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A STUDY OF THE ACADEMIC ABILITY AND PERFORMANCE OF JUNIOR COLLEGE STUDENTS.

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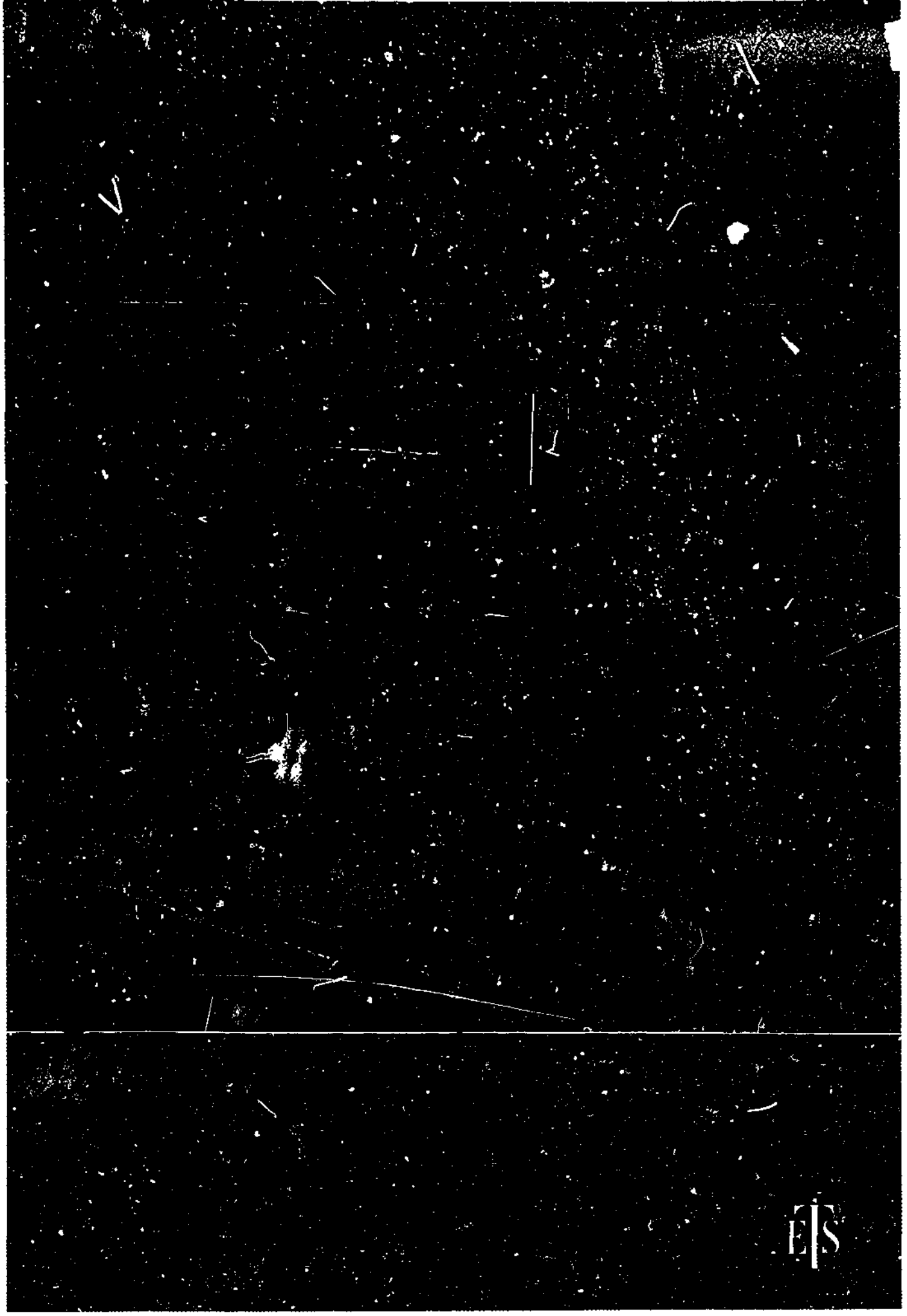
DESCRIPTORS- *JUNIOR COLLEGES, HIGHER EDUCATION, *HIGH SCHOOL GRADUATES, *NONCOLLEGE PREPARATORY STUDENTS, *COLLEGE BOUND STUDENTS, *PREDICTIVE ABILITY (TESTING), *PREDICTIVE MEASUREMENT, ACADEMIC APTITUDE, APTITUDE TESTS, PRELIMINARY SCHOLASTIC APTITUDE TEST,

IN FALL 1960, THE PRELIMINARY SCHOLASTIC APTITUDE TEST (PSAT) WAS ADMINISTERED TO A NATIONAL SAMPLE OF 9,745 SENIORS IN 147 HIGH SCHOOLS, AND A SUBSAMPLE OF 2,423 WERE SELECTED FOR FOLLOW-UP. STATISTICAL TREATMENT OF DATA FOR THE SUBSAMPLE INDICATED THAT, OF THE ORIGINAL GROUP, (1) 36 PERCENT WENT TO COLLEGE, WITH ABOUT 19 PERCENT OF THESE ENTERING JUNIOR COLLEGE, (2) ABOUT 75 PERCENT OF THE COLLEGE ENTRANTS COMPLETED THE YEAR IN GOOD STANDING, WITH THE INCIDENCE OF ACADEMIC DIFFICULTY AMONG THE 2-YEAR STUDENTS NEARLY TWICE AS GREAT AS AMONG THE 4-YEAR STUDENTS, AND (3) AT BOTH TYPES OF COLLEGES, BOYS SEEMED TO HAVE MORE DIFFICULTY THAN GIRLS. WITH REGARD TO TEST SCORES, (1) THOUGH THE GROUP ATTENDING COLLEGE TENDS TO HAVE HIGHER SCORES, THEY ARE REPRESENTED THROUGHOUT THE ENTIRE SCORE RANGE, WITH SUBSTANTIAL NUMBERS OF LOW SCORES, (2) THE NON-COLLEGE BOUND TENDED TO CLUSTER AT THE LOW END, WITH LIMITED REPRESENTATION TOWARD THE TOP, (3) DEGREE OF COLLEGE SUCCESS APPEARED RELATED TO SCORES, AND (4) THERE WAS MUCH OVERLAPPING OF SCORES AMONG THOSE WHO WERE SUCCESSFUL AND THOSE WHO WERE NOT, AS WELL AS AMONG THOSE ATTENDING DIFFERENT TYPES OF INSTITUTIONS. (WO)



A Study of the Academic Ability and Performance of Junior College Students

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Evaluation and Advisory Service
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A STUDY OF THE ACADEMIC ABILITY AND PERFORMANCE OF JUNIOR COLLEGE STUDENTS*

Background

Over the past twenty-five years numerous studies have been conducted and reported which attempt to describe our educational system during the important transitional period from high school to college. The interest in this educational period is understandable, since it is here that crucial decisions must be made by students, parents, schools, and colleges. These decisions largely affect the educational status of both the individual and the nation. Not only is interest evidenced in the college-going activities of high school seniors, but also information is sought concerning the nature of the students who make up the college population. More specifically, what kinds of students are entering what kinds of colleges.

Many of the studies of this transitional period have been concerned with only limited populations: e.g., students in certain localities, states, or other limited geographic areas; students enrolled in individual school systems; students enrolled in individual colleges or selected small groups of colleges; or groups of students with selected characteristics such as high ability, underprivileged, scholarship recipients, religious or racial minority groups, etc. It is difficult to obtain a picture of the national situation by generalizing from limited studies of this nature.

At least four major efforts have been undertaken in the last ten years, in the hope of throwing some light on the national situation regarding this particular phase of our educational system.

In 1954 Dael Wolfle, working under the auspices of the Commission on Human Resources and Advanced Training, performed a monumental task of gathering and synthesizing relevant information from numerous sources. Although much of this information was based upon limited populations, estimates were made of

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*The collection of the basic data for this study was supported by the College Entrance Examination Board.

characteristics of national populations of high school and college students. The figures contained in Wolfle's report, America's Resources of Specialized Talent (1), however, are not based on a rigorous study of single representative samples of these populations. In addition, much of the data he obtained are now somewhat outdated in that they were based on studies done in the 1940's. Since comprehensive test information was not available, Wolfle had to rely on estimates of performance on the Army General Classification Test in order to describe the academic ability of these populations.

In 1956, under the auspices of the National Science Foundation and the College Entrance Examination Board, and with the assistance of Educational Testing Service, Charles C. Cole conducted a survey of a national sample of students who were seniors in public high schools in 1954-55. In Encouraging Scientific Talent (2), he reported the characteristics and the educational plans of this sample. A subsequent and more detailed report of this study was made by Educational Testing Service in 1957 (3).

There are a number of limitations inherent in this study. It is based only on public high school seniors. Although an academic ability test was administered to the entire sample to obtain comparable information on all seniors, it was a short, especially-prepared test and not widely used outside the study. As reported in (3), a limited follow-up of a part of the group was conducted in the fall of 1955. Information on the college-going activities of the seniors in a sub-sample of schools was obtained from the schools. Apparently, however, no attempt was made to verify this information through contact either with students or colleges.

The most recently reported national study of this nature was described by McConnell and Heist in 1962. Under the auspices of the Center for the Study of Higher Education at the University of California (Berkeley), data were obtained for the 1952 entrants at a sample of about 200 colleges and universities. The characteristics of the students in this sample are reported in "The Diverse College Student Population," a chapter in The American College (4). Although

considerable effort was made to assure that the sample of institutions was indeed representative of the population of colleges and universities, the results are limited by t'e fact that all of the institutions in the sample could not provide the same academic ability information on their freshmen classes. Different tests were in use at different institutions and, in some instances, no test information was available. The academic ability characteristics of the sample had to be estimated through the conversion of scores on different tests (when available) to a common scale (scores on the 1952 edition of the American Council on Education Psychological Examination). Even then, for some colleges, test results from previous year's classes had to be used. The data (college freshman classes of 1952) are somewhat outdated. In addition, the test that provided the common scale (ACE Psychological Examination) is now out of print.

Junior colleges are, of course, an important part of this transitional period. Yet none of the studies mentioned above has reported any data focusing on the characteristics of students enrolled in two-year institutions. Students who attend junior colleges have been included in the samples, but no attempt has been made to analyze the data separately in order to provide information about them. In fact, aside from information about the academic ability of students at individual two-year colleges, which many colleges assemble for their own purposes, very little definitive information is available concerning this characteristic of junior college students.

A notable effort to describe the academic ability of junior college students was made by Leland Medsker in The Junior College: Progress and Prospect (5). He gathered data from several sources in order to present as comprehensive a picture of junior college students as possible. His major sources of academic ability information were the publishers' junior college freshmen norms for two standardized tests (The American Council on Education Psychological Examination and the College Qualification Tests), data for two-year colleges gathered by the Center for the Study of Higher Education (from the same study reported by McConnell and Heist and discussed above), and a special study of the ACE Psycho-

logical Examination scores of students who entered a sample of junior colleges in California.

The data which Medsker assembled, of course, have many of the same limitations as the data in the other studies mentioned above; i.e., the lack of common information necessitating conversion of scores on different tests to a common scale (the ACE scale), limited population (California junior colleges), and dated information (freshman classes of 1952).

Even the data from the test publishers' norms are far from ideal for generalizing to the national population of junior college students. It is quite difficult for a test publisher to obtain a truly representative national sample of students for purposes of norming a test. While many colleges will cooperate in this respect with a test publisher, some will not, and the sample is thereby unavoidably biased. Publishers often do not make intensive efforts to obtain truly representative samples for norming purposes. They rely instead upon the colleges' willingness to administer the tests, or upon the fact that a group of colleges happens to be using the test in their own programs.

The CQT norms (6), reported by Medsker, are based on all students entering a full-time program in the fall of 1957, at twenty junior colleges and, although the names of the twenty colleges are provided, no information is given as to the methods used to obtain the sample or its representativeness. The ACE Psychological Examination norms (8), although based on a larger sample of two-year colleges (forty-six), suffer the same limitations. In addition, the ACE norms are based on rather dated information (entering freshmen in 1952) and, as was indicated above, the test is now out of print. In view of the rapid growth and development of junior colleges during the past ten years, recency of data becomes an increasingly important limitation. For example, although Mt. San Antonio College had almost 2,400 full time freshmen in the fall of 1963 (7), only 364 are included in the ACE junior college norms (8).

In the present study, we have attempted to avoid the limitations inherent in the studies mentioned above. This has been done by selecting a representative

sample of both public and private schools, administering a commonly used scholastic aptitude test to the seniors in the sample schools, actually following a sub-sample of the group through the first year of college, and, then, examining the data for students who entered two-year colleges separately from the data for students who entered four-year colleges. It is hoped, through this study, to shed more light on the national picture of this transitional period in education and to describe further the academic characteristics of students who enter two-year colleges.

In the fall of 1960, the College Entrance Examination Board's Preliminary Scholastic Aptitude Test (PSAT) was administered to a national sample of 9,745 high school seniors in 147 schools. A sub-sample of 2,423 of the seniors was selected for follow-up.

Phase 1 of the follow-up was completed in 1962 and reported in (9) and (10). In Phase 1, information was obtained from the high schools concerning the high school performance and college-going activities of the sub-sample. Based on this information, the reports present data for seniors who do not attend college, seniors who attend college, and seniors who attend various types of institutions of higher education (e.g., two-year colleges).

Phase 2 of the follow-up is reported in (11) and in the present document. In Phase 2, information was obtained which enabled us to 1) include seniors who enrolled in college at anytime during the first year after graduation from high school, 2) verify the students' enrollments in colleges, and 3) ascertain the students' performances during the first year of college. As a result of the testing and follow-up, we are able to present PSAT data and high school rank-in-class data for the total group of high school seniors, for those who entered two-year colleges, and for those who entered four-year colleges. In addition, by further classifying the students we can present these data according to various types of performance during the first year of college.

Method

The sampling, data collection, and data adjustment discussed below are presented schematically in Figure 1. Both Phase 1 and Phase 2 are represented.

Sampling:

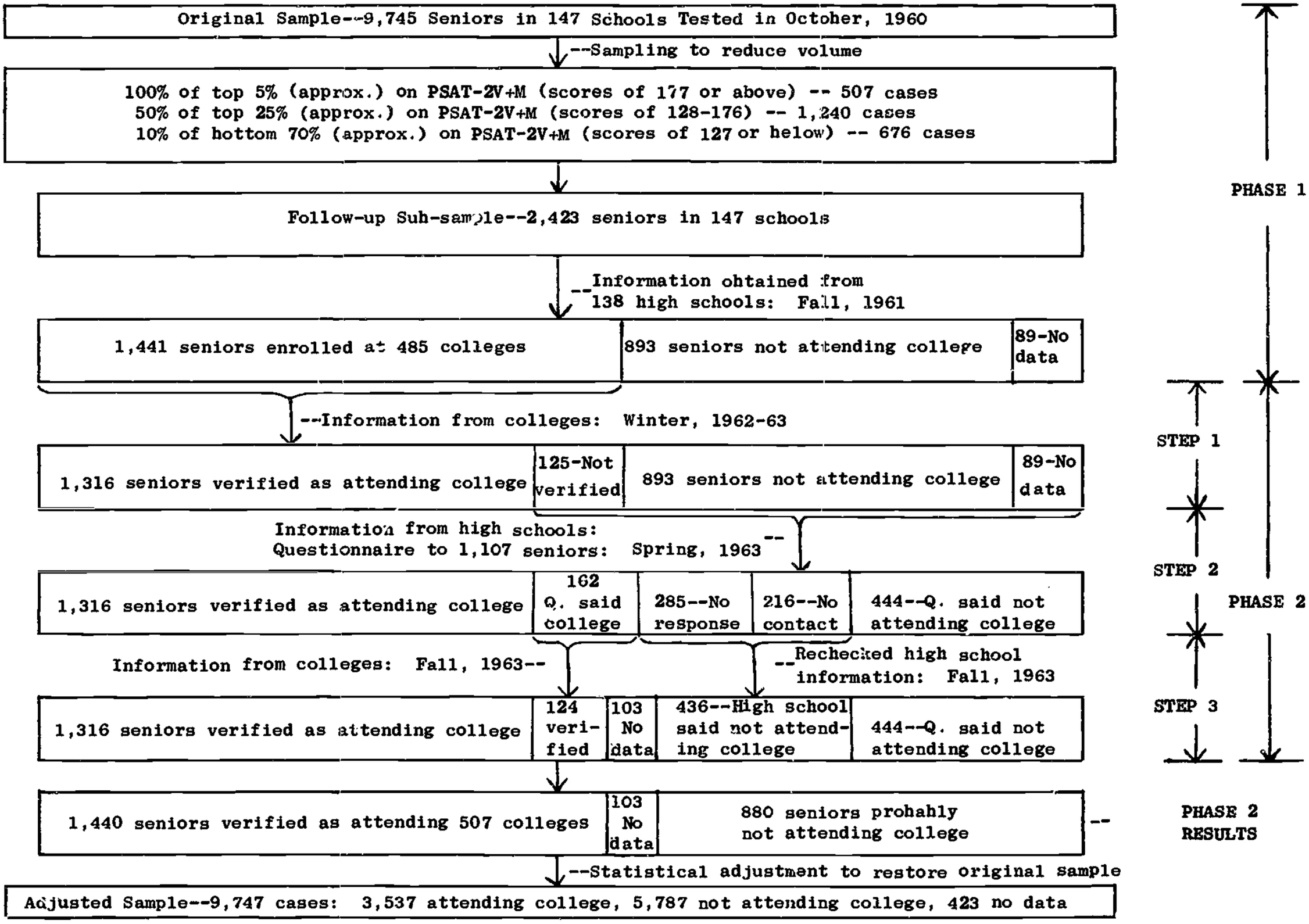
Since the methods used to obtain the sample of 9,745 seniors and the sub-sample of 2,423 seniors which was selected for follow-up are described in detail in (9), the following points are presented merely to summarize these methods:

1. The total sample of seniors was selected so that the schools they attended were representative of the population of schools in the United States with respect to two variables -- type of school (public - non-public) and geographical distribution (defined by nine census regions). Two hundred schools were originally selected, of which 147 tested their entire senior classes (defined as at least 80% of the seniors in a class) and provided useable data. The 9,745 seniors in these 147 schools constitute the basic sample for this study.
2. From the 9,745 seniors, a sub-sample of 2,423 seniors was selected for follow-up purposes. This selection was done differentially according to a 2V+M (twice the Verbal Score plus the Mathematical Score) composite score on the PSAT as follows: every student in approximately the top 5% of the 2V+M distribution (2V+M scores of 177 or above) was included in the follow-up sub-sample; 50% of the students in approximately the next 25% (2V+M scores in the range 128-176) were included; and 10% of the students in approximately the bottom 70% (2V+M scores of 127 and below) were included. It was felt that this differential sampling would permit the follow-up sub-sample to contain a higher proportion of students who went to college, and yet would keep the amount of necessary follow-up activities to a minimum.

Data Collection:

In Phase 1 of the follow-up, each of the 147 high schools was contacted by mail to obtain information on the 2,423 seniors concerning college-going

FIGURE 1 - Schematic Representation of Follow-Up Sampling, Data Collection, and Data Adjustment



activities (which seniors went to college and where) and high school performance (rank in graduating class and size of graduating class). This data collection is described in detail in (9).

Phase 2 of the follow-up involved more intensive data collection activities for the sub-sample of 2,423 seniors. The following steps were taken (see Figure 1):

Step 1. The information from the high schools, obtained in Phase 1, indicated that 1,441 seniors enrolled in 485 colleges. In the winter of 1962-63 each college was contacted to verify the enrollment of these students and to obtain information on student performance. Non-respondents received a second contact about two months later. As a result of this, enrollment was verified for 1,316 seniors.

Step 2. Of the original sub-sample of 2,423 cases, then, 1,107 remained for further follow-up (2,423 - 1,316). Each of the 147 high schools was contacted in the spring of 1963 to obtain the home addresses of the 1,107 seniors and to obtain some information about the school. Non-respondents were contacted a second time about one month later. The addresses obtained from the schools were used in an attempt to make individual contact with each of the 1,107 seniors.

Later in the spring of 1963 a letter and a questionnaire asking about college attendance were sent by first-class mail to each of the 1,107 students for whom an address was available. A second letter and a duplicate questionnaire were sent to non-respondents about three months later. As a result, there were 216 cases that could not be contacted, either because the high school could not supply an address, or because the questionnaire was returned by the post office as undeliverable. Two hundred eighty-five students presumably received the questionnaire and failed to respond. A total of 606 students returned the completed questionnaire, of which 444 indicated that they had not enrolled in college during 1961-62, and 162 indicated they had enrolled in college.

Step 3. In the fall of 1963 a letter and roster were sent to each college named by the 162 students who responded that they had enrolled in college. As a result, the colleges verified the enrollment of 124. Twenty-two colleges that had not been contacted previously were involved.

At the same time, by using the data provided by the high schools in Phase 1 of the follow-up, we were able to identify 436 of the 501 (285 no response plus 216 no contact) students for whom no questionnaire information was available, as students who probably had not gone to college during 1961-62. That is, the high school nad previously indicated that these students were not attending college. This left a total of 103 students for whom we had no information or had conflicting information.

In summary, then, of the 2,423 cases in the follow-up sub-sample, 1,440 cases were identified as having attended 507 different colleges during the first year after graduation, 880 were identified as having probably not attended college during that year, and 103 cases could not be classified into either of these categories because of lack of or conflicting information. The 507 colleges included 67 two-year institutions, 439 four-year institutions, and one institution that could not be classified as either two-year or four-year.

Data Adjustment:

Since the follow-up sub-sample was selected by differential sampling according to level of performance on the PSAT, it was necessary to make a statistical adjustment in order to restore the characteristics of the original sample. The procedure is described in detail in (9) and consists of weighting each case in the follow-up sub-sample according to the sampling procedure used to obtain the case, i.e., no weighting if it was in the high PSAT group (100% sampling) a weight of 2 if it was in the middle PSAT score group (50% sampling), and a weight of 10 if it was in the low PSAT score group (10% sampling).

The sub-sample, when adjusted, as above, to reflect the characteristics of the original sample, contained 9,747 cases of which 3,537 were classified as

"attending college," 5,787 were classified as "not attending college," and 423 were not classified because of lack of information (see Figure 1). The slight difference between the number of cases in the adjusted sample (9,747) and the number of cases in the original sample (9,745) is due to rounding procedures in the adjustment.

The data which are presented in the remainder of this report are based on the adjusted sample of 9,747 cases.

Descriptions of Variables: The three variables for which data are reported in this study are listed and described below. All of these variables were obtained during the students' senior year in high school.

1. PSAT-V: Verbal score from the Preliminary Scholastic Aptitude Test obtained in October 1960, shortly after the students in the sample began the senior year of high school. Scores on this variable, as well as scores on PSAT-M below, are available for all students in the study (12)

2. PSAT-M: Mathematical score from the Preliminary Scholastic Aptitude Test obtained as for Verbal above (12).

3. Rank-in-Class Index: A normalized scale score having a range of 0-26 with a mean of 13 and standard deviation of 4. The index is based on the end-of-senior-year "rank-in-class" and "size of graduating class" information which the high schools supplied. Since some of the high schools in the study did not supply this information, the numbers of cases having this variable are slightly less than for PSAT (13).

Results

In order to classify the 9,747 students in the adjusted sample into various groups on the basis of the follow-up information, it was necessary to define several terms as follows:

Definitions of Terms Used in Classifying Students.

1. College: Any institution that is listed in the Education Directory, 1961-62, Higher Education (14) is considered a college. Five hundred seven institutions were involved in the follow-up.
2. Attending College: A student is considered to be attending college if he enrolled in a college (as defined above) during 1961-62 and his attendance was verified by the college. The sample contained 3,537 such students.
3. Not Attending College: A student is considered to be not attending college if he indicated by questionnaire that he had not enrolled in a college during 1961-62, or (in the absence of a questionnaire) if his high school indicated that he had not enrolled in a college during 1961-62. The sample contained 5,787 such students.
4. Insufficient Data: A student is considered to have insufficient data if he could not be classified as either attending college or not attending college (as defined above). There were 423 such students in the sample.
5. Two-Year Institution: A college is considered to be a two-year institution if it is classified as a Type I college in the Education Directory, 1961-62, (i.e., institutions that offer two, but less than four, years of work beyond the twelfth grade.) The follow-up included 67 such institutions.
6. Four-Year Institution: A college is considered to be a four-year institution if it is classified by the Education Directory, 1961-62, as a Type II, III, or IV college (i.e., institutions that offer the bachelor's, master's, or doctoral degrees). The follow-up included 439 such institutions.
7. Good Standing: A student is considered to be in good standing at a college if the college so indicated or if it provided another indication of satisfactory performance. A total of 2,640 students were so classified.

8. Academic Probation: A student is considered to be on academic probation if the college so indicated, or if it provided another indication of unsatisfactory academic performance short of academic dismissal. The sample contained 465 such students.

9. Academic Dismissal: A student is considered to have suffered academic dismissal if the college indicated that the student was required to leave or not permitted to return for unsatisfactory academic performance. There were 276 such students in the sample.

10. Non-academic Withdrawal: A student is considered to have withdrawn from college for non-academic reasons if the college so indicated, or if it provided another indication that the student had left for reasons which were not identifiable as unsatisfactory academic performance. There were a total of 156 such students in the sample.

11. Complete the First Year of College: A student is considered to have completed the first year of college if, at the end of the freshman year, he was in good standing or was on academic probation (as defined above). There were a total of 3,105 such students in the sample.

12. Academic Difficulty: A student is considered to have encountered academic difficulty if he was on academic probation at the end of the first year, or if he had suffered academic dismissal during the first year (as defined above). There were 741 such students in the sample.

Numbers and Percents of Students

Tables 1-5 show the number and percent of students classified into various categories on the basis of the follow-up information. The data are presented separately for boys and girls as well as for the total group.

Table 1 shows, for the total sample of 9,747 cases, the number and percent attending college, not attending college, or for whom we had insufficient data. About 36% of the total group enrolled in college during the first year after graduation (1961-1962). The proportion of boys is somewhat higher than girls. About 59% of the total group did not enroll in college. Sufficient data to permit

Table 1

Number and Percent of Students
Attending and Not Attending College

	Attending College		Not Attending College		Insufficient Data		Total	
	N	%	N	%	N	%	N	%
Boys	1878	41.0	2499	54.5	208	4.5	4585	100
Girls	1659	32.1	3288	63.7	215	4.2	5162	100
Total	3537	36.3	5787	59.4	423	4.3	9747	100

Table 2

Number and Percent of Students Attending
Two-Year and Four-Year Institutions

	Attending Two-Year Colleges		Attending Four-Year Colleges		Total	
	N	%	N	%	N	%
Boys	358	19.1	1516	80.9	1874*	100
Girls	297	17.9	1362	82.1	1659	100
Total	655	18.5	2878	81.5	3533*	100

*Four students are not included since they attended an institution that was not classified as either a two-year or four-year college.

classification were not available for about 4% of the group.

Of the students who enrolled in colleges, 655 cases, or about 19%, went to two-year institutions. About 81% went to four-year institutions. As Table 2 shows, the proportion of boys attending two-year institutions is slightly higher than girls.

Table 3 presents a breakdown of the total group that attended college according to performance during the first year of college. About 75% completed the year in good standing, while 13% were on academic probation and 8% had been dismissed for unsatisfactory academic work. Hence, about 21% of the group that enrolled in college were in academic difficulty at the end of the year. Only about 4% had left college for other reasons. It is interesting to note that the boys seemed to have fared much worse than the girls during the first year of college. The proportion of boys in academic difficulty (28%) is over twice as great as the proportion of girls (13%).

Tables 4 and 5 show similar data on the college performance of the students who attended two-year institutions or four-year institutions. The proportion of students completing the year in good standing is smaller among junior college students than among four-year college students (61% and 78% respectively), and the proportion in academic difficulty, either on probation or dismissed, is nearly twice as great for the junior colleges (31%) as for the four-year colleges (18%). However, the proportion of junior college students who are dismissed for academic reasons, 10%, is only slightly greater than the 7% who are academically dismissed from the four-year colleges. The proportion on probation is nearly twice as great among junior college students (21%) as it is among four-year college students (11%). This would seem to indicate that while the junior college must take punitive academic measures against a higher proportion of students, it tends to be less severe in these measures than the four-year college.

In general, boys seem to fare much worse than girls during the first year at both the two-year colleges and the four-year colleges. The chances of a boy

Table 3

Number and Percent of Students in Four Categories of First-Year College Performance

	Good Standing		Academic Probation		Academic Dismissal		Non-Academic Withdrawal		Total	
	N	%	N	%	N	%	N	%	N	%
Boys	1263	67.2	336	17.9	189	10.1	90	4.8	1878	100
Girls	1377	83.0	129	7.8	87	5.2	66	4.0	1659	100
Total	2640	74.6	465	13.2	276	7.8	156	4.4	3537	100

Table 4

Number and Percent of Students Enrolled in Two-Year Institutions in Four Categories of First-Year College Performance

	Good Standing		Academic Probation		Academic Dismissal		Non-Academic Withdrawal		Total	
	N	%	N	%	N	%	N	%	N	%
Boys	185	51.7	101	28.2	52	14.5	20	5.6	358	100
Girls	218	73.4	36	12.1	16	5.4	27	9.1	297	100
Total	403	61.5	137	20.9	68	10.4	47	7.2	655	100

Table 5

Number and Percent of Students Enrolled in Four-Year Institutions in Four Categories of First-Year College Performance

	Good Standing		Academic Probation		Academic Dismissal		Non-Academic Withdrawal		Total	
	N	%	N	%	N	%	N	%	N	%
Boys	1076	71.0	235	15.5	135	8.9	70	4.6	1516	100
Girls	1159	85.1	93	6.8	71	5.2	39	2.9	1362	100
Total	2235	77.7	328	11.4	206	7.1	109	3.8	2878	100

being in academic difficulty are over twice as great as for a girl at both kinds of institutions.

Distributions of Scores

The remainder of the tables in this report (Tables 6-20) show distributions of scores for various groups of students as established by means of the follow-up data. Each table presents the percents of students scoring below selected scores on a single variable (PSAT-V, PSAT-M, or the Rank-in-Class Index) for several groups. The data are presented in this way to aid in making comparisons between groups. All distributions are presented separately for boys, girls, and the total group of boys and girls combined. The numbers of cases, means, and standard deviations of the variables for each group of students are shown at the bottom of the table. For precise descriptions of the groups included in these tables, the reader is referred to the "Definitions of Terms Used in Classifying Students" given above on pp.17-18.

Tables 6, 7, and 8 each show distributions of scores for three groups of students -- the total group, the group that attends college and the group that does not attend college. Table 6 compares these groups on the PSAT-Verbal, Table 7 on PSAT-Mathematical, and Table 8 on the Rank-in-Class Index. As would be expected, the students who attend college tend to score higher on these variables than the students who do not attend college. Most colleges use this type of information as part of the admissions procedures. While the students who do not attend college tend to cluster at the low ends of the score scales and tend to have limited representation at the high ends, the group that attends college is represented over nearly the full range of the variables with substantial proportions of lower ability students attending college. This is further evidenced by the larger standard deviations for the Attend College group than for the Do Not Attend College group. The overlap of the distributions should also be noted. Many students who do not attend college are of higher ability than many who do.

Tables 9, 10, and 11 show for the three variables, respectively, the distributions of scores for students who enroll in two-year institutions and

for students who enroll in four-year institutions. Again, as would be expected, the students who attend four-year institutions tend to be of higher ability than those who attend two-year institutions. Four-year colleges and universities as a group are more selective in their admission policies than most junior colleges. Many junior colleges have open-door admission and will admit any students "who can benefit from the instruction" regardless of ability. Nevertheless, it is obvious that many high-ability students are attending junior colleges and, as the tables show, there is considerable overlap in the distributions of scores for students attending the two types of institutions. For example, 15% of the group attending two-year institutions have PSAT-Verbal scores of 50 or above, and this 15% scored higher than 61% of the students attending four-year institutions.

The remainder of the Tables (12-21) show data for students according to their performance during the first year of college. Tables 13, 14, and 15 are based upon those students who completed the first year of college. These students were either on academic probation or had completed the year in good standing. Tables 16, 17, and 18 are based upon only those students who completed the year in good standing. Tables 19, 20, and 21 present distributions of scores for students who were in academic difficulty, that is, were on academic probation at the end of the year or had been dismissed during the year for academic reasons.

In interpreting the data in these tables it should be remembered that even though the groups are established on the basis of college perforance, the variables were obtained when the students were seniors in high school. The characteristics of the groups might be quite different if they were assessed at the end of the first year of college instead of during the senior year of high school. We cannot from these data, then, draw any conclusions concerning the differences in effectiveness, if any, between the first year of instruction at a two-year institution and the first year of instruction at a four-year institution.

Table 6

Percent Scoring Below Selected Scores: PSAT-Verbal
Students Who Attend or Do Not Attend College

Score	TOTAL GROUP[1]			ATTEND COLLEGE			DO NOT ATTEND COLLEGE		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
80									
75		100	100	100	100	100			
70	100	99	99	99	98	99			
65	99	98	98	97	94	95	100	100	100
60	96	94	95	91	84	87	99	99	99
55	91	90	91	82	74	78	99	98	98
50	86	83	84	71	60	66	97	95	96
45	79	76	77	58	48	53	92	91	92
40	66	64	65	39	29	34	86	82	84
35	52	50	51	25	19	22	73	66	69
30	35	32	33	14	11	13	50	42	46
25	11	12	12	3	5	4	17	15	16
20	0	0	0	0	0	0	0	0	0
Number	4585	5162	9747	1878	1659	3537	2499	3288	5787
Mean	36.3	37.0	36.7	43.2	46.0	44.5	31.2	32.5	31.9
Std. Dev.	11.3	11.8	11.6	11.4	12.2	11.8	8.1	8.4	8.3

(1) The Total Group includes 423 students (208 Boys, 215 Girls) who could not be classified as either attending college or not attending college because of insufficient data.

Table 7

Percent Scoring Below Selected Scores: PSAT-Mathematical
Students Who Attend or Do Not Attend College

Score	TOTAL GROUP[1]			ATTEND COLLEGE			DO NOT ATTEND COLLEGE		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
80									
75	100		100	100	100	100			
70	99	100	99	97	99	98			
65	95	98	97	88	95	91	100	100	100
60	89	96	93	77	89	83	98	99	99
55	82	91	87	63	78	70	95	98	97
50	71	84	78	45	63	53	90	94	92
45	59	74	67	32	47	39	79	88	84
40	44	61	53	19	30	24	62	77	70
35	26	43	35	11	16	13	39	56	49
30	11	20	16	2	3	3	17	28	23
25	1	3	2	0	0	0	2	5	3
20	0	0	0				0	0	0
Number	4585	5162	9747	1878	1659	3537	2499	3288	5787
Mean	43.2	38.5	40.7	50.3	45.9	48.3	37.9	34.8	36.2
Std. Dev.	11.5	10.3	11.1	11.1	10.5	11.1	8.6	7.9	8.3

[1] The Total Group includes 423 students (208 Boys, 215 Girls) who could not be classified as either attending college or not attending college because of insufficient data.

Table 3

Percent Scoring Below Selected Scores: Rank-in-Class Index
Students Who Attend or Do Not Attend College

Score	TOTAL GROUP[1]			ATTEND COLLEGE			DO NOT ATTEND COLLEGE		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
26				100	100	100			
24	100	100	100	99	99	99		100	
22	99	98	98	97	95	96		99	100
20	96	93	95	92	84	88	100	97	99
18	91	81	86	80	64	73	99	90	94
16	79	62	70	63	38	51	94	74	83
14	63	39	50	39	21	31	82	48	62
12	42	20	30	18	9	14	63	26	41
10	23	10	16	9	3	7	34	14	23
8	8	3	5	2	1	1	13	5	8
6	3	1	2	0	0	0	6	1	3
4	1	0	1				3	0	1
2	0		0				0		0
Number	4199	4799	8998	1825	1609	3434	2243	3061	5304
Mean	12.4	14.3	13.4	14.5	16.3	15.3	10.7	13.3	12.2
Std. Dev.	3.8	3.6	3.8	3.5	3.4	3.6	3.2	3.4	3.5

[1] The Total Group includes 260 students (131 Boys, 129 Girls) who could not be classified as either attending college or not attending college because of insufficient data.

Table 9

Percent Scoring Below Selected Scores: PSAT-Verbal
Students Who Attend Two-Year or Four-Year Institutions

Score	ATTEND TWO-YEAR INSTITUTIONS			ATTEND FOUR-YEAR INSTITUTIONS		
	Boys	Girls	Total	Boys	Girls	Total
80						
75				100	100	100
70		100	100	99	98	98
65	100	98	99	96	93	95
60	98	95	97	89	82	85
55	94	91	93	79	70	75
50	85	85	85	67	55	61
45	77	67	73	54	44	49
40	57	44	52	35	26	31
35	39	41	40	21	15	18
30	31	24	27	11	8	9
25	3	13	8	3	3	3
20	0	0	0	0	0	0
Number	358	297	655	1516	1362	2878
Mean	37.7	39.2	38.4	44.5	47.5	45.9
Std. Dev.	9.6	11.5	10.5	11.4	11.8	11.7

Table 10

Percent Scoring Below Selected Scores: PSAT-Mathematical
Students Who Attend Two-Year or Four-Year Institutions

Score	ATTEND TWO-YEAR INSTITUTIONS			ATTEND FOUR-YEAR INSTITUTIONS		
	Boys	Girls	Total	Boys	Girls	Total
80						
75				100	100	100
70	100	100	100	96	99	97
65	97	99	98	86	94	90
60	93	97	95	74	87	80
55	83	93	87	58	75	66
50	72	85	78	39	58	48
45	60	76	67	26	41	33
40	40	64	51	14	22	18
35	22	41	31	8	11	9
30	6	7	6	1	2	2
25	0	0	0	0	0	0
20						
Number	358	297	655	1516	1362	2878
Mean	43.2	38.9	41.3	52.0	47.4	49.9
Std. Dev.	10.3	9.1	10.0	10.6	10.2	10.7

Table 11

Percent Scoring Below Selected Scores: Rank-in-Class Index
Students Who Attend Two-Year or Four-Year Institutions

Score	ATTEND TWO-YEAR INSTITUTIONS			ATTEND FOUR-YEAR INSTITUTIONS		
	Boys	Girls	Total	Boys	Girls	Total
26				100	100	100
24	100	100	100	99	99	99
22	99	99	99	97	94	95
20	98	92	96	90	82	86
18	94	77	87	77	61	69
16	86	54	72	57	34	46
14	63	34	50	33	18	26
12	47	19	35	11	6	9
10	28	8	19	5	2	3
8	10	1	6	0	1	1
6	0	0	0		0	0
4						
2						
Number	358	285	643	1463	1324	2787
Mean	12.1	14.8	13.3	15.1	16.6	15.8
Std. Dev.	3.5	3.4	3.7	3.3	3.3	3.4

For all variables there is a definite pattern of performance for the groups. In order to show these patterns more clearly, we have extracted the mean scores from some of the tables, rounded them to whole numbers, and presented them in Table 12.

As Table 12 shows, the group that completes the first year of college in good standing tends to score highest, the group that merely completes the year scores slightly lower, and the group that experienced academic difficulty scores considerably lower. Girls tend to score higher on PSAT-Verbal and Rank-in-Class Index than boys, but boys tend to score higher than girls on PSAT-Mathematical.

These patterns hold both for students who attend two-year institutions and for students who attend four-year institutions. However, the mean scores for each college performance group are higher for students who attend four-year institutions than for students who attend two-year institutions. For example, the mean PSAT-Verbal score of students who complete the first year in good standing at two-year colleges is 41, while the mean score for students who complete the year in good standing at four-year colleges is 48.

An examination of mean scores makes it possible to draw general comparisons among the college performance groups, between boys and girls, or between two-year college students and four-year college students. However, it should be noted that there is always considerable overlap of the distributions of scores for any of these comparisons. This can be readily seen by examining Tables 13-21. For example, even though, in general, students who complete the year in good standing at four-year colleges tend to score higher on PSAT-Verbal than students who complete the year in good standing at two-year colleges, we can see from Table 16 that 21% of the students in good standing at two-year colleges scored 50 or above on PSAT-Verbal, and this is higher than 56% of the students in good standing at four-year colleges.

Table 12

Mean Scores for Students Who Attend Two-Year or Four-Year Institutions According to College Performance

	All Students Who Attend College			Students Who Attend Two-Year Institutions			Students Who Attend Four-Year Institutions		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
PSAT-VERBAL									
Complete First Year in Good Standing	46	47	47	42	40	41	47	49	48
Complete First Year	44	47	45	39	39	39	45	48	47
Academic Difficulty During First Year	37	38	37	33	37	34	39	38	39
All Students	43	46	45	38	39	38	45	47	46
PSAT-MATHEMATICAL									
Complete First Year in Good Standing	52	47	50	46	40	43	53	48	51
Complete First Year	51	43	49	43	39	41	53	48	50
Academic Difficulty During First Year	46	39	44	39	36	38	48	40	46
All Students	50	46	48	43	39	41	52	47	50
RANK-IN-CLASS INDEX									
Complete First Year in Good Standing	15	17	16	13	16	15	16	17	16
Complete First Year	15	16	16	12	15	14	15	17	16
Academic Difficulty During First Year	13	15	13	11	13	11	13	15	14
All Students	15	16	15	12	15	13	15	17	16

Table 13

Percent Scoring Below Selected Scores: PSAT-Verbal
Students Who Complete the First Year of College
and Attend Two-Year or Four-Year Institutions

Score	TOTAL GROUP			ATTEND TWO-YEAR INSTITUTIONS			ATTEND FOUR-YEAR INSTITUTIONS		
	Boys[1]	Girls	Total[1]	Boys	Girls	Total	Boys	Girls	Total
80									
75	100	100	100				100	100	100
70	99	98	99		100	100	99	98	98
65	96	94	95	100	98	99	95	93	94
60	89	84	87	98	96	97	88	81	85
55	80	73	77	92	91	92	77	69	73
50	68	59	63	82	85	83	65	54	59
45	55	46	51	74	66	70	51	42	47
40	35	27	31	54	44	49	31	24	28
35	23	17	20	35	40	37	20	13	16
30	13	9	11	28	24	26	10	6	8
25	2	3	3	3	12	7	2	2	2
20	0	0	0	0	0	0	0	0	0
Number	1599	1506	3105	286	254	540	1311	1252	2563
Mean	44.1	46.6	45.3	38.7	39.2	38.9	45.2	48.1	46.6
Std. Dev.	11.4	11.8	11.7	9.9	11.4	10.6	11.4	11.4	11.5

(1) Includes two students (boys) who enrolled in a college that could not be classified as either a two-year or a four-year institution.

Table 14

Percent Scoring Below Selected Scores: pSAT-Mathematical
Students Who Complete the First Year of College
and Attend Two-Year or Four-Year Institutions

Score	TOTAL GROUP			ATTEND TWO-YEAR INSTITUTIONS			ATTEND FOUR-YEAR INSTITUTIONS		
	Boys[1]	Girls	Total[1]	Boys	Girls	Total	Boys	Girls	Total
80									
75	100	100	100				100	100	100
70	96	99	97	100	100	100	95	99	97
65	87	95	91	96	99	98	85	94	89
60	76	88	82	92	96	94	73	87	79
55	61	77	69	80	93	86	56	74	65
50	42	61	52	71	84	77	36	57	46
45	31	46	38	57	74	65	25	40	32
40	19	29	24	43	63	52	14	22	18
35	10	15	13	21	44	32	8	10	9
30	2	1	2	7	4	6	1	1	1
25	0	0	0	0	0	0	0	0	0
20									
Number	1599	1506	3105	286	254	540	1311	1252	2563
Mean	50.9	46.4	48.7	43.5	39.2	41.5	52.5	47.8	50.2
Std. Dev.	11.2	10.5	11.1	10.6	9.3	10.2	10.6	10.1	10.6

(1) Includes two students (boys) who enrolled in a college that could not be classified as either a two-year or a four-year institution.

Table 15

Percent Scoring Below Selected Scores: Rank-in-Class Index
Students Who Complete the First Year of College and
Attend Two-Year or Four-Year Institutions

Score	TOTAL GROUP			ATTEND TWO-YEAR INSTITUTIONS			ATTEND FOUR-YEAR INSTITUTIONS		
	Boys[1]	Girls	Total[1]	Boys	Girls	Total	Boys	Girls	Total
26	100	100	100				100	100	100
24	99	99	99	100	100	100	99	99	99
22	97	94	96	99	99	99	96	93	95
20	91	83	87	98	91	95	89	81	85
18	78	62	70	92	74	84	75	59	67
16	58	36	47	83	48	67	53	34	43
14	34	21	27	62	30	48	27	19	23
12	17	8	13	45	19	33	10	6	8
10	9	3	6	30	6	19	4	2	3
8	2	1	1	8	1	5	0	1	1
6	0	0	0	0	0	0		0	0
4									
2									
Number	1558	1466	3024	286	242	528	1270	1224	2494
Mean	14.8	16.4	15.6	12.2	15.2	13.6	15.4	16.6	16.0
Std. Dev.	3.5	3.4	3.5	3.6	3.4	3.8	3.2	3.3	3.3

(1) Includes two students (boys) who enrolled in a college that could not be classified as either a two-year or a four-year institution.

Table 16

Percent Scoring Below Selected Scores: PSAT-Verbal
Students Who Complete the First Year of College in Good Standing
and Attend Two-Year or Four-Year Institutions

Score	TOTAL GROUP			ATTEND TWO-YEAR INSTITUTIONS			ATTEND FOUR-YEAR INSTITUTIONS		
	Boys[1]	Girls	Total[1]	Boys	Girls	Total	Boys	Girls	Total
80									
75	100	100	100				100	100	100
70	99	98	98	100	100	100	99	97	98
65	95	93	94	99	98	99	95	92	94
60	88	82	85	97	95	96	86	80	83
55	76	71	73	89	90	89	74	68	71
50	62	57	59	75	83	79	60	52	56
45	48	44	46	63	63	63	46	40	43
40	28	25	26	40	42	41	26	22	24
35	15	16	16	22	38	30	14	12	13
30	8	7	8	16	18	17	7	5	6
25	1	2	1	0	9	5	1	1	1
20	0	0	0		0	0	0	0	0
Number	1263	1377	2640	185	218	403	1076	1159	2235
Mean	46.1	47.3	46.7	41.9	40.2	41.0	46.8	48.7	47.8
Std. Dev.	10.9	11.7	11.3	9.6	11.4	10.6	10.9	11.3	11.1

(1) Includes two students (boys) who enrolled in a college that could not be classified as either a two-year or a four-year institution.

Table 17

Percent Scoring Below Selected Scores: PSAT-Mathematical
Students Who Complete the First Year of College in Good Standing
and Attend Two-Year or Four-Year Institutions

Score	TOTAL GROUP			ATTEND TWO-YEAR INSTITUTIONS			ATTEND FOUR-YEAR INSTITUTIONS		
	Boys[1]	Girls	Total[1]	Boys	Girls	Total	Boys	Girls	Total
80									
75	100	100	100				100	100	100
70	95	99	97	100	100	100	94	99	97
65	85	95	90	94	99	97	83	94	89
60	72	88	80	89	97	93	69	86	78
55	55	76	66	72	93	83	52	73	63
50	36	59	48	58	83	72	32	55	44
45	27	43	35	51	72	62	23	37	30
40	16	27	22	28	59	45	14	21	18
35	9	14	11	16	42	30	7	8	8
30	1	0	1	5	0	2	0	0	0
25	0		0	0		0			
20									
Number	1263	1377	2640	185	218	403	1076	1159	2235
Mean	52.4	47.0	49.6	46.1	40.0	42.8	53.5	48.3	50.8
Std. Dev.	11.0	10.3	11.0	10.9	9.1	10.4	10.6	10.0	10.6

(1) Includes two students (boys) who enrolled in a college that could not be classified as either a two-year or a four-year institution.

Table 18

Percent Scoring Below Selected Scores: Rank-in-Class Index
Students Who Complete the First Year of College in Good Standing
and Attend Two-Year or Four-Year Institutions

Score	TOTAL GROUP			ATTEND TWO-YEAR INSTITUTIONS			ATTEND FOUR-YEAR INSTITUTIONS		
	Boys[1]	Girls	Total[1]	Boys	Girls	Total	Boys	Girls	Total
26	100	100	100	100			100	100	100
24	99	99	99	99	100	100	99	99	99
22	96	94	95	98	99	99	96	93	94
20	89	82	85	97	90	93	87	81	84
18	73	60	66	88	71	79	70	58	64
16	52	33	43	74	43	57	49	32	40
14	28	17	23	50	25	36	25	16	20
12	13	7	10	30	12	20	10	7	8
10	7	3	5	25	6	15	4	2	3
8	1	1	1	6	1	3	0	1	1
6	0	0	0	0	0	0		0	0
4									
2									
Number	1246	1349	2595	185	216	401	1059	1133	2192
Mean	15.3	16.6	16.0	13.2	15.6	14.5	15.7	16.8	16.3
Std. Dev.	3.5	3.3	3.5	3.8	3.3	3.7	3.3	3.3	3.3

(1) Includes two students (boys) who enrolled in a college that could not be classified as either a two-year or a four-year institution.

Table 19

Percent Scoring Below Selected Scores: PSAT-Verbal
Students Who Are in Academic Difficulty During the First Year of College
and Attend Two-Year or Four-Year Institutions

Score	TOTAL GROUP			ATTEND TWO-YEAR INSTITUTIONS			ATTEND FOUR-YEAR INSTITUTIONS		
	Boys[1]	Girls	Total[1]	Boys	Girls	Total	Boys	Girls	Total
80									
75									
70	100	100	100				100	100	100
65	99	99	99	100	100	100	98	98	98
60	96	94	96	99	96	99	95	93	94
55	94	89	92	99	96	99	92	87	90
50	90	79	86	97	88	95	86	76	83
45	80	73	78	95	81	92	74	71	73
40	63	53	60	78	38	68	57	57	57
35	46	37	43	59	38	54	41	37	39
30	30	32	31	52	38	49	22	30	24
25	6	19	9	7	19	10	5	18	9
20	0	0	0	0	0	0	0	0	0
Number	525	216	741	153	52	205	370	164	534
Mean	37.1	38.1	37.4	32.8	37.3	33.9	38.8	38.4	38.7
Std. Dev.	10.0	12.3	10.7	7.4	10.9	8.6	10.4	12.7	11.2

[1] Includes two students (boys) who enrolled in a college that could not be classified as either a two-year or a four-year institution.

Table 20

Percent Scoring Below Selected Scores: PSAT-Mathematical
Students Who Are in Academic Difficulty During the First Year of College
and Attend Two-Year or Four-Year Institutions

Score	TOTAL GROUP			ATTEND TWO-YEAR INSTITUTIONS			ATTEND FOUR-YEAR INSTITUTIONS		
	Boys[1]	Girls	Total[1]	Boys	Girls	Total	Boys	Girls	Total
80									
75	100		100				100	100	100
70	99	100	99				99	99	99
65	96	98	96	100	100	100	94	98	95
60	90	97	92	98	96	98	86	98	90
55	81	92	84	97	92	96	75	91	80
50	65	84	70	91	88	91	54	83	63
45	43	78	53	73	88	77	30	74	44
40	29	46	34	59	81	64	16	35	22
35	15	33	21	33	38	34	8	32	15
30	4	19	8	7	19	10	3	18	7
25	0	0	0	0	0	0	0	0	0
20									
Number	525	216	741	153	52	205	370	164	534
Mean	45.7	39.5	43.9	38.9	36.4	38.3	48.4	40.4	46.0
Std. Dev.	9.9	9.6	10.2	8.1	9.1	8.4	9.3	9.6	10.1

(1) Includes two students (boys) who enrolled in a college that could not be classified as either a two-year or a four-year institution.

Table 21

Percent Scoring Below Selected Scores: Rank-in-Class Index
Students Who Are in Academic Difficulty During the First Year of College
and Attend Two-Year or Four-Year Institutions

Score	TOTAL GROUP			ATTEND TWO-YEAR INSTITUTIONS			ATTEND FOUR-YEAR INSTITUTIONS		
	Boys[1]	Girls	Total[1]	Boys	Girls	Total	Boys	Girls	Total
26									
24									
22	100	100	100		100	100	100	100	100
20	99	92	97		98	99	99	90	96
18	97	88	95	100	98	99	96	85	93
16	86	62	79	99	86	96	79	55	72
14	61	44	56	77	81	78	54	34	48
12	33	13	27	68	48	64	17	3	13
10	14	2	11	29	0	23	9	2	6
8	3	2	2	9		7	0	2	1
6	0	0	0	0		0		0	0
4									
2									
Number	499	194	693	153	42	195	344	152	496
Mean	12.6	14.5	13.1	10.9	12.5	11.2	13.4	15.1	13.9
Std. Dev.	2.7	2.9	2.9	2.5	2.2	2.6	2.5	2.8	2.7

(1) Includes two students (boys) who enrolled in a college that could not be classified as either a two-year or a four-year institution.

Summary

Previous studies seem to suffer from a number of restrictions which seriously limit the extent to which we can describe the academic ability of the national populations of high school seniors and college freshmen. In addition, adequate data have not been available which would enable us to describe the academic ability of students who enter junior colleges or to compare these students with those entering four-year colleges.

In this study we have conducted a follow-up of a representative national sample of high school seniors to determine which students went to college, what kinds of colleges they attended, and the nature of their performance during the first year of college. The academic ability of these students is measured by a widely used test of scholastic aptitude and the high school rank-in-class.

Data are presented in this report which describe the academic ability of students who enroll in two-year institutions and students who enroll in four-year institutions according to their performance during the first year of college.

It is felt that these data represent the most comprehensive and representative information on the academic ability of the national population of junior college freshmen that is available to date.

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(11) Seibel, Dean W. Follow-up Study of a National Sample of High School Seniors: Phase 2, One Year after Graduation. College Entrance Examination Board Research and Development Report 65-6, No. 1, Statistical Report SR 65-62. Princeton, N. J.: Educational Testing Service, 1965.

(12) The score scale of the PSAT (both Verbal and Mathematical) extends from 20-80, and is equivalent to the 200-800 scale of the Scholastic Aptitude Test, of which the PSAT is a shorter version. For further information about the PSAT, the reader is referred to: College Board Score Reports: A Guide for Counselors and Admissions Officers. New York: College Entrance Examination Board, 1965.

(13) It will be noticed that the mean and standard deviation of the Rank-in-Class Index for the total group are 13.4 and 3.8 respectively (see Table 8). If the sample on which these statistics are based had consisted of every senior in each included high school, the mean and standard deviation would, of course, be 13.0 and 4.0. However, because each school did not provide this information for all seniors in the sub-sample, and because a statistical adjustment was applied to the sub-sample to restore the characteristics of the original sample, the mean and standard deviation differ somewhat from the theoretical values.

For the convenience of those who might wish to interpret the Rank-in-Class Index in terms of the more familiar "percentile rank" the following table derived from the normal curve distribution is given:

Rank-in-Class Index	Range of Percentile Ranks
26	99.91-100.00
25	99.80- 99.90
24	99.57- 99.79
23	99.12- 99.56
22	98.32- 99.11
21	96.96- 98.31
20	94.79- 96.95
19	91.54- 94.78
18	86.97- 91.53
17	80.92- 86.96
16	73.40- 80.91
15	64.62- 73.39
14	54.97- 64.61
13	45.03- 54.96
12	35.38- 45.02
11	20.60- 35.37
10	19.08- 26.59
9	13.03- 19.07
8	8.46- 13.02
7	5.21- 8.45
6	3.04- 5.20
5	1.68- 3.03
4	0.88- 1.67
3	0.43- 0.87
2	0.20- 0.42
1	0.09- 0.19
0	0.00- 0.08

(14) Education Directory, 1961-62, Part 3, Higher Education. Washington, D. C.: U. S. Department of Health, Education, and Welfare, Office of Education, 1962.