5	
78	20		2	
75	14		3	
72	25		4	2
69	25		7	
66	27	1	6	1
63	21		6	
60	42	3	7	
57	32	3	2	1
54	33	3	4	
51	34	1	6	
48	34	2	8	1
45	20	2	6	
42	23	2	7	
39	31		3	
36	22		5	
33	19		1	
30	18		4	
27	16		1	
24	13		3	
21	6			
18	6		2	1
15	3		2	
12	5		2	
9			1	
6	1			
3				
0-2	1			
Total	555	17	110	6
Q3	70.1	59.8	71.8	
Md	56.3	54.5	57.0	63.0
Q1	41.8	48.4	43.5	
Range	0-108	43.0-68.1	10-108	19.5-73.5
90 %ile	84.1	62.3	85.5	
10 %ile	30.8	44.6	30.0	



- - - Median, combined midyear programs, 1956 through 1963

- - - Median, combined midyear programs, 1953 through 1963

TABLE XV, MIDYEAR, 1964

ACHIEVEMENT TEST, LEVEL II
FORM E

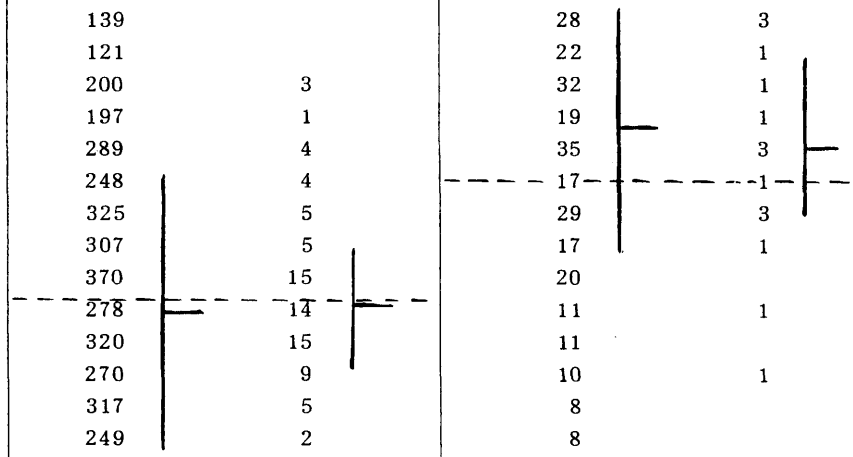
SCORE	SENIORS		COMBINED SECOND AND THIRD YEARS	
	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES
78				
76				
74				
72				
70				
68				
66				
64	2		1	
62	4			
60	4			
58	8			
56	13			
54	7			
52	14		2	
50	13		1	
48	20		2	
46	20	1	3	
44	15		1	
42	40			
40	29	3	6	
38	42		4	
36	62	5	6	
34	49	3	6	
32	60		11	1
30	58	4	10	1
28	65	8	12	1
26	67	3	19	1
24	52	4	10	1
22	51	2	20	2
20	35		3	
18	37		11	
16	26		10	1
14	16		7	
12	12		4	
10	5		3	
8	2		1	
6	1			
4			1	
2				
0-1				
Total	829	33	154	8
Q3	39.1	36.3	32.8	
Md	31.6	29.9	26.7	26.0
Q1	24.9	27.5	21.0	
Range	6-64	23.5-46.3	4-64	16.0-33.0
90 %ile	48.2	40.5	40.2	
10 %ile	19.1	24.7	15.8	

- - - Medians, combined midyear programs, 1961 through 1963

TABLE XVI, SPRING, 1964

ACHIEVEMENT TEST, LEVEL I, FORM A-S REQUIRED

SCORE	FIRST YEAR		SECOND YEAR	
	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES
60			2	
58	5		3	
56	15		16	
54	33		13	
52	68		30	
50	65		14	
48	139		28	3
46	121		22	1
44	200	3	32	1
42	197	1	19	1
40	289	4	35	3
38	248	4	17	1
36	325	5	29	3
34	307	5	17	1
32	370	15	20	
30	278	14	11	1
28	320	15	11	
26	270	9	10	1
24	317	5	8	
22	249	2	8	
20	288	3	8	
18	187	1	3	
16	234	3	5	
14	161		2	
12	163		2	
10	96		1	
8	86		1	
6	50		1	
4	35			
2	17			
0-1	22			
Total	5155	89	368	16
Q3	38.7	34.0	49.0	46.0
Md	30.6	30.9	41.7	40.7
Q1	21.7	27.8	34.1	36.7
Range	0-59	17.4-45.3	6-60	27.0-48.8
90 %ile	45.3	39.6	53.8	48.9
10 %ile	14.6	23.9	25.5	31.2



- - - Median, combined spring programs, 1961 through 1963

- - - Median, combined spring programs, 1956 through 1963

TABLE XVII, SPRING, 1964

ACHIEVEMENT TEST, LEVEL I, FORM A
REQUIRED

SCORE	FIRST YEAR		SECOND YEAR		THIRD YEAR	
	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES
114-120						
111			2			
108			4			
105	3		4		1	
102	6		7		3	
99	4		14		4	
96	16		19		1	
93	25		15		3	
90	21		27		2	
87	37		36	2	3	
84	39		39			1
81	61		27		9	2
78	87		44	3	6	1
75	73		54	2	6	1
72	121	3	44	4	1	
69	117		50	1		
66	160	5	64	3	1	
63	144	4	59	2	1	1
60	143	6	58	1	1	
57	162	9	48	5		1
54	162	5	50	5	1	
51	169	5	42	1	3	
48	163	4	39	1	1	
45	159	4	32	1		
42	142	6	30	1	2	
39	146	5	31		1	
36	112	1	25		1	
33	123	1	18		1	
30	103	1	11			
27	85	2	7			
24	80		9			
21	46		6		1	
18	41		5			
15	41		4			
12	25		1			
9	19		2			
6	12		1			
3	7		2			
0-2	6					
Total	2860	61	930	32	53	7
Q3	67.0	61.4	78.4	74.3	91.1	
Md	53.1	54.9	65.2	64.5	80.8	79.5
Q1	39.3	44.6	51.7	56.4	66.8	
Range	0-107	27.8-74.7	3-111	42.0-88.5	21-105	58.5-85.5
90 %ile	78.4	67.1	89.9	79.8	101.1	
10 %ile	27.3	39.7	39.2	51.6	44.0	

- - - Median, combined spring programs, 1959 through 1963

- - - Medians, combined spring programs, 1956 through 1963

TABLE XVIII, SPRING, 1964

ACHIEVEMENT TEST, LEVEL I
FIRST YEAR STUDENTS, VOLUNTARY

SCORE	FORM A–S SCORES OF INDIVIDUALS	FORM A–S MEDIANS OF COLLEGES	SCORE	FORM A SCORES OF INDIVIDUALS	FORM A MEDIANS OF COLLEGES
			99-120		
			96		
			93	1	
60			90	1	
58			87	1	
56			84	1	
54	1		81	1	
52	4		78	4	
50	6		75	6	
48	9		72	6	
46	6		69	5	
44	6		66	6	
42	7		63	9	1
40	9	1	60	9	2
38	19	1	57	16	3
36	13	1	54	10	
34	16		51	22	
32	17		48	14	1
30	12	2	45	11	
28	13		42	6	1
26	10	2	39	11	
24	18	1	36	15	1
22	5		33	12	
20	13		30	7	
18	7		27	2	
16	11	1	24	7	
14	3		21	8	
12	8		18	4	
10	3		15	2	
8	3		12	3	
6	2		9	1	
4	2		6	2	
2			3		
0-1	1		0-2	1	
Total	224	9	Total	204	9
Q3	39.2		Q3	59.8	
Md	32.1	30.5	Md	50.1	58.5
Q1	23.2		Q1	36.4	
Range	1-55	17.7-40.0	Range	0-94	38.1-63.0
90 %ile	47.2		90 %ile	72.3	
10 %ile	16.1		10 %ile	23.8	

- - - Median, combined spring programs, 1961 through 1963

- - - Median, combined spring programs, 1960 through 1963

TABLE XIX, SPRING, 1964

ACHIEVEMENT TEST, LEVEL II
FORM F

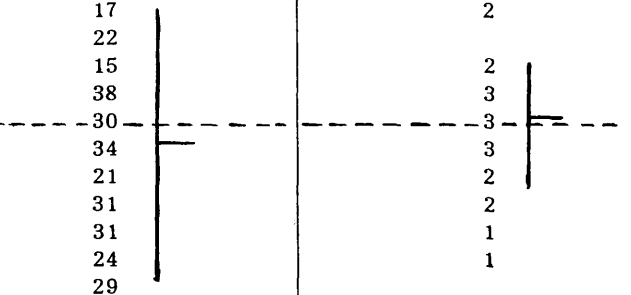
SCORE	SENIOR CLASSES				COMBINED SECOND-YEAR AND THIRD-YEAR CLASSES	
	REQUIRED		VOLUNTARY		REQUIRED	
	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES
78-90						
76						
74	3				1	
72	3					
70	1				2	
68	5				1	
66	16					
64	17				2	
62	23		1		7	
60	24				1	
58	34		1		5	
56	27				10	
54	59	2			9	
52	52	2			11	
50	76	1	4		9	
48	62	3	1		18	
46	78	3	5	1	27	1
44	69	4	4		28	
42	95	4	5		37	
40	108	8	2		35	4
38	108	6	3		63	4
36	110	5	8		36	6
34	128	7	4	1	56	8
32	113	10	2		41	4
30	129	10	5	2	46	4
28	94	2	5	1	38	3
26	86	5	6	1	40	4
24	75	2	8		37	1
22	77		5	1	46	1
20	51	1	5		18	1
18	55		7		31	2
16	28		1		16	1
14	32		7		20	
12	11		2		14	
10	8		1		9	
8	7				5	
6	4		1		8	
4	1		1		1	
2					2	
0-1	1				1	
Total	1870	75	94	7	731	44
Q3	46.3	42.1	39.7		41.2	37.3
Md	36.6	36.2	29.2	30.5	33.6	34.3
Q1	28.7	31.8	21.4		24.6	28.7
Range	1-75	21.0-55.5	5-62	22.0-47.0	0-75	17.5-47.0
90 %ile	54.8	48.3	47.0		48.3	40.3
10 %ile	21.6	27.8	15.3		17.6	22.8

- - - Medians, combined spring programs, 1962 and 1963

TABLE XX, SPRING, 1964

ACHIEVEMENT TEST, LEVEL II, FORM B
SENIOR STUDENTS

SCORE	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES
138-150		
135		
132		
129	1	
126		
123	1	
120	3	
117	3	
114	5	
111	8	
108	10	
105	15	
102	26	
99	21	
96	25	2
93	17	2
90	22	
87	15	2
84	38	3
81	30	3
78	34	3
75	21	2
72	31	2
69	31	1
66	24	1
63	29	
60	14	1
57	18	1
54	17	
51	16	
48	19	
45	12	
42	9	
39	5	
36	1	
33	1	
30	2	
27	5	
24		
21		
18	1	
0-17		
Total	530	23
Q3	93.4	87.4
Md	78.8	81.5
Q1	64.3	74.6
Range	18-129	57.0-97.5
90 %ile	104.2	95.6
10 %ile	50.7	66.9



- - - Median, combined spring programs, 1958 through 1963

TABLE XXI, SPRING, 1964

ORIENTATION TEST, FORM A, REVISED
FIRST YEAR STUDENTS

VERBAL			QUANTITATIVE			TOTAL		
SCORE	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES	SCORE	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES	SCORE	SCORES OF INDIVIDUALS	MEDIANS OF COLLEGES
90			60			150		
87			58			145		
84			56			140		
81			54	3		135		
78	1		52	7		130		
75	4		50	8		125	1	
72	4		48	16		120	3	
69	13		46	12		115	6	
66	14		44	28		110	6	
63	31		42	22		105	12	
60	25		40	40		100	28	
57	35		38	59		95	47	
54	47		36	40		90	47	
51	57	1	34	64	3	85	61	
48	84	1	32	84		80	78	1
45	72	2	30	81	2	75	87	5
42	99	3	28	100	6	70	126	1
39	106	4	26	113	1	65	118	4
36	125	4	24	114	6	60	136	4
33	124	4	22	120	3	55	136	4
30	115	3	20	88	2	50	135	3
27	107		18	68		45	95	1
24	90	1	16	66		40	69	
21	72		14	55		35	63	
18	47		12	52		30	29	
15	29		10	42		25	26	
12	21		8	18		20	18	
9	11		6	14		15	11	
6	2		4	8		10	2	
3	5		2	7		5		
0-2			0-1	11		0-4		
Total	1340	23	Total	1340	23	Total	1340	23
Q3	47.2	43.3	Q3	33.1	29.8	Q3	77.4	75.3
Md	37.1	38.6	Md	26.1	27.0	Md	63.2	64.4
Q1	28.6	34.3	Q1	19.8	24.3	Q1	50.8	57.2
Range	3-78	25.5-52.5	Range	0-55	20.0-35.3	Range	11-128	47.5-80.0
90 %ile	56.6	47.6	90 %ile	40.1	34.5	90 %ile	91.7	78.7
10 %ile	21.8	31.3	10 %ile	13.3	22.2	10 %ile	38.8	52.2

- - - Medians, combined spring programs, 1961 through 1963

PREDICTING SUCCESS IN THE STUDY OF ELEMENTARY ACCOUNTING FROM SCORES ON THE ACCOUNTING ORIENTATION TEST - HIGH SCHOOL LEVEL

By

Robert D. North[1]

The Accounting Orientation Test - High School Level is published and distributed by the American Institute of Certified Public Accountants as an aid for evaluating high school students' aptitude for accounting. The test is basically similar to the higher level of the Orientation Test that has been used with considerable success in the Institute's College and Professional Accounting Testing Programs since 1947.

Until now, evidence of the validity of the high school level of the Orientation Test has been derived mainly from its correlations with the higher level of the test or from course grades for small groups of students.[2] More direct evidence has been difficult to obtain because only a small percentage of the students who take the test in high school go on to take accounting courses in college, and the variety of colleges they attend makes the collection of criterion data impractical.

To facilitate the collection of uniform validation data for a sizable group of students, a special research project was conducted during the past year. In this project, the high school level of the Orientation Test was administered in the fall to college students who were just beginning the study of elementary accounting. Arrangements were made with the colleges to have the AICPA Level I Achievement Test administered to the same students in the spring to allow these scores and the course grades to be used as criteria in this study of the validity of the high school level of the Orientation Test.

While an ideal validity study of the test would be based on the relation between scores obtained while the students were still in high school and the long-range validity criterion of success in the accounting profession, the time and expense that would be involved made that type of approach prohibitive. The short-range project that was conducted proved to be practical, and it yielded data that have a bearing on an appraisal of the usefulness of the test for high school counseling purposes.

Description of the Test

The Accounting Orientation Test - High School Level is subtitled "A Prognostic Test of Skills and Abilities Related to the Study of Accounting and Business Subjects in College." For brevity, it is commonly called the High School Orientation Test, with the acronym of *HSOT*. It is similar to academic aptitude tests that have verbal and arithmetic parts, but it is couched in the language of business. No formal training in bookkeeping or accounting is required for answering any of the items, however.

The test is published in two equivalent forms - S and T, both copyrighted in 1953. Each form contains sixty-nine multiple-choice items, with two to five choices per item, requiring a total working time of forty minutes. There are three separately timed parts: Vocabulary - thirty items, seven minutes; Arithmetic Reasoning - fifteen items, thirteen minutes; and Accounting Problems - twenty-four items, twenty minutes. Scores and percentiles are reported for each of the three parts and for the total test.

Students may enter their answer choices either in the test booklets or on separate machine-scorable IBM answer sheets. Scoring and reporting services for the tests are offered by the Testing Project Office, but local scoring is also permitted. Unlike the AICPA College and Professional Program tests, which are restricted in distribution and remain the property of the Institute, the HSOT is sold outright.

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[1]The author gratefully acknowledges the cooperation of Thomas Mahorney and William Bock in the preparation of the statistical analysis for this article.

[2]A list of research references is given at the end of this article.

The principal norms are based on the scores of 2,939 high school seniors in twenty-nine schools for Form S, and of 1,075 seniors in eight schools for Form T. Form S percentiles for high school juniors (1,000 cases) and for high school sophomores (631) are also available. Kansas high schools, which participate in an annual state-wide testing program sponsored by the Kansas Society of CPA's, contributed substantially to the norms.

The 1963-1964 Validation Study

In the summer of 1963, the Institute's Office of Education invited a representative group of college program participants to cooperate in the HSOT validation study. Fourteen colleges and universities accepted the invitation and administered Form S of the test in the fall to a total group of 1,304 first-year accounting students.[3] The results of this testing were reported to the colleges in terms of percentiles based on the distribution of scores for this group of participants. In April, these colleges administered the Level I Achievement Test, Form A-S, to the same students. At the end of the academic year, the colleges reported the students' final grades in elementary accounting to the Testing Project Office.

Results

The average scores and grades, standard deviations, and correlations for the group of 1,304 college students are reported in Table 1. To relate this group to the HSOT and Level I Achievement Test norm groups, the percentiles corresponding to its average scores on the principal norms for these tests are also shown.

The sample group of colleges proved to be well chosen, since the average score on the Level I Achievement Test of the 1,304 students was equivalent to the 50th percentile on the college program norms for students tested in the spring of their first year of accounting study. On the HSOT norms for high school seniors, the group ranked at the 86th percentile in average score.

As would be expected, the HSOT scores show a higher correlation with the more objective criterion of the Level I Achievement Test scores than with course grades. The correlations are .49 for the HSOT scores with Level I scores, and .41 for the HSOT scores with course grades. A correlation of .55 was obtained for the Level I scores and course grades. For individual colleges, the correlations with course grades ranged from .29 to .69, with a median of .37, for the HSOT scores, and from .31 to .78, with a median of .57, for the Level I scores. These broad ranges no doubt reflect the variations in the academic standards and grading practices within the group of colleges.

TABLE I

AVERAGE SCORES AND GRADES, STANDARD DEVIATIONS, AND CORRELATIONS FOR THE GROUP OF 1,304 FIRST-YEAR ACCOUNTING STUDENTS IN FOURTEEN COLLEGES

	AVERAGE	STANDARD DEVIATION	CORRELATION
High School Orientation Test, Form S (Percentile on h.s. senior norms)	45.6 (86)	11.0	With grades: .41
Level I Achievement Test, Form A-S (Percentile on 1st-yr. college norms)	30.4 (50)	11.7	With HSOT: .49
Final grade in elementary accounting course*	7.0 (C+)	3.1	With Level I Ach. Test: .55

*For computational purposes, a grade of A was coded as 12, A- as 11, B+ as 10, *etc.*, down to F as 1.

[3]The cooperation of the following institutions is gratefully acknowledged: University of Akron, Bradley University, University of Chattanooga, Gannon College, Flint Community Junior College, College of the Holy Cross, Indiana Central College, University of Mississippi, Orange County Community College, Rochester Institute of Technology, San Diego City College, City College of San Francisco, Wisconsin State College, University of Wyoming.

The correlations of the HSOT scores with the criteria are substantial, and they give evidence of significant relationships. The utility of the scores for counseling and prediction purposes in high schools can probably be gauged better from expectancy tables than from the correlation coefficients, however. Table 2 is an expectancy table for one college that participated in this project. This college was selected because its correlations are fairly typical of the total group. The average HSOT score of the 114 students tested at this college was equivalent to the 85th percentile on the twelfth-grade norms, and their average score on the Level I Achievement Test corresponded to the 38th percentile on the first-year college norms. The correlations for this group were as follows: HSOT scores with course grades - .46; HSOT scores with Level I scores - .47; Level I scores with course grades - .56.

TABLE 2

CHANCES IN 100 OF A STUDENT'S FALLING IN A GIVEN COURSE GRADE CLASSIFICATION IN ELEMENTARY ACCOUNTING AT ONE COLLEGE, BASED ON HIS HSOT PERCENTILE CLASSIFICATION

HSOT %ILE RANGE	ACCOUNTING COURSE GRADE		
	D-F	C	A-B
95-100	16	28	56
65-94	21	57	22
Below 65	42	50	8

As will be seen from Table 2, a student at this college has better than an even chance of earning a grade of A or B in the elementary accounting course if he ranks in the top five per cent of the HSOT norms. The odds are in favor of his being a "C" student in elementary accounting if he ranks between the 65th and 94th percentiles on the HSOT norms. If he ranks below the 65th percentile on the HSOT norms, the odds are more than ten to one against his earning a grade of A or B, and about four in ten that his grade will be a D or F.

Table 3 is an expectancy table based on the relationship between the HSOT and Level I Achievement Test percentiles for the total group of 1,304 students. Here it may be seen that a student has 52 chances in 100 of ranking in the top quarter of the Level I norms in the spring of his first year of accounting study if he ranks in the percentile range of 94 to 100 on the high school senior norms of the HSOT. The student who ranks in the percentile range of 86-93 on the HSOT norms has the odds a little in his favor for ranking in the upper half of the Level I norms, while the student who ranks between the 70th and 85th percentile on the HSOT is more likely to fall in the lower half of the Level I norms. For the student who ranks below the 70th percentile on the HSOT norms, however, the chances are nearly 50-50 that he will rank in the lowest quarter of the Level I norms, and about three-to-one against his ranking in the top half of the Level I norms.

TABLE 3

CHANCES IN 100 OF A STUDENT'S FALLING IN A GIVEN QUARTER OF THE LEVEL I, FORM A-S, ACHIEVEMENT TEST NORMS, BASED ON HIS HSOT PERCENTILE CLASSIFICATION

HSOT %ILE RANGE	LEVEL I ACHIEVEMENT TEST PERCENTILE RANGE			
	0-24	25-49	50-74	75-100
94-100	7	16	25	52
86-93	19	25	28	28
70-85	26	29	25	20
1-69	47	27	19	7

Taking into consideration the data in both Tables 2 and 3, the inference may be drawn that a student who ranks in about the top five or six per cent of the HSOT norms is likely to attain better-than-average success in an elementary accounting course. An individual who

ranks in the lower two-thirds of the HSOT norms apparently is a rather poor risk as an elementary accounting student and probably should not be encouraged to consider preparing for a career in accounting unless other evidence is strongly in his favor. It would be unwise, of course, to base any important decisions upon the results of a single test, and the HSOT rating should be viewed in the context of other information about the student. Allowance should also be made for variations from one college to another in curricula, grading standards, and instructional proficiencies. Such factors are likely to have substantial effect upon a student's chances of success in the study of accounting.

The preceding analysis has dealt entirely with the HSOT as a whole, rather than with its part scores. For the college represented by the data in Table 2, correlations of the part scores with the elementary accounting course grades and Level I scores were also obtained. These correlations are shown in Table 4. It is interesting to find that the Arithmetic Reasoning scores have as high a correlation with the course grades at this college as the total scores do (.46). The Accounting Problems scores yield a correlation of .52 with the Level I scores, which is slightly higher than the correlation between the total scores of the two tests (.47). For both the course grades and the Level I scores, the Vocabulary scores yield correlations that are lower than those of the other two parts.

TABLE 4

CORRELATIONS OF HSOT PART AND TOTAL SCORES WITH COURSE GRADES AND LEVEL I, FORM A-S, ACHIEVEMENT TEST SCORES AT ONE COLLEGE (N = 114)

HSOT	CORRELATIONS	
	COURSE GRADES	LEVEL I SCORES
Vocabulary	.25	.30
Arithmetic Reasoning	.46	.40
Accounting Problems	.44	.52
Total Test	.46	.47

Evidently arithmetic skills are more important than vocabulary for success in the first year of college accounting study. Therefore, when a student ranks quite differently on the component parts of the HSOT, greater emphasis should be placed on his ratings on the Arithmetic Reasoning and Accounting Problems parts than on his Vocabulary rating. When a student has rather similar ratings on the three parts, however, his percentile rating on the test as a whole can be expected to provide a more reliable basis for prediction than any of his part score ratings, which are derived from relatively small groups of items.

First-Year College Norms for the HSOT

As an aid for high school counselors, HSOT percentile norms for first-year college accounting students have been compiled from the data gathered in this project. Copies of the norm tables are available from the AICPA Testing Project Office. The relation between the high school and college norms at selected points in the score range is shown in Table 5.

TABLE 5

CORRESPONDING PERCENTILES ON HIGH SCHOOL AND COLLEGE NORMS FOR HSOT, FORM S, PART AND TOTAL SCORES

PERCENTILE ON NORMS FOR HIGH SCHOOL SENIORS	PERCENTILE ON NORMS FOR 1ST-YEAR COLLEGE STUDENTS			
	VOCAB-ULARY	ARITH. REASON.	ACCOUNT. PROBLEMS	TOTAL
100	100	100	100	98-100
90	63	73	64	61
75	34	41	41	30
50	13	15	16	10
25	3	3	5	2
10	1	1	2	1
1	1	1	1	1

Summary

Evidence of the validity of the Accounting Orientation Test - High School Level (HSOT) was obtained by determining the relation of scores on this test to grades in elementary accounting courses and scores on the Level I Achievement Test for 1,304 students in fourteen colleges. The students took the HSOT, Form S, in the fall and the Level I, Form A-S, test in the spring of their first year of accounting study. The colleges reported the students' elementary accounting course grades to the AICPA Testing Project Office for use in this study.

The HSOT scores proved to have substantial correlations, in general, with the criteria of course grades and Level I Achievement Test scores. Expectancy tables compiled from the data show that individuals who rank in the top five or six per cent of the HSOT norms are likely to rank above average as elementary accounting students. On the other hand, those who rank below the top third of the HSOT norms seem to be poor risks as accounting students.

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