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The Biennial Survey of Scholastic Aptitude of Minnesota College Freshmen

by
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Student Counseling Bureau

This report is based upon entering freshmen in 35 Minnesota Colleges for the fall of 1956 who were tested as juniors in the 1953, 1954, and 1955 State-Wide College Testing Program.

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Introduction

Surveys of scholastic aptitude in Minnesota have been made since 1930. Since 1937, reports are comparable. These surveys, based on information about high school and college students obtained through the State-Wide Testing Program, provide a picture of the college aptitude and high school achievement of high school graduates and freshmen in various colleges and types of colleges in Minnesota. High school counselors, teachers, and administrators and college counselors, deans, presidents, admissions officers and faculties thus have available a continuing inventory of the abilities and achievements of their students.

From 1937 through 1949, reports were issued annually; from 1951, they have been issued biennially except in 1953 and 1954 when the reports were issued each year. The 1953 report was the last one for which the results were based on entering freshmen tested as seniors in the State-Wide Testing Program, and the 1954 report was the first one for which the results were based on entering freshmen tested as juniors. In 1952 and 1953, both juniors and seniors were tested in the State-Wide Testing Program. The seniors graduating in the spring of 1953 constituted the bulk of entering freshmen in the fall of 1953, while the juniors tested in 1953 graduated as seniors in 1954 and comprised the bulk of entering freshmen in the fall of 1954. The current study, based on entering freshmen of 1956, is the second Scholastic Survey in which the entering freshmen were tested previously as juniors in high school.

The Background of the Study

In Minnesota, the Association of Minnesota Colleges sponsors the State-Wide Testing Program for high school juniors. The program is administered by the Student Counseling Bureau of the Office of the Dean of Students at the University of Minnesota. For the current survey the tests used were the 1952 College Edition of the American Council of Education Psychological Examination (ACE) and Form Z of the Cooperative English Test (Coop. Eng.).

At the end of the junior year the high schools calculate the high school rank (HSR) for the first three years of high school (two years if it is a three-year senior high school.) The scores of the two tests and the high school rank for each student are reported by the Student Counseling Bureau to the high schools and to the members of the Association of Minnesota Colleges.

Results are used by the high schools for counseling and guidance purposes and by the colleges for admission and classification purposes as well as for counseling and guidance once the student is admitted.

The report for 1956 represents a biennium study; the year 1958 will also be a biennium study and will be the last year in which results will be reported for the 1952 College Edition of the ACE. In 1959 another survey will be conducted which will be the first year in which entering freshmen will have been tested with the Minnesota Scholastic Aptitude Test (MSAT) as juniors.

The current survey is based on entering freshmen in Minnesota colleges who were tested as juniors in high school. As the 1952 College Edition of the ACE and the Form Z of the Cooperative English Test were first given to juniors in 1952-53, seniors of only three graduating years in high school are involved - 1954, 1955, and 1956. Each group of these seniors was tested a year and a half prior to graduation from high school while they were juniors.

Procedure of the Study

In September of 1956, each college was asked to furnish alphabetical lists of all entering freshmen separately for men and women, indicating the name of the student's high school and the year of high school graduation. The Student Counseling Bureau, taking from its files the high school percentile ranks and scores on the ACE and Cooperative English Test, then determined the means and standard deviations by men, women, and by total for each individual college, and for types of colleges. In addition to determining these statistics for the entering freshmen in each college, the Student Counseling Bureau also drew an approximate 20 per cent sample of the juniors tested in the previous year (1955-56) and calculated means and standard deviations for these high school juniors by men, women, and total. Tables 4 through 9 at the end of this report contain these summary statistics.

Completeness of Data

Of the approximately 560 high schools in Minnesota, in 1955-56, 547 or 98 per cent cooperated with this program and tested their juniors. As the few schools which do not cooperate in the testing are generally quite small high schools, close to 100 per cent of the juniors in the state of Minnesota, in a given year, are tested. In 1956 there were 37 Minnesota colleges, both public and private*. Of these, 35, or 95 per cent, furnished lists of their entering freshmen to the Student Counseling Bureau.

Tables 1 to 3 show the per cent of entering freshmen, graduating from Minnesota high schools**, for whom the test scores and high school rank were available. Incomplete coverage is due to: 1) Missing test scores or high school rank, and

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* Six University of Minnesota colleges, including the Duluth Branch, are included.

** For the University of Minnesota total enrollments were used, as the number of non-Minnesota entering freshmen is small, approximately four per cent.

2) Only juniors being included who were tested in 1952-53, 1954-55, and 1955-56 (graduating seniors of 1954, 1955, and 1956.) The data are more complete for women than for men, being available for 94 per cent of the women and 84 per cent of the men. This probably reflects a considerable number of men who graduated from high school prior to 1954 and who entered the military service before starting college. For the entire group, data are available for 88 per cent of the entering freshmen.

When one considers high schools participating in the testing program, colleges cooperating in the survey, and per cent of entering freshmen for whom data are available, the survey is a rather complete and comprehensive report of entering freshmen in Minnesota colleges, and as such provides comparable statistics to previous Scholastic Comparison Studies.

Results

Figures 1 to 3 show a graphic comparison of selected entering freshmen groups as well as the 20 per cent sample of high school juniors. The heavy portion of each bar constitutes approximately two-thirds of the scores for the entering freshmen, both male and female, for that group. The indentation in the heavy portion of the bar indicates the mean of the group. For example, on Figure 2 for the ACE, two-thirds of the high school juniors obtain raw scores between 64 and 115 (scale on upper part of graph) and the group has a mean of 89. Referring to the percentile scale at the bottom of Figure 2, this same two-thirds of the high school juniors ranges from the 4-78 percentiles on entering freshmen norms. On the same ACE figure, the University's College of Science, Literature, and the Arts, has a mean raw score of 112 and two-thirds of its entering freshmen obtain scores in the raw score range of 94-130. On the norms for entering freshmen, these raw scores correspond to the 30 and 96 percentiles, respectively.

The results, taken as a whole, conform to the usual pattern found in the previous Surveys. Women consistently have better grades (see HSR) and markedly higher English scores. This holds true for practically every individual college as well as for each type of college. On the ACE, few significant sex differences occur, and when they do occur they are not consistently in favor of one sex.

Mean scores for the individual colleges vary markedly. On the ACE, some colleges have mean scores placing them in the upper one-third of all Minnesota freshmen and some colleges have mean scores placing them in the lower one-third of Minnesota freshmen. (Note the indentations on the large bars in Figure 2 and refer the indentation to the percentile scale on the bottom of the figure.) However, even with the great variation of mean scores, reference to the standard deviations show that every college has some students at the very top of the distribution and some at the very bottom of the distribution for each of the three measures, HSR, ACE, and Coop. Eng.

There are also marked differences in mean scores among the college types. However, some of the mean scores for students in junior colleges exceed some of the mean scores for the four-year liberal arts colleges. In general, differences of the mean scores among individual colleges are greater than are the

differences among mean scores for type of institution.

Trends

In the 1953 and 1954 Scholastic Comparison Studies, graphs were shown on the Scholastic Aptitude Test for the period from 1937 to the present. In 1957 and 1958, the Student Counseling Bureau undertook a large-scale summary study of the results of the entire State-Wide Testing Program effort from its inception up through 1956. The summary indicated that there were no significant trends in test score data for entering freshmen in Minnesota colleges. The mean differences from year to year, where the same tests had been used, seemed to be equally as large as the differences that occurred between new and old forms of the same test. That is, comparing results on the old form of the test to the new form of the test gave no larger mean differences than did, say, two consecutive years when the same test had been used. The summary study indicated that over a period of more than two decades there was no change either upward or downward in the quality of the entering freshmen in Minnesota colleges as indicated by their mean HSR and their mean Scholastic Aptitude Test scores.

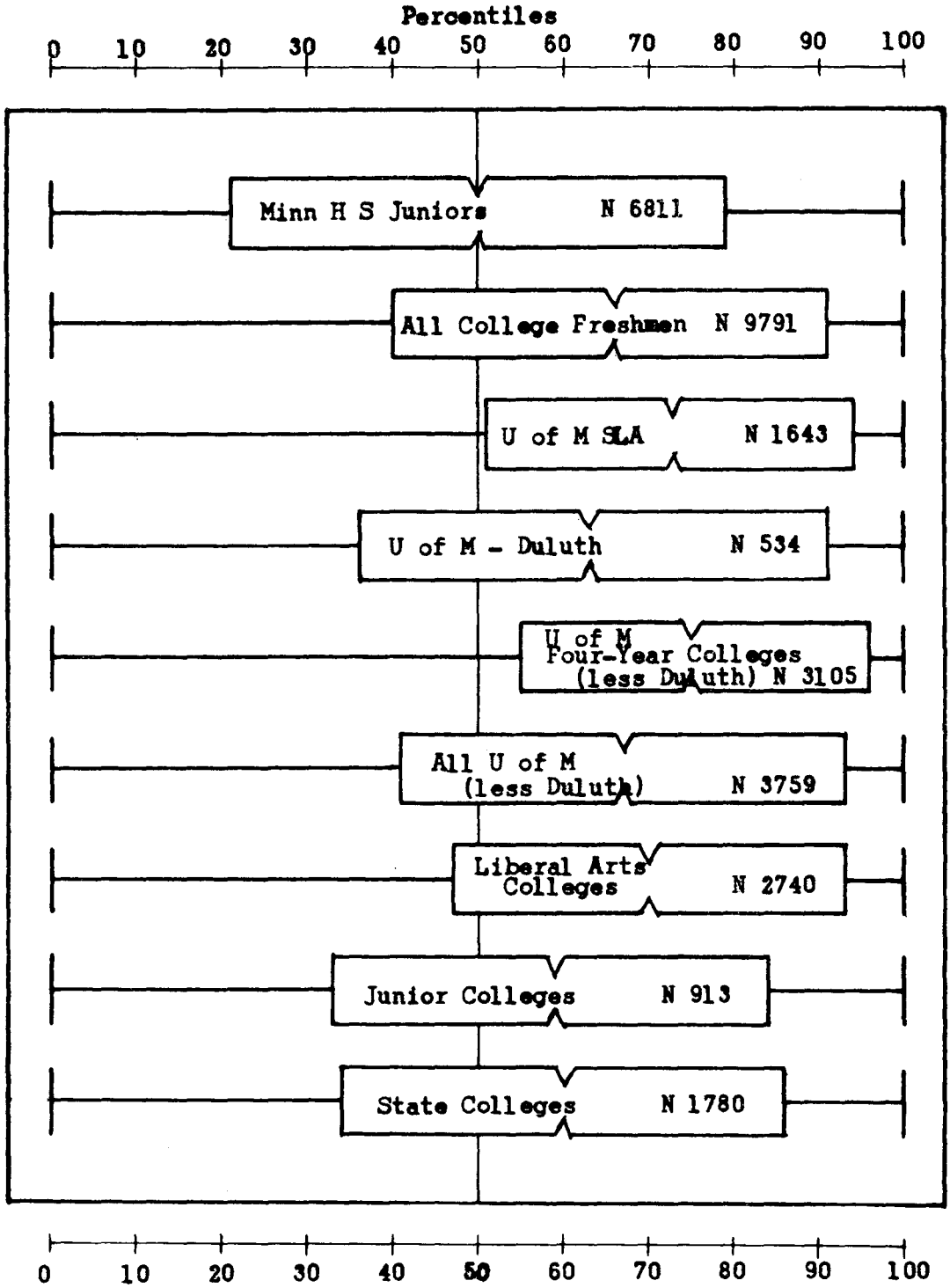
Conclusion

Again, the biennial scholastic comparison reveals that the most striking characteristic of the abilities of Minnesota college students is their variability. Although the average student in one college tends to be above or below the average student in another college, and types of colleges can be placed in a hierarchy on the basis of average ability, each college and each type of college has students with a broad range of ability. Colleges that on the average have students of relatively low ability also have superior students, and colleges with high averages have some students of much less ability. In this state are colleges for students of many kinds of abilities, but students have a wide choice of colleges in which they can find students of similar abilities.

Minnesota college students are highly selected from high school students, the average college freshman coming from the upper one-third of his high school class. Even in those colleges at the bottom of the ability hierarchy the average student has significantly more ability than the average high school student. High school counselors seem to be doing a credible job of guiding students toward colleges; college admissions officers are serving their purpose well.

Figure 1

Variability of High School Percentiles of College Freshmen who were graduated from Minnesota High Schools and who entered Minnesota Colleges, September, 1956.

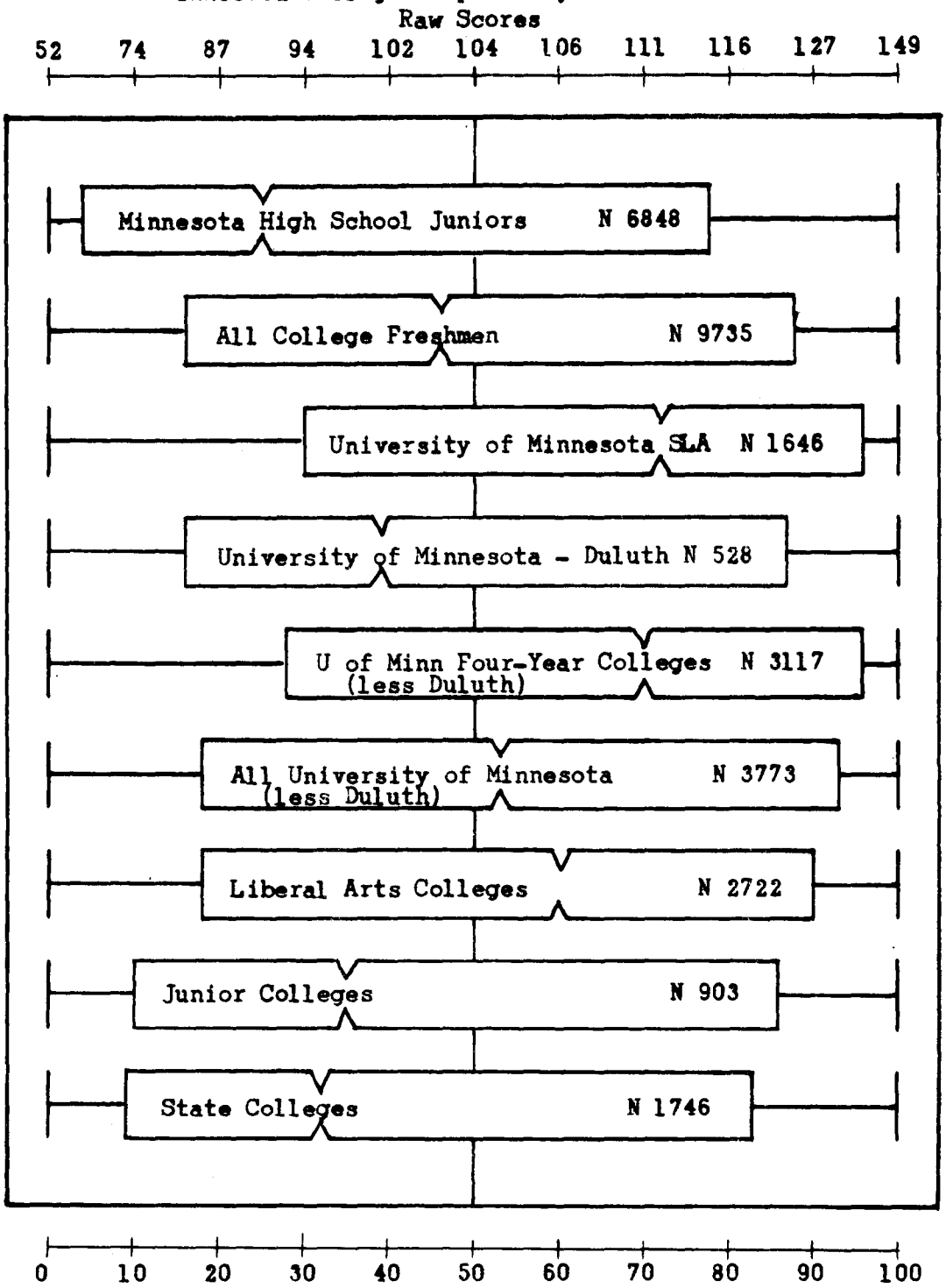


The range of each group can extend from the first to the hundredth percentile. The wide portion of each group represents the middle two-thirds of freshmen of the group. The indentation in the wide portion is the mean of the group.

Figure 2

Variability of Scores on ACE Psychological Examination, 1952 College Edition.

College Freshmen who were graduated from Minnesota High Schools and who entered Minnesota Colleges September, 1956.

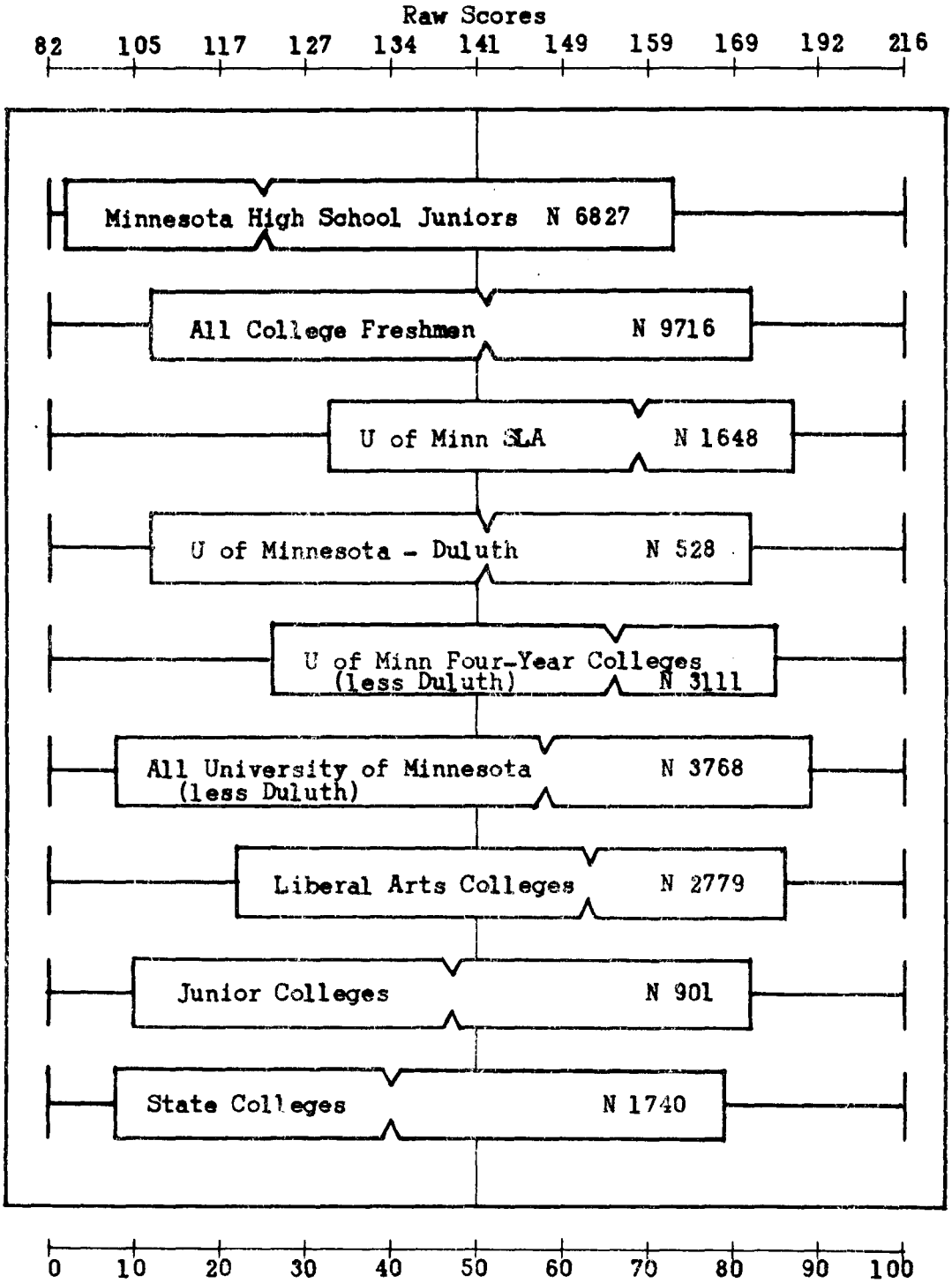


The range of each group can extend from the first to the hundredth percentile. The wide portion of each group represents the middle two-thirds of the group. The indentation in the wide portion is the mean of the group.

Figure 3

Variability of Cooperative English Test, Form Z, Lower Level, Total Score.

College Freshmen who were graduated from Minnesota High Schools and who entered Minnesota Colleges, September, 1956.



The range of each group can extend from the first to the hundredth percentile. The wide portion of each group represents the middle two-thirds of the group. The indentation in the wide portion is the mean of the group.

Table 1

Number of men and women who were graduated from Minnesota high schools and who were enrolled in each college and each type of college with number and per cent of students for whom specified scores were available.

	College Code	Total No. Freshmen Men & Women Enrolled	High School Scholarship Data Available for: No.	%	American Council Data Available for: No.	%	Cooperative English Data Available for: No.	%
U of M	A	5221	4293	82	4301	82	4296	82
Ag,For,H Ec.	1	437	348	80	349	80	345	79
Dent. Hygiene	2	41	33	80	33	80	33	80
Education	3	315	303	96	305	97	303	96
Gen. College	4	1063	654	62	656	62	657	62
Inst. Tech.	5	876	778	89	784	89	782	89
SLA	6	1912	1643	86	1646	86	1648	86
UMD	7	577	534	93	528	92	528	92
(4 Year College)	B	2992	2805	94	2785	93	2779	93
	1	181	173	96	170	94	170	94
	2	85	84	99	82	96	82	96
	3	263	239	91	239	91	238	90
	4	318	284	89	285	90	284	90
	5	303	296	98	295	97	293	97
	6	307	301	98	300	98	299	97
	7	117	111	95	111	99	111	95
	8	228	214	94	211	93	210	92
	9	232	219	94	222	96	222	96
	10	49	46	94	45	92	45	92
	11	296	289	98	284	96	285	96
	12	344	313	91	308	90	308	90
	13	100	94	94	94	94	94	94
	14	82	77	94	76	93	76	93
	16	87	65	75	63	72	62	71
(Junior College)	C	971	913	94	903	93	901	93
	3	71	66	93	66	93	66	93
	4	66	65	98	65	98	65	98
	5	191	182	95	182	95	182	95
	6	91	86	95	85	93	85	93
	7	139	128	92	127	91	125	90
	9	123	120	98	116	94	119	97
	10	64	57	89	58	91	56	88
	13	167	153	92	149	89	148	89
	14	59	56	95	55	93	55	93
(State College)	D	1907	1780	93	1746	92	1740	91
	1	240	223	93	224	93	223	93
	3	682	648	95	613	90	611	90
	4	200	178	89	180	90	180	90
	5	587	550	94	550	94	548	93
	6	198	181	91	179	90	178	90
Total		11091	9791	88	9735	88	9716	88

Table 2

Number of men who were graduated from Minnesota high schools and who were enrolled in each college and in each type of college with number and per cent for whom specified scores were available.

	College Code	Total No. Freshmen Men Enrolled	High School Scholarship Data Available for: No.	%	American Council Data Available for: No.	%	Cooperative English Data Available for: No.	%
U of M	A	3487	2672	77	2681	77	2680	77
Ag,For,H Ec.	1	291	202	69	203	70	201	69
Dent. Hygiene	2							
Education	3	64	60	93	62	97	61	95
Gen. College	4	815	454	56	456	56	458	56
Inst. Tech.	5	867	771	89	777	90	775	89
SLA	6	1092	859	79	861	79	863	79
UMD	7	358	326	91	322	90	322	90
(4 Year College)	B	1514	1396	92	1388	92	1385	91
	1	99	96	97	91	92	91	92
	2	47	46	98	45	96	45	96
	3	115	101	88	100	87	100	87
	4	182	155	85	156	86	155	85
	5	149	145	97	146	98	146	92
	6	124	120	97	122	98	121	98
	7							
	8							
	9	232	219	94	222	96	222	96
	10	49	46	94	45	92	45	92
	11	127	123	97	123	97	123	97
	12	344	313	91	308	90	308	90
	13							
	14							
	16	46	32	70	30	65	29	63
(Junior College)	C	631	595	94	589	93	589	93
	3	44	40	91	40	91	40	91
	4	44	44	100	44	100	44	100
	5	112	107	96	107	96	107	96
	6	66	66	100	65	98	65	98
	7	86	79	92	80	93	79	92
	9	85	83	98	79	93	82	96
	10	54	47	87	48	89	46	85
	13	100	89	89	86	86	86	86
	14	42	40	95	40	95	40	95
(State College)	D	911	838	92	812	89	811	89
	1	142	127	89	129	91	128	90
	3	303	290	96	267	88	267	88
	4	79	71	90	71	90	72	91
	5	277	255	92	251	91	250	90
	6	110	95	86	94	85	94	85
Total		6543	5501	84	5470	84	5465	84

Table 3

Number of women who were graduated from Minnesota high schools and who were enrolled in each college and in each type of college with number and per cent for whom specified scores were available.

	College Code	Total No. Freshmen Women Enrolled	High School Scholarship Data Available for: No.	%	American Council Data Available for: No.	%	Cooperative English Data Available for: No.	%
U of M	A	1734	1621	93	1620	93	1616	93
Ag,For,H Ec.	1	146	146	100	146	100	144	99
Dent. Hygiene	2	41	33	80	33	80	33	80
Education	3	251	243	97	243	97	242	96
Gen. College	4	248	200	81	200	81	199	80
Inst. Tech.	5	9	7	78	7	78	7	78
SLA	6	820	784	96	785	96	785	96
UMD	7	219	208	95	206	94	206	94
(4 Year	B	1478	1409	95	1397	95	1394	94
College)	1	82	77	94	79	96	79	96
	2	38	38	100	37	97	37	97
	3	148	138	93	139	94	138	93
	4	136	129	95	129	95	129	95
	5	154	151	98	149	97	147	95
	6	183	181	99	178	97	178	97
	7	117	111	95	111	95	111	95
	8	228	214	94	211	93	210	92
	9							
	10							
	11	169	166	98	161	95	162	96
	12							
	13	100	94	94	94	94	94	94
	14	82	77	94	76	93	76	93
	16	41	33	80	33	80	33	80
(Junior	C	340	318	94	314	92	312	92
College)	3	27	26	96	26	96	26	96
	4	22	21	95	21	95	21	95
	5	79	75	95	75	95	75	95
	6	27	20	74	20	74	20	74
	7	53	49	92	47	89	46	87
	9	38	37	97	37	97	37	97
	10	10	10	100	10	100	10	100
	13	67	64	96	63	94	62	93
	14	17	16	94	15	88	15	88
(State	D	996	942	95	934	94	929	93
College)	1	98	96	98	95	97	95	97
	3	379	358	94	346	91	344	91
	4	121	107	88	109	90	108	89
	5	310	295	95	299	96	298	96
	6	88	86	98	85	97	84	95
Total		4548	4290	94	4265	94	4251	93

Table 4

Table showing the Mean and Standard Deviation of High School %iles, American Council Test (1952 College Edition) and Cooperative English Test (Form Z, lower level) for:

A. University of Minnesota (All Colleges Including UMD)
B. Four Year Colleges
C. Junior Colleges
D. State Colleges

Men

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A	2672	62.73	26.70	2681	104.54	22.95	2680	137.53	33.55
B	1396	65.01	23.83	1388	105.72	20.96	1385	140.60	31.32
C	595	54.20	25.31	589	97.18	23.57	589	131.49	32.67
D	838	50.96	25.69	812	93.43	23.19	811	119.59	33.62
Total	5501	60.59	26.19	5470	102.40	23.00	5465	134.99	33.63

Women

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A	1621	72.72	23.51	1620	105.11	21.82	1616	157.63	30.47
B	1409	77.07	20.36	1397	106.91	20.60	1394	162.01	27.59
C	318	66.63	24.53	314	96.40	22.72	312	153.85	32.99
D	942	68.09	23.54	934	96.54	21.70	929	146.02	29.43
Total	4290	72.68	22.91	4265	103.21	21.79	4251	156.25	30.11

Men and Women

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A	4293	66.50	26.00	4301	104.76	22.53	4296	145.09	33.85
B	2805	71.07	22.96	2785	106.32	20.79	2779	151.34	31.39
C	913	58.53	25.73	903	96.91	23.28	901	139.23	34.46
D	1780	60.02	26.02	1746	95.10	22.46	1740	133.70	34.11
Total	9791	65.89	25.52	9735	102.74	22.53	9716	144.29	33.83

Table 5

Table showing the Mean and Standard Deviation of High School %iles, American Council Test (1952 College Edition) and Cooperative English Test (Form Z, lower level) for:

University of Minnesota

1. Agriculture
2. Dental Hygiene
3. Education
4. General College
5. Institute of Technology
6. Science, Literature, and the Arts
7. Duluth Branch

Men

Code	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A 1	202	67.44	19.92	203	100.53	20.28	201	134.24	29.53
2									
3	60	62.87	16.98	62	95.82	18.58	61	128.02	30.55
4	454	28.44	17.04	456	78.90	17.95	458	100.77	26.80
5	771	79.45	16.30	777	116.01	19.13	775	151.83	26.75
6	859	67.42	22.48	861	111.20	17.46	863	148.06	27.70
7	326	55.59	27.55	322	99.57	22.07	322	131.02	32.71
Total	2672	62.73	26.70	2681	104.54	22.95	2680	137.53	33.55

Women

Code	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A 1	146	79.88	20.37	146	108.48	17.42	144	156.93	26.28
2	33	77.30	17.38	33	105.67	20.59	33	159.12	27.14
3	243	75.48	17.30	243	100.93	20.42	242	154.61	29.03
4	200	36.06	19.68	200	78.58	17.32	199	121.58	30.20
5	7	93.14	3.72	7	124.29	16.90	7	182.57	11.35
6	784	78.82	18.36	785	112.88	18.79	785	168.04	24.86
7	208	75.31	21.83	206	103.11	19.06	206	155.74	27.34
Total	1621	72.72	23.51	1620	105.11	21.82	1616	157.63	30.47

Men and Women

Code	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A 1	348	72.66	21.03	349	103.86	19.53	345	143.71	30.35
2	33	77.30	17.38	33	105.67	20.59	33	159.12	27.14
3	303	72.98	17.96	305	99.90	20.16	303	149.26	31.22
4	654	30.77	18.22	656	78.80	17.76	657	107.07	29.47
5	778	79.58	16.28	784	116.09	19.12	782	152.10	26.81
6	1643	72.86	21.39	1646	112.00	18.12	1648	157.58	28.21
7	534	63.27	27.23	528	100.95	21.02	528	140.66	33.01
Total	4293	66.50	26.00	4301	104.76	22.53	4296	145.09	33.85

Table 6

Table showing the Mean and Standard Deviation of High School %iles, American Council Test (1952 College Edition) and Cooperative English Test (Form Z, lower level) for:

Four Year Colleges

Men

Code	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
B 1	96	57.03	23.19	91	97.11	19.94	91	128.74	30.90
2	46	76.43	24.97	45	127.13	14.40	45	165.64	25.95
3	101	64.47	24.48	100	104.27	20.96	100	139.59	10.77
4	155	64.55	24.09	156	103.56	22.92	155	134.89	31.64
5	145	68.08	21.57	146	104.03	20.15	146	135.64	27.98
6	120	65.65	18.53	122	108.86	18.67	121	146.71	29.21
7									
8									
9	219	66.88	21.05	222	106.21	20.23	222	141.77	28.23
10	46	61.37	26.14	45	110.16	19.72	45	140.22	32.90
11	123	73.80	20.03	123	110.04	18.89	123	148.55	28.98
12	313	60.55	25.83	308	103.12	21.01	308	139.68	32.81
13									
14									
16	32	62.56	33.51	30	109.70	20.61	29	140.17	32.11
Total	1396	65.01	23.83	1388	105.72	20.96	1385	140.60	31.32

Women

Code	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
B 1	77	77.36	20.28	79	104.70	20.35	79	161.54	28.19
2	38	85.03	20.13	37	122.70	15.46	37	184.30	22.12
3	138	75.51	22.17	139	100.95	21.38	138	156.28	30.17
4	129	77.21	18.72	129	106.34	20.55	129	160.33	26.03
5	151	80.85	15.86	149	108.15	18.14	147	162.83	21.70
6	181	80.65	17.17	178	108.36	17.78	178	161.60	26.69
7	111	71.03	22.91	111	102.46	21.54	111	154.98	29.36
8	214	73.97	22.45	211	109.81	20.27	210	168.31	27.96
9									
10									
11	166	82.89	15.72	161	113.44	19.75	162	168.22	22.68
12									
13	94	67.43	25.50	94	100.78	20.57	94	154.77	26.11
14	77	74.49	20.08	76	100.42	22.46	76	153.30	33.31
16	33	80.97	11.63	33	105.45	21.17	33	160.88	27.77
Total	1409	77.07	20.36	1397	106.91	20.60	1394	162.01	27.59

Table 6 (Continued)

Men and Women

Code	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
B 1	173	66.08	24.16	170	100.64	20.48	170	143.98	33.88
2	84	80.32	23.30	82	125.13	15.52	82	174.06	26.01
3	239	70.85	23.81	239	102.34	21.27	238	149.26	32.91
4	284	70.30	22.71	285	104.82	21.92	284	146.44	31.85
5	296	74.60	19.92	295	106.11	19.27	293	149.28	28.48
6	301	74.67	19.18	300	108.56	18.15	299	155.58	28.69
7	111	71.03	22.91	111	102.46	21.54	111	154.98	29.36
8	214	73.97	22.45	211	109.81	20.27	210	168.31	27.96
9	219	66.88	21.05	222	106.21	20.23	222	141.77	28.23
10	46	61.37	26.14	45	110.16	19.72	45	140.22	32.90
11	289	79.02	18.24	284	111.97	19.45	285	159.73	27.39
12	313	60.55	25.83	308	103.12	21.01	308	139.68	32.81
13	94	67.43	25.50	94	100.78	20.57	94	154.77	26.11
14	77	74.49	20.08	76	100.42	22.46	76	153.30	33.31
16	65	71.91	26.57	63	107.48	21.02	62	151.19	31.61
Total	2805	71.07	22.96	2785	106.32	20.79	2779	151.34	31.39

Table 7

Table showing the Mean and Standard Deviation of High School %iles, American Council Test (1952 College Edition) and Cooperative English Test (Form Z, lower level) for:

Junior Colleges

Men

Code	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
C 3	40	49.35	27.05	40	104.77	23.45	40	140.28	25.91
4	44	48.16	26.18	44	90.93	21.60	44	127.93	30.36
5	107	51.04	25.69	107	94.75	22.98	107	134.43	34.87
6	66	61.89	22.05	65	101.29	20.23	65	139.54	31.48
7	79	56.48	26.53	80	94.19	28.22	79	130.47	35.97
9	83	53.51	24.82	79	105.66	23.73	82	137.91	31.33
10	47	48.55	22.43	48	90.77	19.58	46	114.61	26.91
13	89	55.42	24.59	86	94.29	21.89	86	124.65	32.78
14	40	62.28	23.76	40	99.38	21.72	40	128.65	26.73
Total	595	54.20	25.31	589	97.18	23.57	589	131.49	32.67

Women

Code	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
C 3	26	73.81	19.91	26	110.27	22.32	26	166.54	24.58
4	21	68.95	21.78	21	96.33	22.15	21	169.09	22.54
5	75	63.25	26.14	75	91.21	20.93	75	156.52	34.17
6	20	67.15	20.36	20	98.10	23.69	20	161.35	25.06
7	49	69.29	22.13	47	97.64	22.29	46	153.35	32.14
9	37	66.24	25.88	37	98.89	23.90	37	147.00	40.28
10	10	63.70	22.70	10	90.70	21.97	10	140.90	26.10
13	64	68.63	24.42	63	93.54	21.71	62	147.13	33.02
14	16	53.63	29.20	15	102.00	21.58	15	141.93	28.20
Total	318	66.63	24.53	314	96.40	22.72	312	153.85	32.99

Men and Women

Code	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
C 3	66	58.98	27.25	66	106.94	23.17	66	150.62	28.45
4	65	54.88	26.68	65	92.68	21.92	65	141.23	34.04
5	182	56.07	26.57	182	93.29	22.23	182	143.53	36.25
6	86	63.12	21.78	85	100.54	21.14	85	144.67	31.48
7	128	61.38	25.70	127	95.46	26.23	125	138.89	36.33
9	120	57.43	25.83	116	103.50	23.99	119	140.74	34.62
10	57	51.21	23.22	58	90.76	20.01	56	119.30	28.60
13	153	60.94	25.37	149	93.97	21.82	148	134.07	34.70
14	56	59.80	25.73	55	100.09	21.71	55	132.27	27.78
Total	913	58.53	25.73	903	96.91	23.28	901	139.23	34.46

Table 8

Table showing the Mean and Standard Deviation of High School %iles, American Council Test (1952 College Edition) and Cooperative English Test (Form Z, lower level) for:

State Colleges

Men

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
D 1	127	53.83	23.76	129	93.46	23.85	128	117.19	33.43
3	290	48.83	26.32	267	91.40	23.72	267	119.20	35.89
4	71	48.80	25.93	71	93.99	21.61	72	119.25	29.92
5	255	52.50	25.36	251	93.75	22.58	250	120.84	33.18
6	95	51.06	26.23	94	97.90	22.78	94	120.88	30.74
Total	838	50.96	25.69	812	93.43	23.19	811	119.59	33.62

Women

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
D 1	96	71.65	22.38	95	94.03	20.45	95	143.75	29.98
3	358	67.62	23.20	346	97.06	22.34	344	146.49	30.00
4	107	68.20	23.12	109	98.64	20.44	108	149.59	29.57
5	295	67.29	24.05	299	95.18	20.73	298	144.20	28.78
6	86	68.69	24.54	85	99.36	24.50	84	148.55	27.80
Total	942	68.09	23.54	934	96.54	21.70	929	146.02	29.43

Men and Women

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
D 1	223	61.50	24.80	224	93.70	22.47	223	128.50	34.59
3	648	59.21	26.36	613	94.59	23.12	611	134.56	35.40
4	178	60.47	26.07	180	96.81	21.03	180	137.46	33.22
5	550	60.43	25.75	550	94.53	21.61	548	133.54	32.99
6	181	59.44	26.92	179	98.60	23.62	178	133.94	32.47
Total	1780	60.02	26.02	1746	95.10	22.46	1740	133.70	34.11

Table 9

Table showing the Mean and Standard Deviation of High School %iles, American Council Test (1952 College Edition) and Cooperative English Test (Form Z, lower level) for:

High School Juniors

Men

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
20% Sampling	3327	44.19	28.55	3354	89.35	25.84	3346	113.40	38.38

Women

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
20% Sampling	3484	56.12	27.97	3494	88.94	24.99	3481	134.63	36.01

Men and Women

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
20% Sampling	6811	50.29	28.88	6848	89.14	25.41	6827	124.22	38.68

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Research Notes on the Minnesota Counseling Inventory

by
Ralph F. Berdie and Wilbur L. Layton
Student Counseling Bureau, University of Minnesota

This report is a summary of recent research
on the Minnesota Counseling Inventory.

CONTENTS

Research Notes on the Minnesota Counseling Inventory

Ralph F. Berdie and Wilbur L. Layton

Student Counseling Bureau, University of Minnesota

Since its publication, the authors of the Minnesota Counseling Inventory (Berdie & Layton, 1957) have accumulated new information pertaining to the validity of the inventory, its norms, its test-retest reliability, and chance scores. They also have produced an abbreviated form of the inventory to be used for research purposes. The present paper provides this new information for the use of counselors and psychologists who are using or contemplating using the inventory for counseling or research.

Validity of the C (Conformity) Scale

During the standardization of the MCI, counselors, teachers, and principals in two groups of schools were asked to use a nominating rating form to identify students they knew in their schools who were or had been in trouble with the law or in serious trouble with school authorities, who were non-conformists in the sense of exhibiting behavior which may be considered pre-delinquent, and who had caused the school difficulty for these reasons. These students will be called the <u>negative conformity</u> nominees. Students also were nominated who were considered to be most responsible and reliable, those conforming to rules and behavior codes even when they may not agree with them. These latter students ordinarily showed respect to persons in authority, caused little disturbance in school, and in general were considered desirable school citizens. These students will be called here the

positive conformity nominees. Roughly one-half of the students in the standardization groups were from Phoenix, Arizona; the remaining students were from schools throughout the United States. In the original standardization, students in grades 9 and 10 were combined, as were students in grades 11 and 12. The data from students from the Phoenix schools were treated separately from the data for students from other schools in the standardization, and the data for the two sexes also were kept separate.

In addition to the inventory scores for the positive nominee and negative nominee boys and girls in grades 9 and 10 and 11 and 12 from Phoenix and from non-Phoenix schools, scores and profiles also were available for a group of boys ranging in age from 11 through 19 from the Pennsylvania Junior Republic. This is a privately controlled, but in part publicly supported, remedial school for boys with special problems. Many of the boys are referred by juvenile courts and other community agencies. Some can be described as juvenile delinquent and many require special remedial, therapeutic, or protective and preventive services. By no means are all of these boys delinquent or disturbed, but it can be expected that the proportion of such boys in this group would be larger than would be found in most local schools. The Minnesota Counseling Inventory was administered to all of the boys in the school by the staff psychologist.

The first comparison to be described is between the positive conformity nominees and the negative conformity nominees in the standardization group on the seven scales of the MCI. These comparisons were made separately for boys and girls, separately for students in combined

grades 9 and 10 and combined grades 11 and 12, and separately for students in Phoenix schools and non-Phoenix schools. The complete tables are too cumbersome to reproduce here, but copies of the tables can be obtained from the authors.

Table 1

Mean Scores on 7 MCI Scales of Positive Conformity Nominees and Negative Conformity Nominees, Combining Sexes and Phoenix and non-Phoenix Schools

	Grades 9-10			Grades 11-12		
Scale	Pos. N = 42	Neg. N = 47	Sig. of diff.	Pos. N = 80	Neg. N = 50	Sig. of diff.
Family Relationships	7.74	10.55	*	9.00	11.72	*
Social Relationships	18.19	22.77		17.35	16.96	
Emotional Stability	12.45	15.15	*	13.62	14.10	
Conformity	11.52	15.74	***	11.34	14.10	***
Reality	10.07	14.21	*	10.19	12.22	
Mood	11.69	14.96	**	11.76	11.30	
Leadership	10.76	12.85		11.39	11.58	

* = .01 ≥ .05 level of significance

** = .001 ≥ .01

*** = .001

Table 1 compares the means for the positive and negative conformity groups for grades 9 and 10 and grades 11 and 12 separately, but combining the sexes and the students from the Phoenix and non-Phoenix schools. In grades 9 and 10 the positive nominees had a mean score on the conformity scale of 11.52, as compared to the mean score of the negative nominees of 15.74. This difference is statistically significant beyond

the .001 level. Corresponding means for students in grades 11 and 12 are 11.34 and 14.10, a difference again significant beyond the .001 level. In this table the differences on the conformity scale are the only ones that reach this level of significance. In grades 9 and 10, however, five of the seven differences are statistically significant beyond the .05 level; in grades 11 and 12, two of the differences are statistically significant.

For the subgroups by grade, location, and sex, a total of 56 comparisons were made between pairs of means. Of these 56 differences, 13 were significant at or beyond the .05 level of probability, seven significant between .05 and .01, three significant between .01 and .001, and three significant beyond .001. Two of these latter and most significant differences are found on the conformity scale, one found on the reality scale. The C scale significantly differentiated the positive and the negative nominee groups for both groups of ninth and tenth grade boys and the non-Phoenix eleventh and twelfth grade girls. The family relationships scale differentiated the non-Phoenix ninth and tenth grade boys and the non-Phoenix eleventh and twelfth grade girls; the social relationships scale the non-Phoenix ninth and tenth grade boys and the Phoenix eleventh and twelfth grade boys; the emotional stability scale the non-Phoenix eleventh and twelfth grade girls; the reality scale the Phoenix and non-Phoenix ninth and tenth grade boys and the non-Phoenix eleventh and twelfth grade girls; and the mood scale the non-Phoenix ninth and tenth grade boys and the Phoenix eleventh and twelfth grade boys.

Thus, when standardization groups used in the development of the C scale and corresponding cross-validation groups are compared upon the basis of the C scale and the other scales, the nominated groups are differentiated to a greater extent on the relevant C scale than they are on the other scales. Insofar as the non-Phoenix groups originally provided a cross-validation group rather than an original validity group, the results here bear evidence that the groups nominated to identify conformity actually possess this deviate trait, in both positive and negative directions, to a somewhat greater extent than they are differentiated upon the basis of other traits measured by the MCI. In light of the rather high correlations between some of the MCI scales, a large difference in an analysis such as this could not be expected, but the evidence presented here does suggest some MCI scales have a differentiating power.

Mean Scores of Junior Republic Boys

In the analysis of scores for the boys from the Pennsylvania Junior Republic, the problem arose as to whether these boys should be grouped according to age or according to grade in school. The range of age in any one grade tended to be greater than the range found in most other schools, and there was also the question as to whether reading skill related to age and grade placement might not influence scores on the MCI. It was finally decided that in the analysis of mean scores, the boys would be classified according to age; in the analysis of profiles, they would be classified according to grade placement. Figures 1 and 2 present the profiles of mean scores for Pennsylvania Junior Republic

Figure 1

Profiles of Mean MCI Scores of 28 Fourteen

and 53 Fifteen Year Old Junior Republic Boys

Name _____

High School _____ City _____

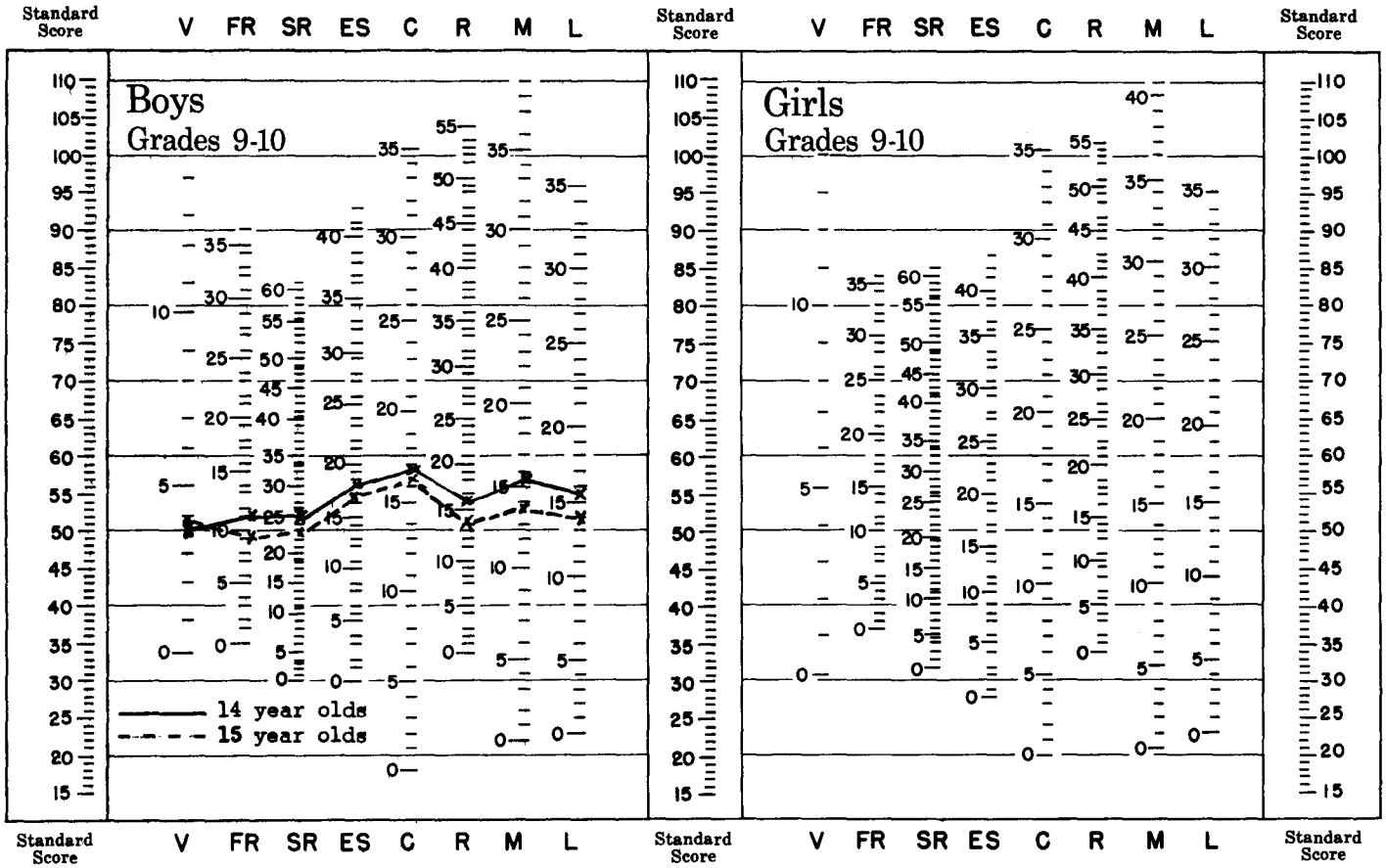
Grade _____ Age _____ Sex _____ (M or F)

Date Tested _____

MINNESOTA COUNSELING INVENTORY

PROFILE SHEET

9-10



Raw Score ___ ___ ___ ___ ___ ___ ___ ___

Standard Score ___ ___ ___ ___ ___ ___ ___ ___

Raw Score ___ ___ ___ ___ ___ ___ ___ ___

Standard Score ___ ___ ___ ___ ___ ___ ___ ___

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57-242S

Figure 2

Profiles of Mean MCI Scores of 59 Sixteen

and 46 Seventeen Year Old Junior Republic Boys

Name _____

High School _____ City _____

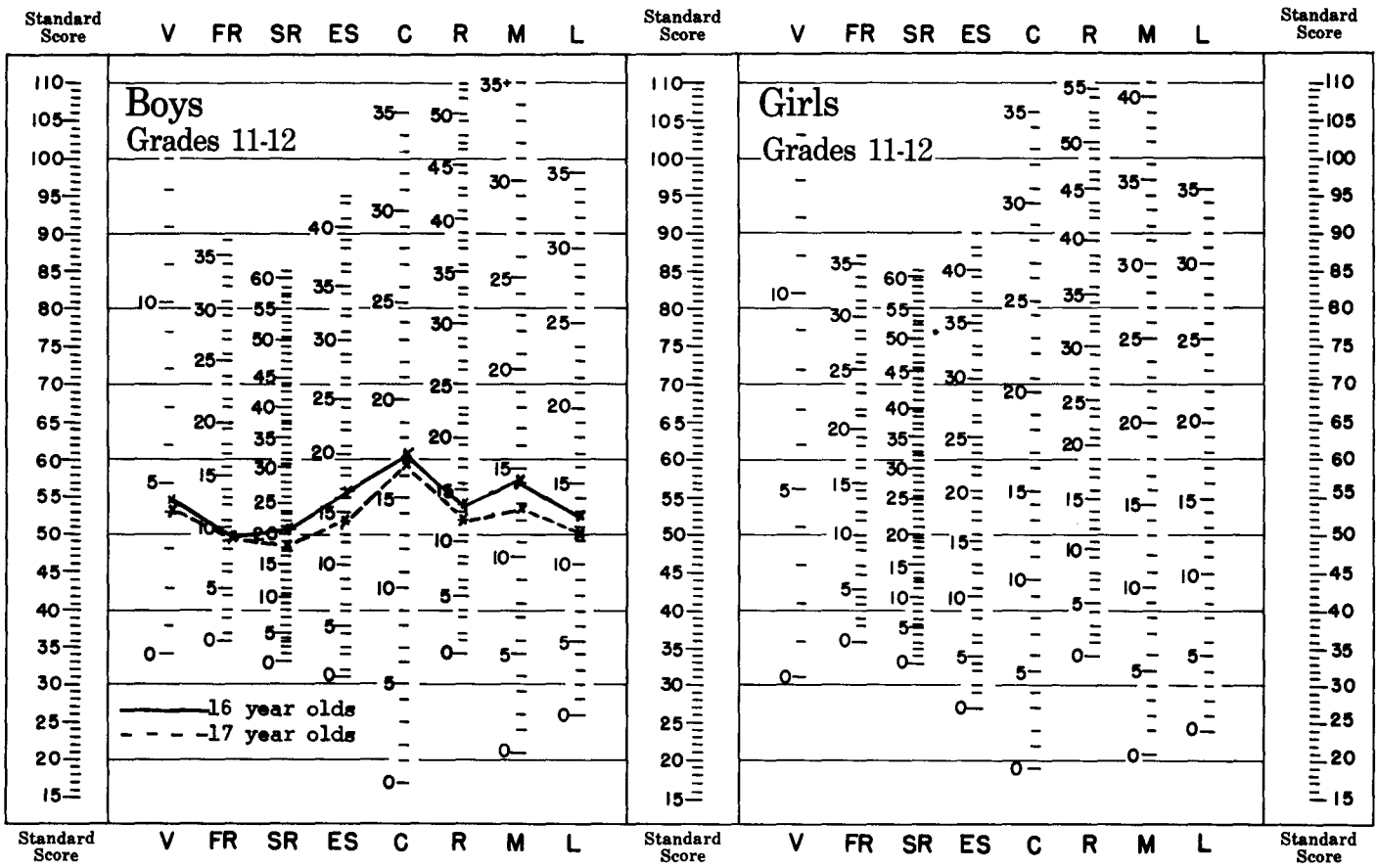
Grade _____ Age _____ Sex _____ (M or F)

Date Tested _____

MINNESOTA COUNSELING INVENTORY

PROFILE SHEET

11-12



Raw Score ____ ____ ____ ____ ____ ____ ____ ____

Standard Score ____ ____ ____ ____ ____ ____ ____ ____

Raw Score ____ ____ ____ ____ ____ ____ ____ ____

Standard Score ____ ____ ____ ____ ____ ____ ____ ____

boys who are 14, 15, 16, and 17 years old. The norms used for the 14 and 15 year old boys are the ninth and tenth grade norms contained in the manual; the norms used for the 16 and 17 year old boys are the eleventh and twelfth grade norms from the manual. All four groups obtained their highest score on the C scale. The shapes of all four profiles tend to be similar, with a peak on the C scale, a secondary peak on the M scale, and scores close to the average on the FR, SR, and L scales. These mean scores leave little doubt that the mean MCI scores of residents in the Junior Republic are quite different from those of the norm group.

Pattern Analyses

In the manual of the MCI the statement is found: "In discussing the validity of an instrument such as the Minnesota Counseling Inventory, one must consider the validity of the individual scores and the validity of combination of scores, or profiles. As yet, no evidence is available concerning the validity of various combinations of MCI scores. This absence must be recognized as being of extreme importance because persons using the MCI will inevitably make use of the profile. Single scores will be used as sources of information regarding individuals, but combinations of scores, discrepancies between scores earned by a single individual, and the patterning of scores all will eventually be used by counselors to make broader generalizations regarding the nature of the student's personality." In this paper is presented some information concerning the profile validity of the MCI.

First is presented a description of the method used in coding

profiles.

Each scale is assigned a number:

V - 1	C - 5
FR - 2	R - 6
SR - 3	M - 7
ES - 4	L - 8

For a given profile, the code numbers for the scales are arranged in order with the code number for the scale with the highest standard score first, the code number for the second highest standard score second, etc. When two or more scales have the same standard scores, the code numbers for these tied scores are underlined. When the code numbers have been arranged in the proper order, after the code number for scales with scores of 70 or above, a triple prime (′′′) is entered. After the code numbers of scales where scores are between 65 and 69, a double prime (′′) is entered. After those code numbers of scales where scores are 55 through 64, a single prime (′) is entered. Then after code numbers where the scores are 40 or below, an exponent of zero (^{0}) is entered.

For example, with the following scores:

V - 53	C - 73
FR - 51	R - 59
SR - 67	M - 53
ES - 56	L - 38

The coded profile will be: 5′′′, 3′′, 6′, <u>17</u>, 28^{0}.

The profiles for the boys in the Pennsylvania Junior Republic, grades 9-12, were coded, as were the profiles for the Phoenix and non-Phoenix boys and girls in grades 9-12 in both the negative and positive nominated conformity group. All of the coding was done disregarding the

V score, or code number one. The reason for omitting the V score was that the answer sheets for the Phoenix and non-Phoenix groups had not been scored for this particular scale and the authors considered that the information obtained from scoring this would not compensate for the effort involved. Thus, the first code number to appear in a code for a profile represented the scale on which was received the highest standard score, omitting the V scale.

Table 2 shows the number and per cent of male positive nominees, negative nominees, and Junior Republic boys with each code number appearing in first place and in second place. In this table, the boys from grades 9 through 12 are combined. In the nominated positive group, 15 per cent had a code that began with 5, as compared to 40 per cent of the negative nominated group and 47 per cent of the Junior Republic group. Of the positive nominated group, 40 per cent had codes beginning with scales two or three, as compared to 24 per cent of the negative nominated group and 15 per cent of the Junior Republic group. Considering the first two code numbers, 17 or 26 per cent of the 66 nominated good group had number 5 either the first or second place for the code, as compared to 30 or 57 per cent of the 53 nominated negative group, and 80 or 68 per cent of the 118 Junior Republic boys. Thus, when the positive and the negative nominated groups of boys are compared, combining the Phoenix and non-Phoenix groups in grades 9 through 12, the Chi square of 11.31 for this comparison is significant beyond the .05 level.

Of the 66 male positive nominees, none had a code number that began

Table 2

Number and Per Cent of Male Positive Nominees, Negative Nominees, and Junior Republic Boys with each Code Number Appearing in Either First or Second Place (Grades 9-12, Phoenix and non-Phoenix Combined)

	Positive Nominees		Negative Nominees		Junior Republic	
	N	%	N	%	N	%
First Code Number						
2	13	20	6	11	11	9
3	13	20	7	13	7	6
4	9	14	4	8	13	11
5	10	15	21	40	55	47
6	7	11	8	15	9	8
7	9	14	5	9	13	11
8	5	8	2	4	10	8
Total	66		53		118	
Second Code Number						
2	8	12	11	21	15	13
3	4	6	2	4	8	7
4	11	17	8	15	21	18
5	7	11	9	17	25	21
6	7	11	10	19	10	8
7	17	26	7	13	27	23
8	12	18	6	11	12	10
Total	66		53		118	

with 547 or 457. Of the 53 negative nominees, one had such a code number, and of the 118 Junior Republic boys, 14 had such code numbers. The Chi square of this difference is 12.3, significant beyond the .01

level. Thus, the evidence for the boys indicates that the profile differences are in the expected direction.

The evidence for the women is not as clear cut. Of the positive nominees, 27 per cent in grades 9 and 10 and 15 per cent in grades 11 and 12 had code numbers that began with 5, as compared to 21 per cent of the negative nominees in grades 9 and 10 and 20 per cent in grades 11 and 12. Of the positive nominees, 36 per cent had code number 5 in either the first or second position, as compared to 41 per cent of the negative nominees. None of the differences in code numbers for the women were statistically significant, and there was no one cluster that tended to be a predominant pattern in either the negative or the positive group.

The profile analysis for the Pennsylvania Junior Republic boys suggested that in this group were several rather specific subgroups, differentiated upon the basis of the MCI profile. For instance, in addition to the 547-457 group, 19 persons were found with a 25-52 combination in first position. Another substantial group had a 57-75 combination, and eight persons grouped themselves with an 83-38 combination. These clustering of profiles suggest that we have in this Junior Republic population a group whose problems centered largely around family relationships, another group whose problems centered around direct relationships with others, and perhaps another group that might be called an emotionally disturbed group. On the basis of any given individual's profile, hypotheses could be constructed concerning the nature of his problem and then additional information solicited in order to confirm or reject the hypotheses.

Group and Norm Differences

In developing norms for a personality inventory such as the Minnesota Counseling Inventory, the problem inevitably arises as to how specific to make the norm groups. For the Minnesota Multiphasic Personality Inventory, no more than a separate norm is provided for each of the sexes. Users of the MMPI are well aware that college students obtain different kinds of scores from adults in the norm group, and the scores earned by high school students are even more different. Users are expected to apply their knowledge of these differences in their interpretation of the scores. In presenting norms for the MCI, the decision was made to have not only separate sex norms but two groups of grade norms, one set of norms for grades 9 and 10 and one set for grades 11 and 12. Whether to do this or not depends upon considerations in addition to the existence of statistically significant differences among groups, for with sufficiently large groups such statistically significant differences may be found even when the size of the differences have little practical significance.

An attempt was made by plotting the ogives for the eight MCI scales for various grade and sex groups to determine the practical significance of differences among these groups.

For all scales, distributions were plotted separately for the four norm groups included in the manual, i.e., boys in grades 9 and 10, girls in grades 9 and 10, boys in grades 11 and 12, and girls in grades 11 and 12. In addition, separate distributions were plotted for men from Minnesota colleges and women from Minnesota colleges. Distributions

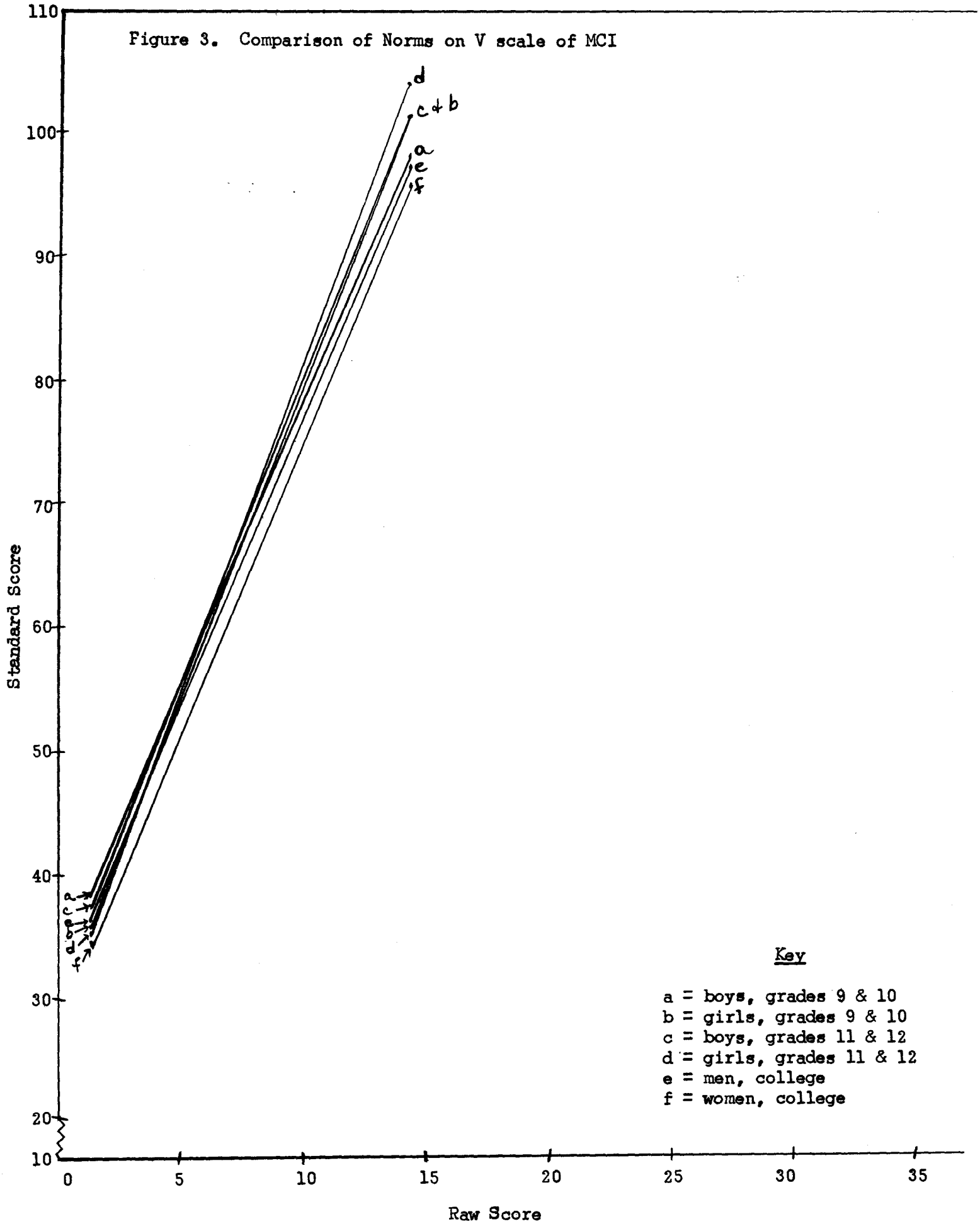


Figure 3. Comparison of Norms on V scale of MCI
Standard Score
Raw Score
110
100
90
80
70
60
50
40
30
20
10
0
5
10
15
20
25
30
35
d
c & b
a
e
f
Key
a = boys, grades 9 & 10
b = girls, grades 9 & 10
c = boys, grades 11 & 12
d = girls, grades 11 & 12
e = men, college
f = women, college

Figure 4. Comparison of Norms on FR scale of MCI

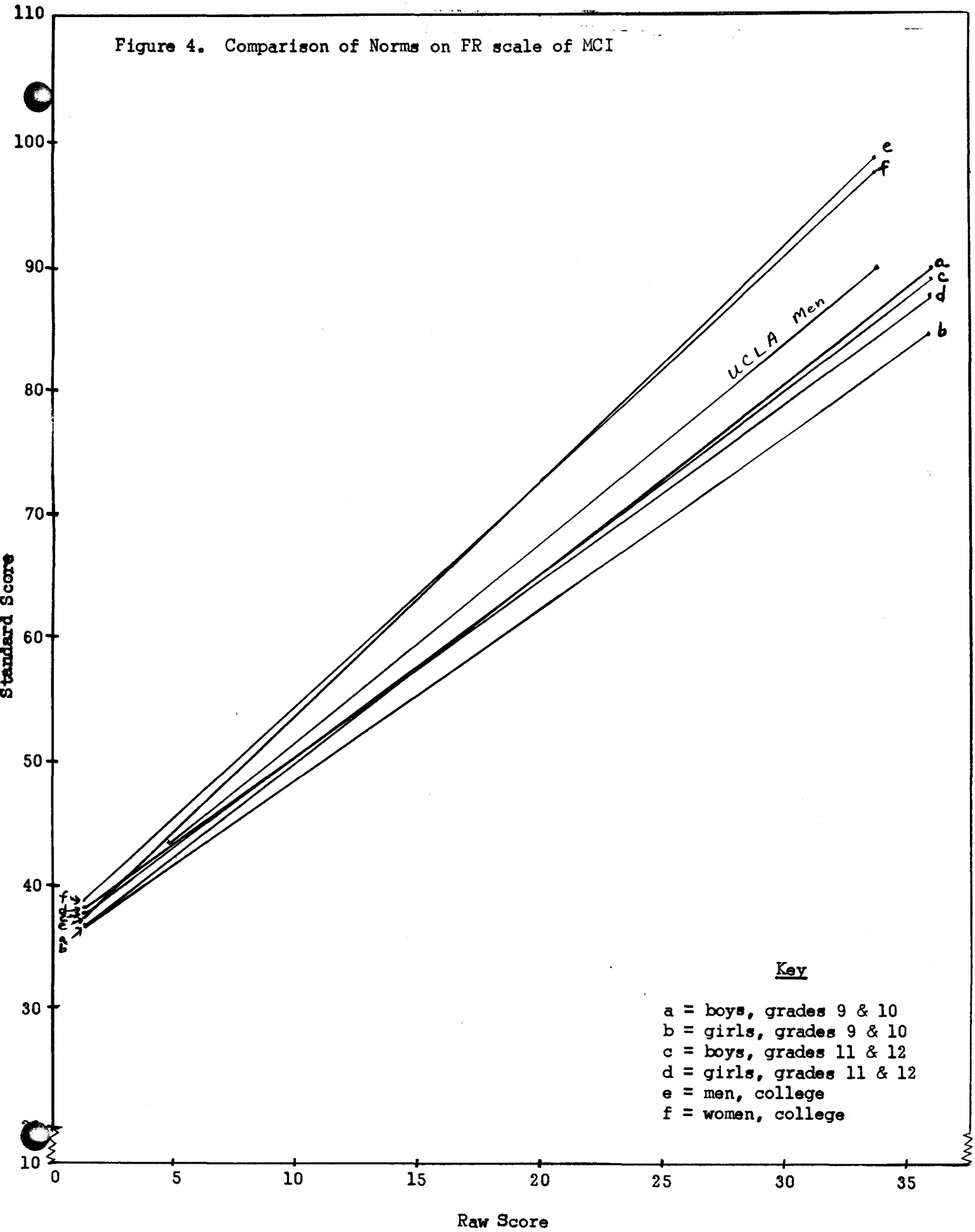


Figure 5. Comparison of Norms on SR scale of MCI

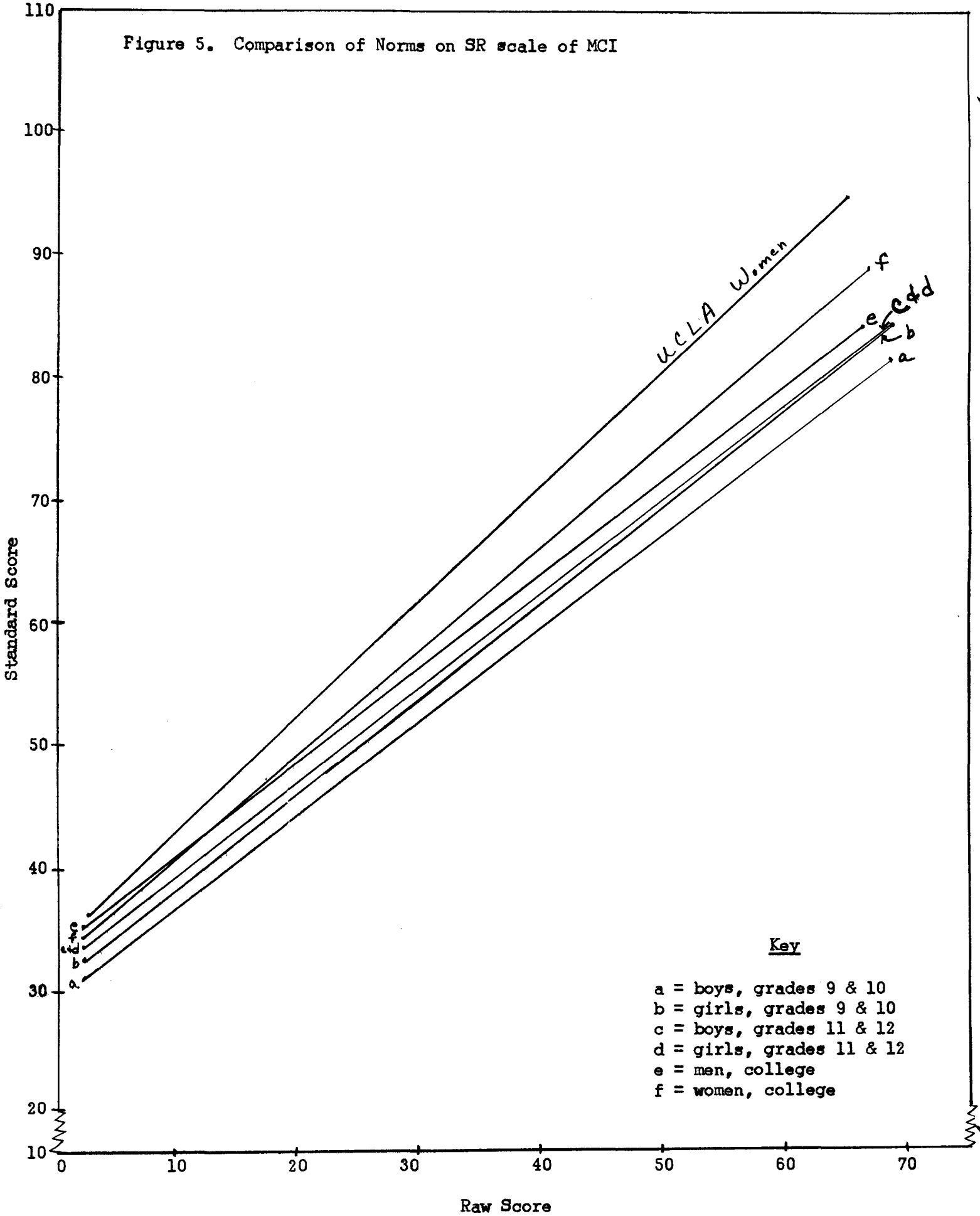


Figure 6. Comparison of Norms on ES scale of MCI

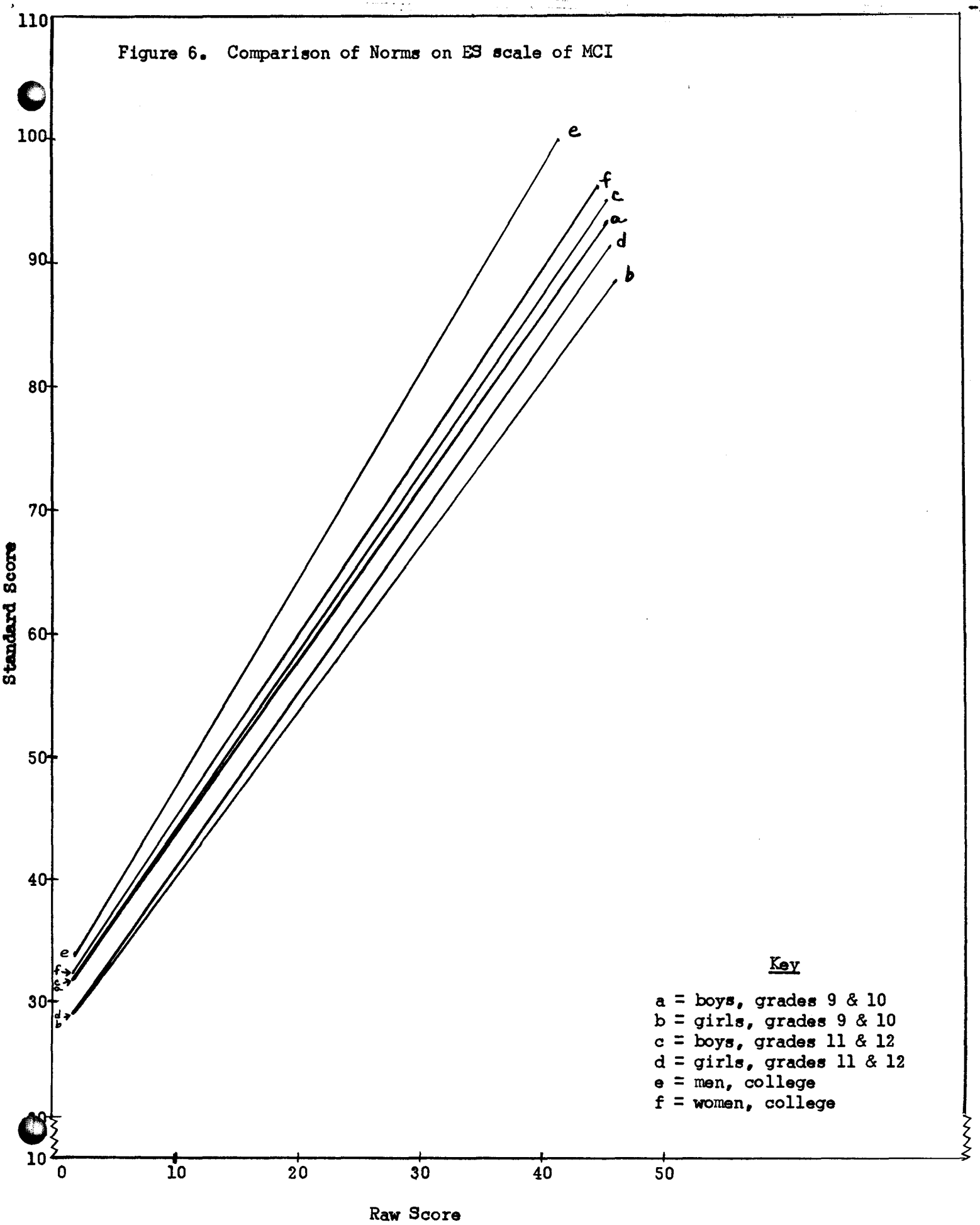
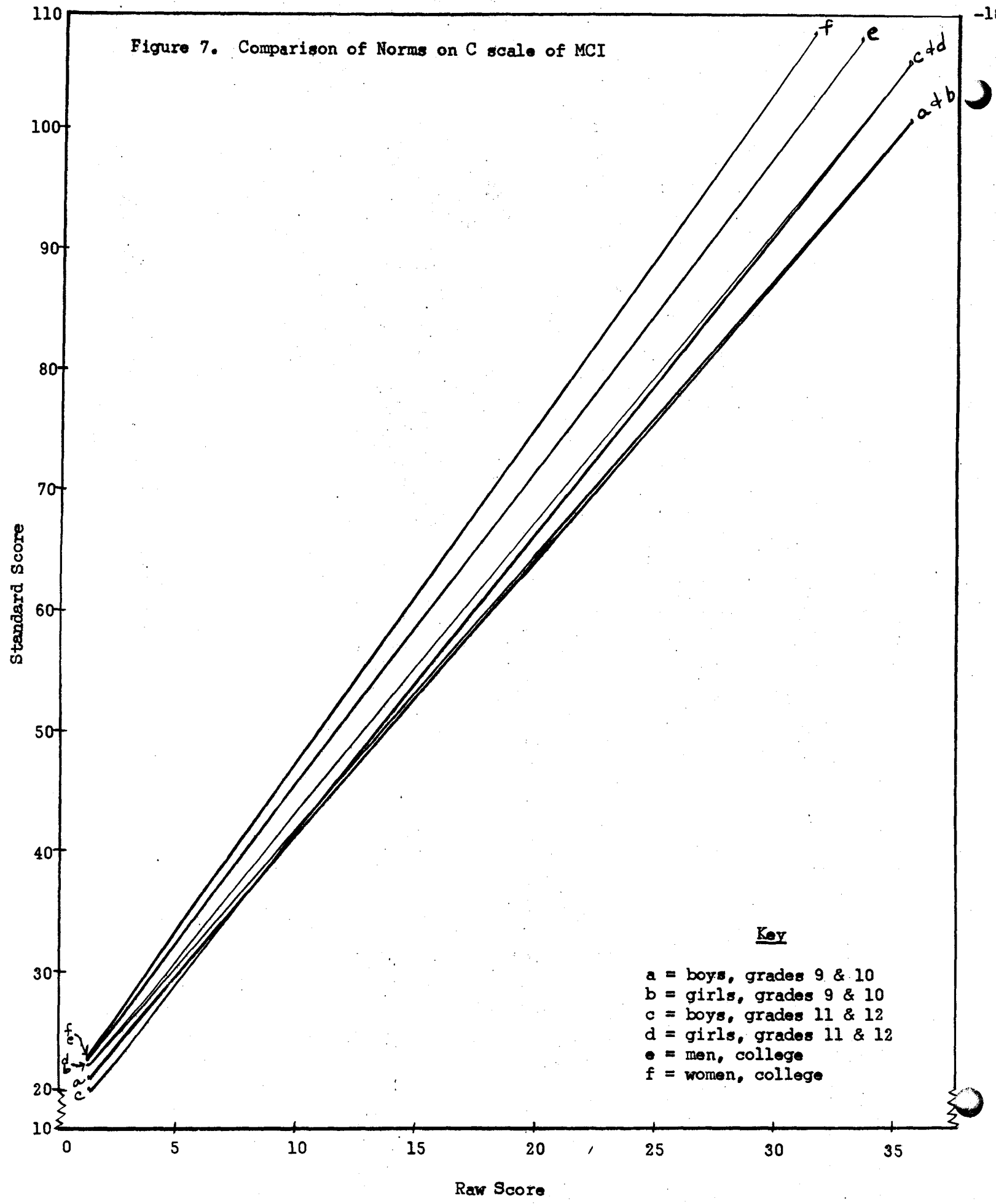


Figure 7. Comparison of Norms on C scale of MCI



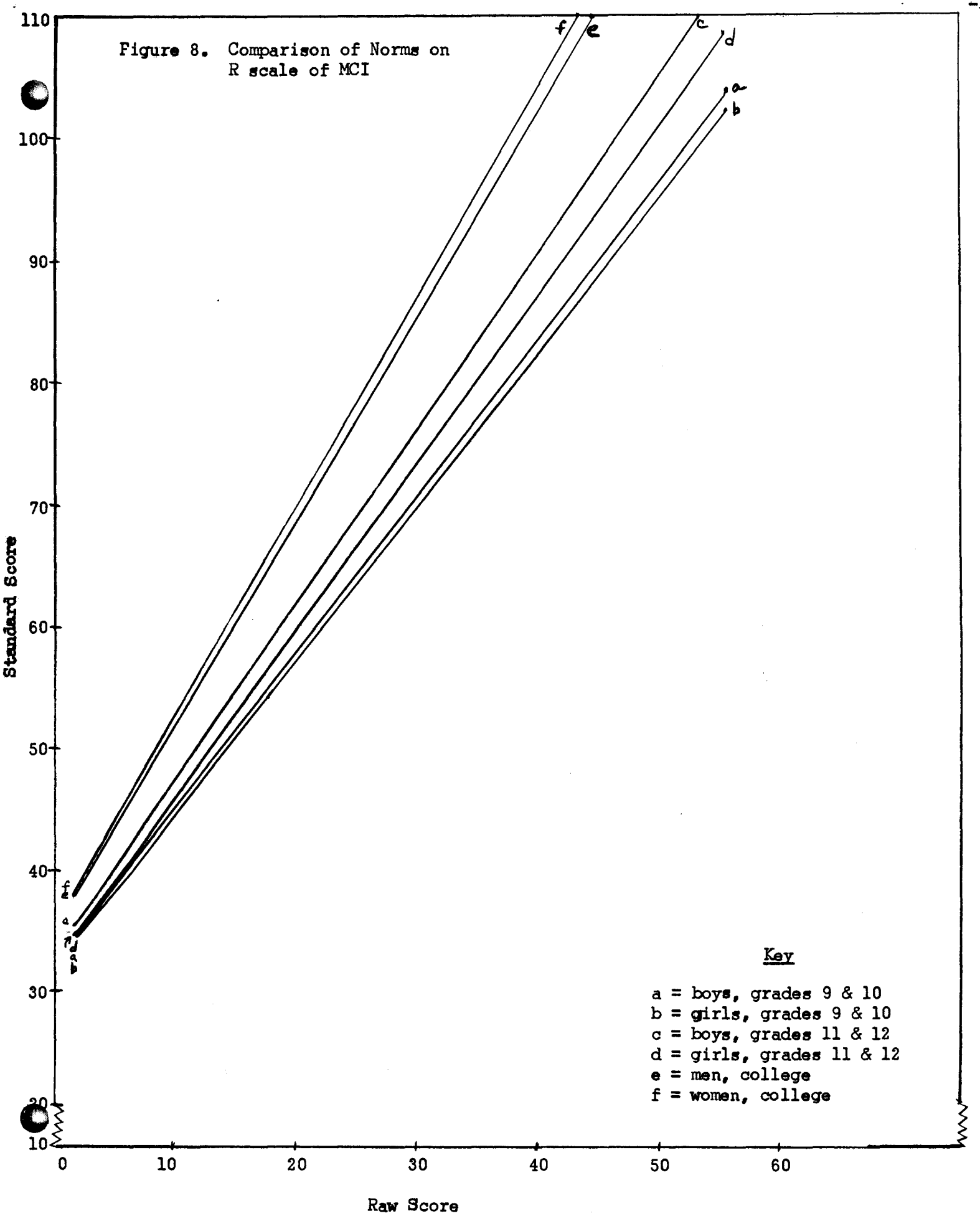


Figure 8. Comparison of Norms on R scale of MCI

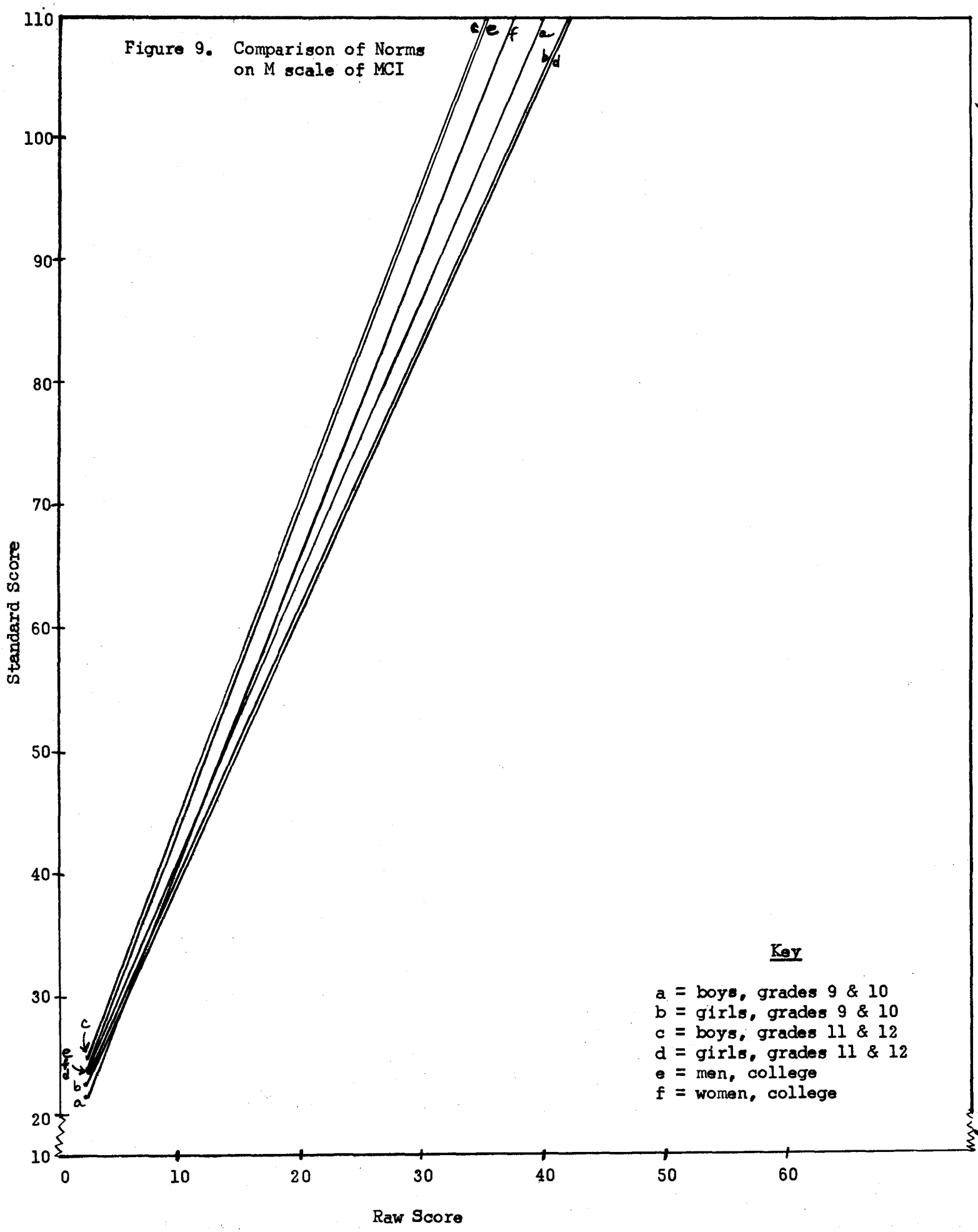
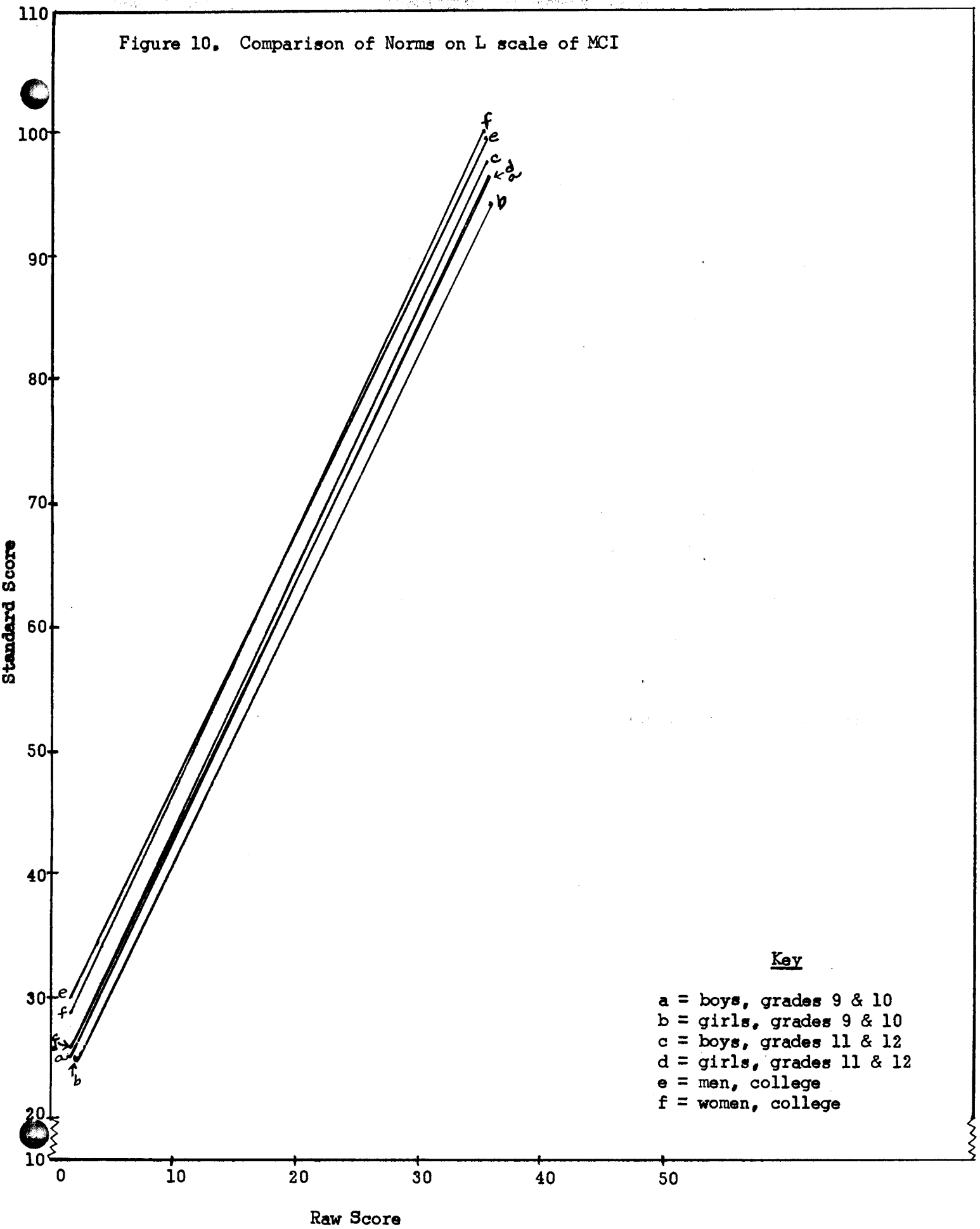


Figure 9. Comparison of Norms on M scale of MCI

Figure 10. Comparison of Norms on L scale of MCI



for those scales on which men or women from the University of California, Los Angeles, differed from the Minnesota college men and women were also plotted on the appropriate figures. The distributions on the V scale tended to be so similar that little basis can be found for using different norms. At the extremes of the distribution, for a given raw score a standard score difference of five will be found among groups, but in no instance is a larger difference found.

For the FR scale, some of the differences are quite large. The high school groups tend to be quite similar, with the main difference found between the boys and the girls. The college groups, however, tend to be quite different from the high school groups, and a given raw score of 20, for instance, can correspond to a standard score of 63 for girls in grades 9 and 10 and 73 for college men. If one accepts the raw score as an indication of the family relationships of these persons, the college persons have much better family relationships than do the high school students.

On the SR scale, the differences are somewhat similar to those found on the FR, and again the charts suggest that one might combine the high school groups but that the college and the high school groups are quite different. This also is found for the Emotional Stability scale.

The boys and girls tend to be somewhat similar on the C scale, but the grade differences are apparent here, particularly at the higher end of the distribution. The scores for the boys and girls in grades 9 and 10 are higher than for the boys and girls in grades 11 and 12, and similarly, the scores for college men and women are even lower. Similar

differences are found on the R scale, with the difference between high school and college students exceeding the differences found among the high school groups. The distributions for the M scale and the L scale are similar when one compares the grade groups and the sex groups. On the M scale, the sex differences tend to be somewhat larger than the grade differences, although none of these differences are large; on the L scale the grade differences tend to be somewhat larger, but again the differences are very small, and one might well argue on this scale for using similar norm groups for all grades and sexes.

On the basis of these comparisons, the evidence suggests that for at least some of the scales different norm groups are desirable and appropriate, both in terms of sex and grade differences, so that this evidence supports the original decision to use specific norms.

The norms included in the manual are the high school norms. College norms are presented here. The norms should be considered tentative due to the restricted sampling of colleges involved. It is hoped that these norms will be helpful to present users of the MCI but that more adequate and representative data will later be available.

In order to obtain the largest, most stable, and most representative norm group, all available Minnesota college data were pooled. These data in part were analyzed by Fred Brown and incorporated in his thesis (Brown, 1958).

This combined group consisted of 6507 freshmen, 3236 men and 2271 women. The distribution of students by colleges is shown in Table 3. All students were tested as freshmen in the fall of 1956 or 1957 in the

Table 3

Composition of Norm Group by College

College	Men	Women	Total
All Liberal Arts	1055	1246	2301
B-02	156	131	287
B-04	302	357	659
B-05	314	418	732
B-11	283	340	623
All Catholic	280	275	555
B-10	280	-	280
B-14	-	275	275
All University of Minnesota	1901	750	2651
Agriculture, Forestry, and Home Economics	571	272	843
General College	1131	378	1509
Science, Literature, and the Arts	199	100	299
Total - All Colleges	3236	2271	6507

course of regular testing programs for entering freshmen. All colleges are located in the state of Minnesota and, with the exception of General College, which has a two-year program, all are four-year colleges. Included were students from the state University, from co-educational, non-Catholic liberal arts colleges, and from Catholic colleges.[1]

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[1] We would like to express our appreciation to the following Minnesota colleges: Carleton, Gustavus Adolphus, Hamline University, St. Mary, St. Olaf, and St. Teresa.

The norm group cannot be considered as representative of college students in general. All colleges included are located in Minnesota and draw a majority of their students from that state. Even within the state the group is not entirely representative. No students from junior colleges, teachers colleges, or engineering schools were included. The Arts College of the University is under-represented and the College of Agriculture, Forestry and Home Economics and the General College over-represented.

The inclusion of a large number of General College students and the lack of engineering students suggests two areas in which the men's group differs from a representative college group. First, the norm group is probably below average in scholastic aptitude as General College students generally rank in the lower third of their high school classes and score low on academic aptitude tests, while engineering students are among the most academically select of all college groups. Second, Brown (1948) has shown that on the Minnesota Multiphasic Personality Inventory General College students obtain higher scores than other college groups. Thus, the norm group for men probably has higher mean raw scores than a representative college sample would.

These considerations probably do not pertain to the women's norm group since here General College is not over-represented and the number of women engineers excluded is negligible.

Sex Differences

To determine if sex differences in MCI scores were present, critical ratios were computed between mean scores of the men and women.

The results are summarized in Table 4. Five of the eight scales showed significant differences at the .001 level of confidence. The FR, SR, and R scales had non-significant critical ratios. Men obtained higher mean scores on three scales (FR, SR, C) but only on one scale (C) was the difference statistically significant. Women scored higher on the other four scales (only R being non-significantly higher) and on the V scale. Raw score differences between sexes ranged from .07 points on R to 2.07 points on ES.

As only two scales, ES and M, had mean differences greater than one raw score point, a single norm group combining scores across sexes might seem appropriate. For several reasons, however, norm groups were constructed for each sex separately. First, the high level of statistical significance of the results indicated that sex differences were truly present on the majority of the scales.

Second, the composition of the two norm groups probably underemphasized the true sex differences. Although the women's norm group is fairly representative, several factors in the composition of the men's group (see above) tended to raise the mean scores of the men's group above those of a representative sample. This in turn would decrease the differences between sexes.

High School-College Differences

Critical ratios were computed between the mean scores of college freshmen and the means of the eleventh and twelfth grade norm groups. Analyses were done separately for men and women and are summarized in Tables 5 and 6. Fifteen of the sixteen critical ratios were significant

Table 4

Means and Standard Deviations of College Norm Groups and Critical Ratios Between Sexes

	Men (N = 3236)		Women (N = 2271)			
MCI Scale	Mean	SD	Mean	SD	Mean Diff	C.R.
V	3.92	2.20	4.32	2.20	.40	6.77***
FR	7.26	5.42	7.09	5.57	.17	1.10
SR	17.80	11.83	17.28	10.98	.52	1.66
ES	10.72	6.10	12.79	6.42	2.07	12.08***
M	11.24	3.99	12.55	4.06	1.31	11.94***
C	11.46	3.72	10.72	3.43	.74	7.64***
R	7.95	5.94	8.02	5.84	.07	.47
L	10.64	4.86	11.34	4.61	.70	5.40***

* = .01 ≥ .05 level of significance

** = .001 ≥ .01

*** = .001

at the .001 level, only M for men being non-significant. These results indicate that college freshmen differ from high school students.

On all scales but one, for both men and women, the high school group scored consistently higher than the corresponding college group. Only on V did the high school group obtain lower mean scores. The raw

Table 5

Critical Ratios Between High School and College Male

Norm Groups for the MCI

	High School (N = 1247)		College (N = 3236)			
MCI Scale	Mean	SD	Mean	SD	Mean Diff	C.R.
V	3.44	2.09	3.92	2.20	.48	6.80***
FR	9.58	6.78	7.26	5.41	2.32	10.85***
SR	19.92	11.75	17.80	11.84	2.12	5.41***
ES	12.79	6.69	10.72	6.10	2.07	9.53***
M	11.37	3.95	11.24	3.99	.13	.97
C	12.88	3.95	11.46	3.72	1.42	10.90***
R	10.90	6.93	7.95	5.94	2.95	13.28***
L	11.70	4.82	10.64	4.86	1.06	6.60***

* = .01 $\geq$ .05 level of significance

** = .001 $\geq$ .01

*** = .001

Table 6

Critical Ratios Between High School and College Female

Norm Groups for the MCI

	High School (N = 1256)		College (N = 2271)			
MCI Scale	Mean	SD	Mean	SD	Mean Diff	C.R.
V	3.75	1.95	4.32	2.20	.57	8.01***
FR	9.73	7.09	7.09	5.57	2.64	11.37***
SR	19.55	11.79	17.28	10.98	2.27	5.61***
ES	15.70	6.89	12.79	6.42	2.91	12.25***
M	13.20	4.60	12.55	4.06	.65	4.21***
C	12.39	4.03	10.72	3.43	1.67	12.33***
R	11.47	7.38	8.02	5.84	3.45	14.29***
L	12.56	4.86	11.34	4.61	1.22	7.29***

* = .01 $\geq$ .05 level of significance

** = .001 $\geq$ .01

*** = .001

score differences on most scales were larger than the differences between college men and women. With the exception of V and M, all differences exceeded one raw score point and half of the differences were greater than two points.

The magnitude of the differences indicates that on the MCI college freshmen women are more similar to college freshmen men than they are similar to high school junior-senior girls. Similarly, freshmen men are more similar to freshmen women than similar to high school boys. Inspection of the high school means showed the same situation: high school boys and girls are more similar to each other than similar to college freshmen of the same sex.

Standard Scores

Standard scores were derived for each of the eight MCI scales, separately for men and women. Raw scores were transformed to a standard score scale with a mean of 50 and a standard deviation of 10. The transformation did not alter the shape of the distribution of raw scores. The raw to standard score conversion tables are given in the appendix.

Standard scores were computed for all raw scores from zero through the maximum score on the scale or to a standard score of 110, whichever was lower. A standard score of 110 is six standard deviations above the mean and should include all but an exceedingly rare case.

The means and the variances of the Minnesota college norm groups were compared to the means and variances of 500 men and 577 women who were tested as entering freshmen at the University of California, Los Angeles, in 1958. These figures are shown in Table 7. Among the men,

Table 7

Comparison of Mean Scores and Variances on MCI

for Minnesota and California College Freshmen

Scale	Minnesota $\bar{X}$	Minnesota SD	California $\bar{X}$	California SD	t	F
(Men)	N = 3236		N = 500			
V	3.92	2.20	3.91	2.18		
FR	7.26	5.42	8.78	6.24	**	**
SR	17.80	11.84	17.04	12.12		
ES	10.72	6.10	10.52	6.53		*
C	11.47	3.72	11.46	3.57		
R	7.95	5.94	8.32	5.89		
M	11.24	3.99	11.83	4.28	**	*
L	10.64	4.86	10.64	5.02		
(Women)	N = 2271		N = 577			
V	4.32	2.20	4.46	1.99		**
FR	7.09	5.57	8.51	6.40	**	**
SR	17.28	10.98	15.69	10.68	**	
ES	12.79	6.42	11.58	6.69	**	
C	10.72	3.43	11.15	3.42	**	
R	8.02	5.84	7.69	5.98		
M	12.55	4.07	12.94	4.68		**
L	11.34	4.61	10.72	4.66		

** = significant beyond the .01 level

* = significant beyond the .05 level

the mean FR score and the variance for the California men were higher than those for the Minnesota men, with a difference significant beyond the .01 level. The same was true for the M scale. Among the women, significant mean differences were found on the FR scale, the SR scale,

the ES scale, and the C scale, with the California women obtaining higher scores on the FR and C scales and the Minnesota women obtaining higher scores on the other two. The interpretation of these differences, for the most part, is somewhat difficult insofar as the variances also were different. About all that can be concluded here is that on the L and the R scales the Minnesota and the California populations seem to be similar with the suggestion that on the other scales some differences might well be found. It should be noted here that the mean differences tend to be quite small and that the fact of their significance is in large part due to the size of the groups studied. For instance, on the C scale the Minnesota women obtained a mean score of 10.7, the California women a mean score of 11.1. The difference corresponds to a difference in standard scores that is quite negligible. Figure 11 presents the mean profiles for both sexes from the two states.

Test-Retest After One Year

In the manual for the MCI, test-retest correlations for boys and girls are presented with intervals between testings of one month and three months. Data now are available for 51 men and 54 women tested as high school juniors and one year later retested as high school seniors. The test-retest correlations for these groups are presented in Table 8, along with the odd-even reliability coefficients and the one-month and three-month test-retest coefficients included in the manual.

For the men, the difference between the three-month and one-year test-retest coefficients appears to be greatest for the Emotional Stability scale and the Leadership scale, and for the women the difference appeared

Figure 11

Comparison of Mean Profiles of

Jewett's UCLA Freshmen and Brown's Minnesota Freshmen

Name _____

High School _____ City _____

Grade _____ Age _____ Sex _____ (M or F)

Date Tested _____

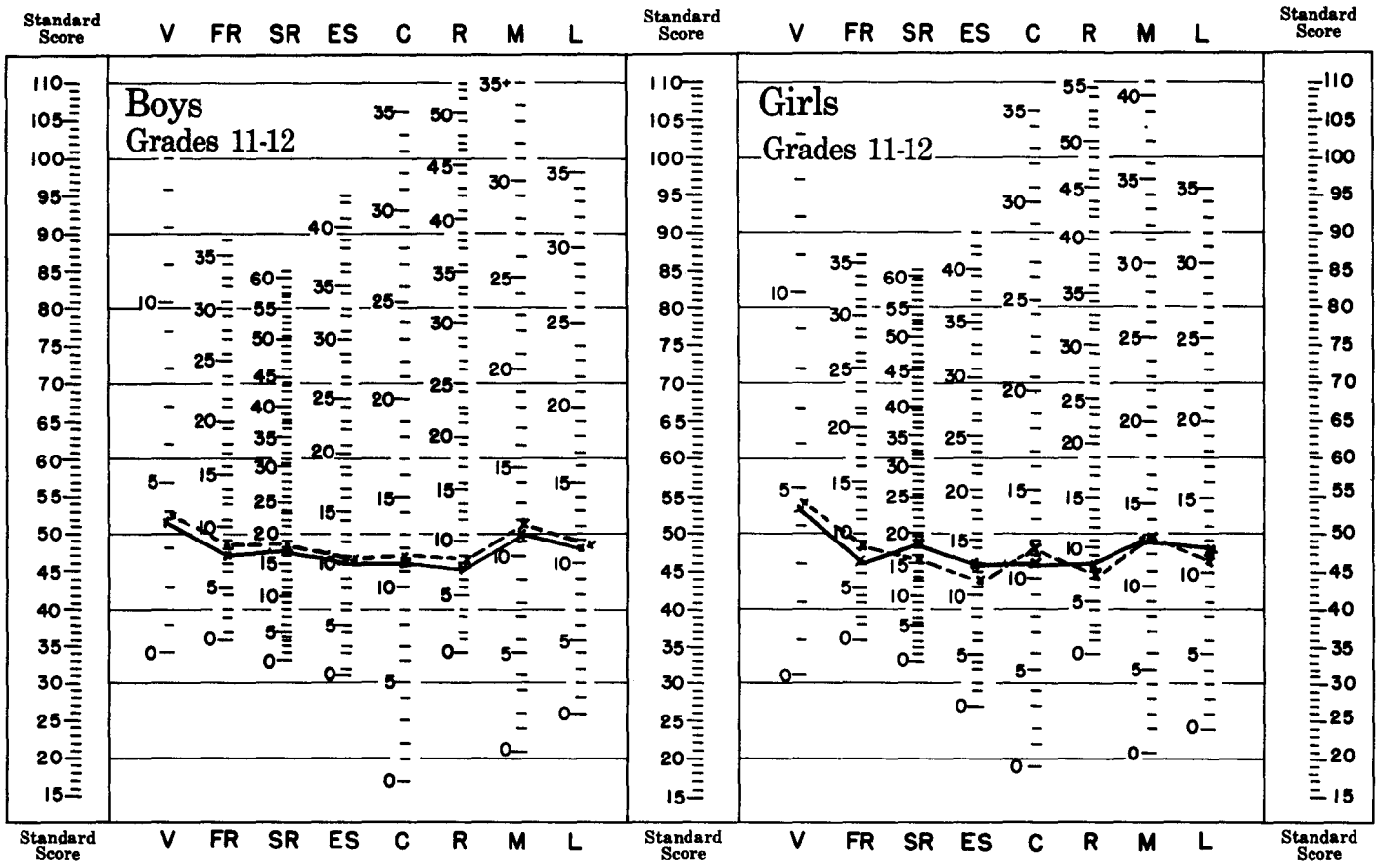
MINNESOTA COUNSELING INVENTORY

PROFILE SHEET

11-12

——— Minnesota M = 3236, F = 2271

- - - - UCLA M = 500, F = 577



Raw Score ____ ____ ____ ____ ____ ____ ____ ____

Standard Score ____ ____ ____ ____ ____ ____ ____ ____

Raw Score ____ ____ ____ ____ ____ ____ ____ ____

Standard Score ____ ____ ____ ____ ____ ____ ____ ____

Table 8

Reliability Coefficients for the Diagnostic Scales

of the Minnesota Counseling Inventory (MCI)

	odd-even			1 month			3 months			1 year		
Scale	r	mean	SD	r	mean*	SD	r	mean	SD	r	Mean	SD
(Boys)	N = 200			N = 115			N = 121			N = 51		
FR	.86	8.9	6.3	.84	10.2	6.8	.81	9.6	6.8	.80	9.2	6.5
SR	.94	18.9	11.1	.86	19.0	10.9	.82	23.0	11.8	.68	26.4	12.2
ES	.81	12.7	6.7	.77	12.9	6.1	.81	13.2	6.2	.35	12.7	6.0
C	.56	12.6	3.9	.73	12.3	3.8	.71	13.2	4.3	.75	11.2	3.9
R	.88	10.7	7.1	.77	9.8	6.1	.76	10.8	6.4	.55	11.2	7.4
M	.66	11.4	4.3	.75	11.8	4.1	.56	11.4	4.0	.58	12.0	4.3
L	.73	11.3	4.7	.78	11.4	4.6	.71	12.7	4.5	.53	14.4	4.9
(Girls)	N = 200			N = 107			N = 118			N = 54		
FR	.93	10.5	7.9	.93	10.7	7.4	.73	9.9	7.1	.70	8.4	5.6
SR	.95	20.7	12.5	.84	17.5	11.7	.86	21.8	11.7	.76	21.5	11.5
ES	.81	16.9	6.9	.83	15.1	6.9	.82	15.6	6.9	.65	14.4	6.9
C	.68	12.1	4.4	.76	12.7	3.8	.78	11.9	4.1	.48	11.9	3.9
R	.85	12.4	7.3	.83	11.3	7.7	.80	11.1	7.4	.55	10.3	7.0
M	.63	13.3	4.3	.77	13.6	4.9	.74	13.3	4.5	.39	13.8	3.9
L	.74	13.5	4.9	.73	11.6	4.7	.81	13.4	4.8	.61	13.0	4.1

*The means and standard deviations are those of the first administration. All students were in grade 12 at the time of second testing; odd-even students in grades 11 and 12.

greatest for the Conformity scale and the Mood scale. These test-retest correlations suggest that many of the basic personality patterns related to the MCI are relatively stable, but that the changes that do occur are so great and so large that for any given individual, estimating a person's present status upon the basis of test scores obtained one year or even

three months ago is a hazardous occupation. Essentially, the profile on the MCI reflects the status of the individual at the time he took the test, and a comparison of two profiles reflects changes that have occurred during the interim.

Short Form of the MCI

A special research project made it desirable to attempt to extract from the complete MCI a short form that could be used for research purposes. The authors emphasize here that this short form is not to be used in individual counseling, and is not generally available for research purposes. Inquiries about its use should be directed to the authors.

On the basis of the information about the items in four of the MCI scales, those items were selected that appeared to be the most efficient items. These were the items that differentiated best among the various criterion groups and that showed up best in the tests of internal consistency during the standardization of the items. From each of the FR, SR, C, and R scales, 20 of the best items were selected and answer sheets were scored on both these items and the full scale. The mean scores on the complete scales and the short scales are presented in Table 9, along with the correlations between the long scales and the short scales. The correlations suggest that what is being measured in the short scales is essentially similar to what is being measured in the long scales, and the short scales well might fill the purposes for which they were developed.

Table 9

Comparison of MCI Scores Obtained From Standard Scoring Scales and Short Scales, Each Based on 20 Selected Items for FR, SR, C, and R*

	Scale			
	FR	SR	C	R
Mean score on long scale	9.64	22.16	13.00	12.16
SD on long scale	6.55	10.86	3.79	7.86
Number of items on long scale	36	61	35	55
Mean score on short scale	5.78	7.67	6.09	3.63
SD on short scale	3.79	4.38	2.72	2.95
Number of items on short scale	20	20	20	20
r between long and short scales	.88	.96	.85	.91

*Scores from answer sheets of 100 senior men from ten Minnesota high schools tested in the fall of 1958.

Profiles of Chance Scores on the MCI

In interpreting an MCI profile, one may wonder how that profile differs from one consisting of chance scores. Two methods were used for determining chance scores on the MCI. First, insofar as each item has two possible responses, and insofar as each response receives a weight of one, assuming independence of the items the mean chance score for any given scale consists of one-half of the number of total items

scored for that scale. Thus, with a maximum score of 36 on the FR scale, the chance score will be 18. The solid lines shown in Figure 12 present the standard score profiles for the chance scores based upon one-half of the number of items scored.

A second method for deriving a chance profile was employed through tossing dice. One die was tossed and if the number appearing was an odd number, the "True" response for an item was marked on an answer sheet; if an even number appeared, the "False" response was marked. In Figure 12 the dotted line presents the profile obtained through this method.

Both methods for obtaining a chance score demonstrate that the chance profile is a deviate profile, and there is small probability that a student will obtain a normal or a below normal profile through marking the answer sheet by chance.

Figure 12

Profiles Obtained by Chance

Name _____

High School _____ City _____

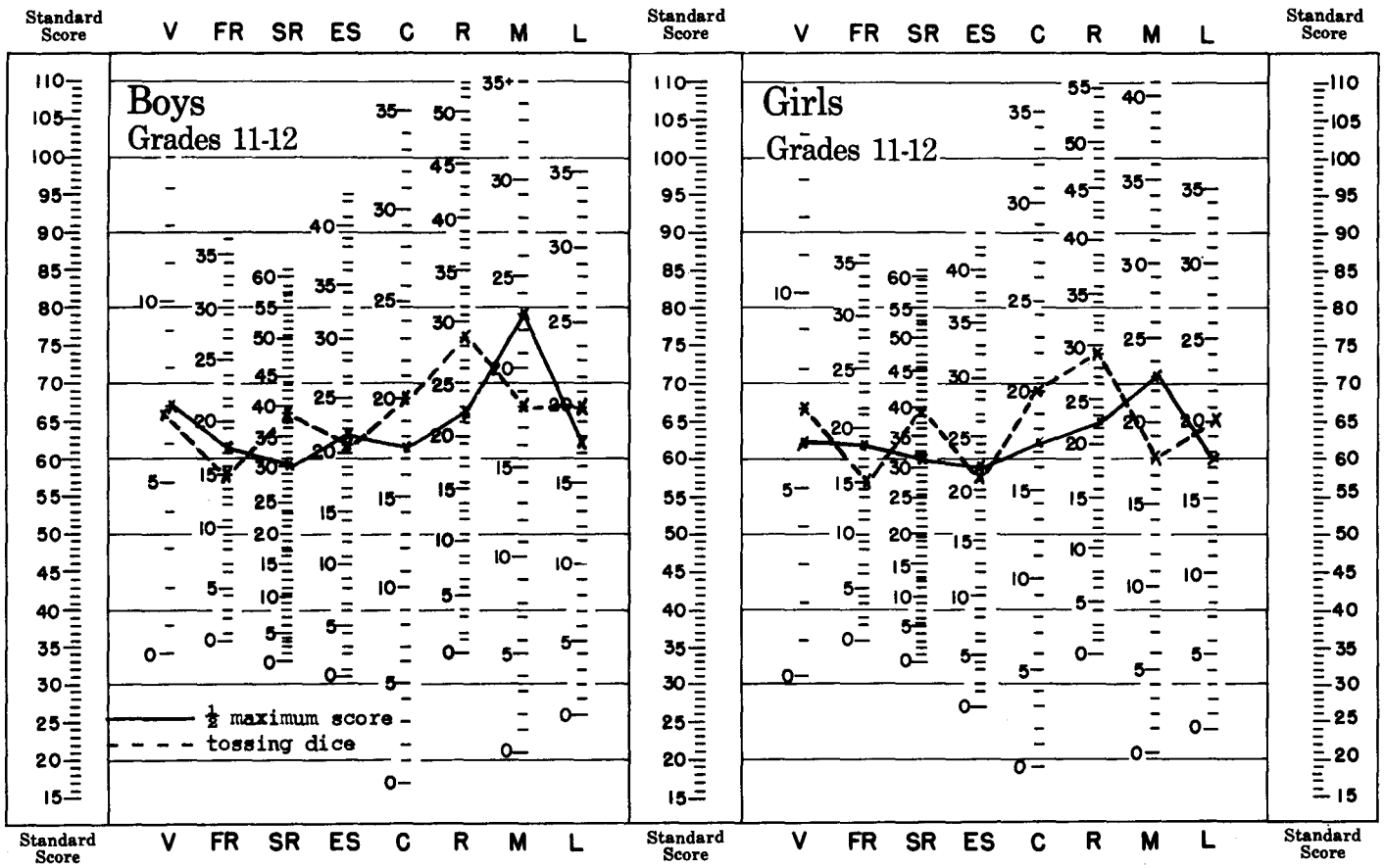
Grade _____ Age _____ Sex _____ (M or F)

Date Tested _____

MINNESOTA COUNSELING INVENTORY

PROFILE SHEET

11-1



	V	FR	SR	ES	C	R	M	L
Raw Score	7	15	39	21	20	29	18	20
Standard Score	7	18	30.5	21.5	17.5	22.5	23	17.5

	V	FR	SR	ES	C	R	M	L
Raw Score								
Standard Score								

?	7 V	15 FR	39 SR	21 ES	20 C	29 R	18 M	20 L

NAME__________ Last __________ First __________ Middle __________ SEX__________ M or F AGE__________ Yrs. Mos.

SCHOOL__________ CITY AND STATE__________ GRADE OR CLASS__________ DATE__________

MINNESOTA COUNSELING INVENTORY

T = even; F = odd

T F 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 — T F 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195

T F 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 — T F 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210

T F 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 — T F 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225

T F 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 — T F 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240

T F 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 — T F 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255

T F 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 — T F 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270

T F 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 — T F 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285

T F 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 — T F 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300

T F 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 — T F 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315

T F 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 — T F 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330

T F 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 — T F 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345

T F 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 — T F 346 347 348 349 350 351 352 353 354 355

39

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Tentative College Freshman Norms for the Minnesota Counseling Inventory
Standard Score Equivalents of Raw Scores
Male College Freshmen

T-score	Raw score V	FR	SR	ES	M	C	R	L
110					35			
109							43	
108						33		
107					34		42	
106							41	
105					33	32		
104							40	
103		36		43				
102					32	31	39	
101		35		42			38	
100				41	31	30		35
99		34					37	
98		33		40				34
97					30	29	36	
96	14	32		39			35	33
95				38	29			
94		31				28	34	32
93				37				
92		30			28	27	33	31
91	13			36			32	
90		29		35				30
89					27	26	31	
88		28		34				29
87	12		61	33	26		30	
86		27	60			25		28
85		26	59	32			29	
84			58		25	24	28	27
83		25	57	31				
82	11		56	30	24		27	26
81		24	55-54			23		
80			53	29			26	25
79		23	52		23		25	
78	10		51	28		22		24
77		22	50	27	22		24	
76			48-49			21		
75		21	47	26			23	23
74		20	46		21		22	
73	9		45	25		20		22
72		19	44	24	20		21	
71			43					21
70		18	41-42	23		19	20	
69	8		40		19		19	20
68		17	39	22		18		
67			38	21	18		18	19
66		16	37					

T-score	Raw score V	FR	SR	ES	M	C	R	L
65			35-36	20		17	17	18
64	7	15	34	19	17		16	
63			33					17
62		14	32	18	16	16	15	
61		13	31					16
60			30	17			14	
59	6	12	28-29	16	15	15	13	15
58			27					
57		11	26	15	14	14	12	14
56			25					
55	5	10	24	14			11	13
54			22-23	13	13	13		
53		9	21				10	12
52			20	12	12		9	
51		8	19			12		11
50	4	7	18	11			8	
49			17	10	11	11		10
48		6	15-16				7	
47			14	9	10		6	9
46	3	5	13	8		10		
45			12				5	8
44		4	11	7	9			
43			9-10			9	4	
42		3	8	6	8		3	7
41	2		7	5		8		
40		2	6				2	6
39			5	4	7			
38		1	4			7	1	5
37	1		2-3	3	6			
36			1	2				4
35						6		
34				1	5			3
33						5		
32					4			2
31								
30						4		1
29					3			
28								
27					2	3		
26								
25						2		
24					1			
23								
22						1		
21								

Tentative College Freshman Norms for the Minnesota Counseling Inventory
Standard Score Equivalents of Raw Scores
Female College Freshmen

	Raw score							
T-score	V	FR	SR	ES	M	C	R	L
110					37		43	
109						31		
108					36		42	
107							41	
106						30		
105					35		40	
104								
103					34	29	39	
102		36						
101							38	35
100		35			33	28	37	
99								34
98		34			32	27	36	
97		33		43				33
96				42			35	
95		32			31	26	34	32
94	14			41				
93		31			30		33	31
92				40		25		
91		30		39			32	
90			61		29			30
89	13	29	60	38		24	31	
88		28	59	37	28		30	29
87			58					
86		27	57	36	27	23	29	28
85	12		56	35				
84		26	55				28	27
83			53-54	34	26	22	27	
82		25	52					26
81			51	33	25		26	
80	11	24	50	32		21		25
79		23	49				25	
78			48	31	24			
77		22	47	30		20	24	24
76	10		46		23		23	
75		21	45	29				23
74			44	28		19	22	
73		20	42-43		22			22
72			41	27			21	
71	9	19	40	26	21	18	20	21
70		18	39					
69			38	25			19	20
68		17	37		20	17		
67	8		36	24			18	19
66		16	35	23	19			

	Raw score							
T-score	V	FR	SR	ES	M	C	R	L
65			34			16	17	
64		15	33	22			16	18
63			32	21	18			
62	7	14	30-31			15	15	17
61		13	29	20	17			
60			28	19		14	14	16
59		12	27				13	
58	6		26	18	16			15
57		11	25	17		13	12	
56			24		15			14
55		10	23	16			11	
54			22		14	12		13
53	5	9	21	15			10	
52		8	19-20	14			9	
51			18		13	11		12
50		7	17	13			8	
49	4		16	12	12			11
48		6	15			10	7	
47			14	11			6	10
46		5	13	10	11			
45			12			9	5	9
44	3	4	11	9	10			
43		3	10	8			4	8
42			8-9			8		
41		2	7	7	9		3	7
40			6				2	
39	2	1	5	6	8	7		
38			4	5			1	6
37			3					
36			2	4	7	6		5
35	1		1	3				
34					6			4
33				2		5		
32				1				3
31					5			
30						4		2
29					4			
28								1
27					3	3		
26								
25						2		
24					2			
23								
22					1	1		
21								

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The Biennial Survey of Scholastic Aptitude of Minnesota College Freshmen

by
Edward O. Swanson and Ralph F. Berdie
Student Counseling Bureau

This report is based upon entering freshmen to 37 Minnesota colleges for the fall of 1958 who were tested as juniors in the 1953-1957 State-Wide College Testing Programs

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Introduction

Surveys of scholastic aptitude in Minnesota have been made since 1930 and reports are comparable since 1937. These surveys, based on information about high school and college students obtained through the State-Wide Testing Program, provide a picture of the college aptitude and high school achievement of high school graduates and freshmen in various colleges and types of colleges in Minnesota. High school counselors, teachers, and administrators and college counselors, deans, presidents, admissions officers and faculties thus have available a continuing inventory of the abilities and achievements of their students.

The current report on 1958 entering college freshmen is the third Survey of Scholastic Aptitude in which the test results are based on entering freshmen who were tested in their junior year in high school. The two earlier studies based on high school juniors were for entering freshmen of 1954 and 1956. The same tests have been used during this five-year span, 1953 through 1957 - the 1952 College Edition of the American Council on Education Psychological Examination (ACE) and the Cooperative English Test, Form Z, Lower Level (Coop. Eng.). This will be the last Survey in which the results will be based on the 1952 College Edition of the ACE. The entering freshmen of 1959 will have taken the Minnesota Scholastic Aptitude Test as juniors in high school.

The Background of the Study

In Minnesota, the Association of Minnesota Colleges sponsors the State-Wide Testing Program for high school juniors. The program is administered by the Student Counseling Bureau of the Office of the Dean of Students at the University of Minnesota. At the end of the junior year the high schools calculate the high school rank (HSR) for the first three years of high school (two years if it is a three-year senior high school). The scores of the two tests and the high school rank for each student are reported by the Student Counseling Bureau to the high schools and to the members of the Association of Minnesota Colleges. Results are used by the high schools for counseling and guidance purposes and by the colleges for admission and classification purposes as well as for counseling and guidance once the student is admitted.

The current report is based on entering freshmen in Minnesota colleges who were tested as juniors in high school. The entering freshmen include high

school graduates of the five-year period 1954 through 1958. Each group of these graduates was tested a year and a half prior to graduation from high school while they were juniors. The largest group graduated from high school in 1958.

Procedure of the Study

In September of 1958, each college was asked to furnish alphabetical lists of all entering freshmen separately for men and women, indicating the name of the student's high school and the year of high school graduation. The Student Counseling Bureau, taking from its files the high school percentile ranks and scores on the ACE and Cooperative English Test, then determined the means and standard deviations by men, women, and by total for each individual college, and for types of colleges. In addition to determining these statistics for the entering freshmen in each college, the Student Counseling Bureau also drew an approximate 20 per cent sample of the juniors tested in the previous year (1956-57) and calculated means and standard deviations for these high school juniors by men, women, and total. Tables 4 through 9 at the end of this report contain these summary statistics.

Completeness of Data

Of the approximately 560 public and private high schools in Minnesota, in 1956-57, 538 or 96 per cent cooperated with this program and tested their juniors. As the few schools which do not cooperate in the testing are generally quite small high schools, close to 99 per cent of the juniors in the state of Minnesota in a given year, are tested. In 1958 there were 39 Minnesota colleges, both public and private*. Of these, 37, or 95 per cent, furnished lists of their entering freshmen to the Student Counseling Bureau.

Tables 1 to 3 show the per cent of entering freshmen graduating from Minnesota high schools** for whom the test scores and high school rank were available. Incomplete coverage is due to: 1) Missing test scores or high school rank, and 2) Only juniors being included who were tested in 1953 through 1957 (graduating seniors of 1954 through 1958). The data are more complete for women than for men, being available for 95 per cent of the women and 90 per cent of the men. For the entire group, data are available for 92 per cent of the entering freshmen who graduated from Minnesota high schools.

When one considers high schools participating in the testing program, colleges cooperating in the survey, and per cent of entering freshmen for whom data are available, the survey is a rather complete and comprehensive report of entering freshmen in Minnesota colleges, and as such provides comparable statistics to previous Scholastic Comparison Studies.

Results

Figures 1 to 3 show a graphic comparison of selected entering freshmen groups as well as the 20 per cent sample of high school juniors. The heavy portion

* Seven University of Minnesota colleges, including the Duluth Campus are included.

** For the University of Minnesota total enrollments were used, as the number of non-Minnesota entering freshmen is small, approximately four per cent.

of each bar constitutes approximately two-thirds of the scores for the entering freshmen, both male and female, for that group. The indentation in the heavy portion of the bar indicates the mean of the group. For example, on Figure 2 for the ACE, two-thirds of the high school juniors obtain raw scores between 64 and 116 (scale on upper part of graph) and the group has a mean of 90. Referring to the percentile scale at the bottom of Figure 2, this same two-thirds of the high school juniors ranges from the 4-80 percentile on entering freshmen norms. On the same ACE figure, the University's College of Science, Literature, and the Arts, has a mean raw score of 113 and two-thirds of its entering freshmen obtain scores in the raw score range of 96-131. On the norms for entering freshmen, these raw scores correspond to the 33 and 96 percentiles, respectively.

The results, taken as a whole, conform to the usual pattern found in the previous Surveys. Women consistently have better grades and markedly higher English scores (see Tables 4 through 9). This holds true for practically every individual college as well as for each type of college. On the ACE, few significant sex differences occur, and when they do occur they are not consistently in favor of one sex.

Mean scores for the individual colleges vary markedly. On the ACE, some colleges have mean scores placing them in the upper one-third of all Minnesota freshmen and some colleges have mean scores placing them in the lower one-third of Minnesota freshmen. (Note the indentations on the large bars in Figure 2 and refer the indentation to the percentile scale on the bottom of the figure.) However, even with the great variation of mean scores, reference to the standard deviations show that every college has some students at the very top of the distribution and some at the very bottom of the distribution for each of the three measures, HSR, ACE, and Coop. Eng.

There are also marked differences in mean scores among the college types. However, some of the mean scores for students in junior colleges exceed some of the mean scores for the four-year liberal arts colleges. In general, differences of the mean scores among individual colleges are greater than are the differences among mean scores for type of institution.

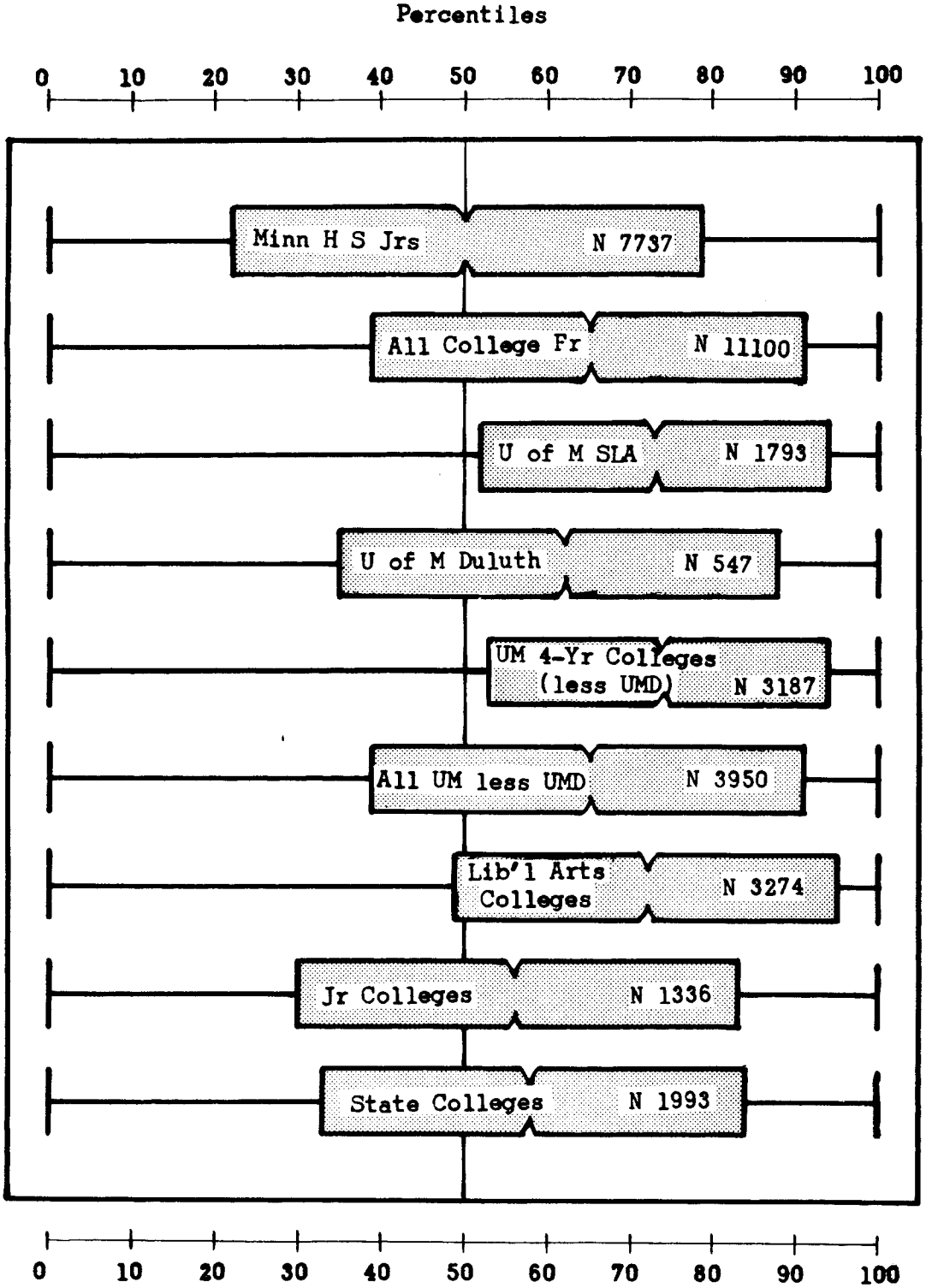
Trends

In the Biennial Survey of Scholastic Aptitude for entering freshmen of the fall of 1956, Swanson and Berdie* reported on a large-scale summary of the State-Wide Testing Programs to that date. The summary indicated that over a period of more than two decades there was no significant change either upward or downward in the quality of the entering freshmen in Minnesota colleges as indicated by their mean HSR and their mean scholastic aptitude test scores. The data for the entering freshmen of 1958 do not change this general trend. In examining the five-year period 1954-1958 in which the same scholastic aptitude test was given, some individual colleges seem to have changed significantly upward, i.e., have higher average HSR and scholastic aptitude scores in 1958 than previously. However, if one examines the average HSR and ACE scores by type of college, there seems to be, on the whole, consistency of these averages over the five-year period.

* Swanson, E.O. & Berdie, R.F., The Biennial Survey of Scholastic Aptitude of Minnesota College Freshmen, Research Bulletin of the Office of the Dean of Students, University of Minnesota, Vol. 1, No. 1, January 1959.

Figure 1

Variability of High School Percentiles of College Freshmen who were graduated from Minnesota High Schools and who entered Minnesota Colleges September, 1958.

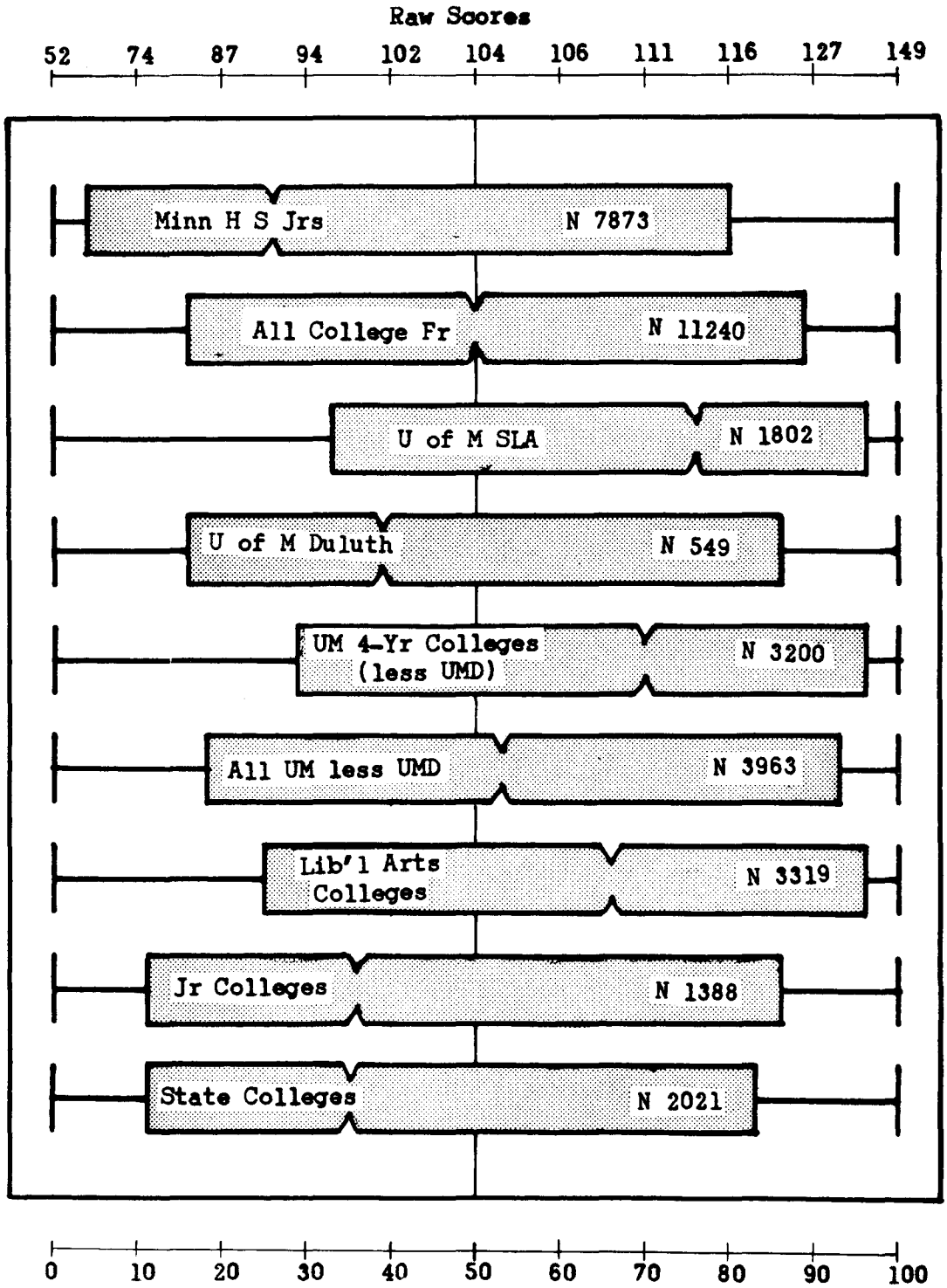


The range of each group can extend from the first to the hundredth percentile. The wide portion of each group represents the middle two-thirds of freshmen of the group. The indentation in the wide portion is the mean of the group.

Variability of Scores on ACE Psychological Examination. 1952 College Edition

Figure 2

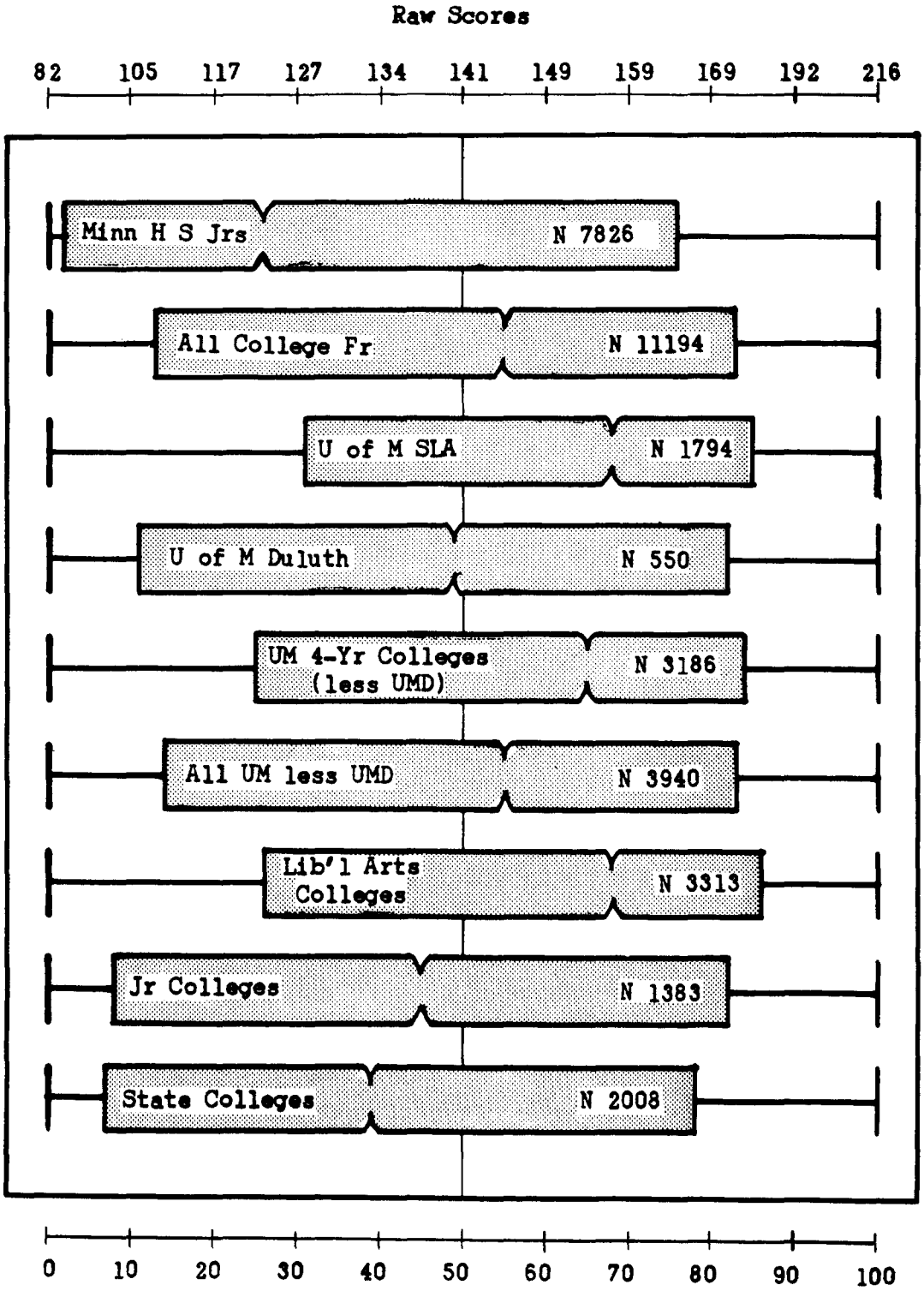
College Freshmen who were graduated from Minnesota High Schools and who entered Minnesota Colleges September, 1958.



The range of each group can extend from the first to the hundredth percentile. The wide portion of each group represents the middle two-thirds of the group. The indentation in the wide portion is the mean of the group.

Figure 3

Variability of Cooperative English Test, Form Z, Lower Level, Total Score. College Freshmen who were graduated from Minnesota High Schools and who entered Minnesota Colleges September, 1958.



The range of each group can extend from the first to the hundredth percentile. The wide portion of each group represents the middle two-thirds of the group. The indentation in the wide portion is the mean of the group.

Table 1

Number of men and women who were graduated from Minnesota high schools and who were enrolled in each college and each type of college with number and per cent of students for whom specified scores were available.

	College Code	Total Freshmen Men & Women Enrolled	HSR Data Available for: No.	HSR Data Available for: %	ACE Data Available for: No.	ACE Data Available for: %	Coop. Eng. Data Available for: No.	Coop. Eng. Data Available for: %
U of M Colleges	1	431	399	93	401	93	397	92
	2	26	19	73	18	69	18	69
	3	319	284	89	287	90	286	90
	4	968	763	79	763	79	754	78
	5	752	692	92	692	92	691	92
	6	2016	1793	89	1802	89	1794	89
	7	640	547	85	549	86	550	86
Total	A	5152	4497	87	4512	86	4490	87
Four Year Liberal Arts Colleges	1	236	225	95	216	92	218	92
	2	97	94	97	94	97	93	96
	3	280	266	95	262	94	263	94
	4	296	289	98	291	98	290	98
	5	331	316	95	322	97	320	97
	6	390	375	96	378	97	375	96
	7	120	114	95	115	96	115	96
	8	299	292	98	295	99	295	99
	9	250	228	91	244	98	240	96
	10	89	65	73	82	92	82	92
	11	344	333	97	327	95	331	96
	12	441	428	97	425	96	426	97
	13	87	83	95	83	95	83	95
	14	111	89	80	109	98	108	97
	16	82	77	94	76	93	74	90
Total	B	3453	3274	95	3319	96	3313	96
Junior Colleges	3	83	83	100	83	100	83	100
	4	50	50	100	49	98	49	98
	5	260	251	97	249	96	249	96
	6	151	91	60	145	96	144	95
	7	205	201	98	201	98	200	98
	9	190	188	99	187	98	186	98
	10	86	79	92	80	93	79	92
	12	27	27	100	27	100	27	100
	13	208	196	94	196	94	196	94
	14	92	86	93	86	93	86	93
	15	118	84	71	85	72	84	71
Total	C	1470	1336	91	1388	94	1383	94
State Colleges	1	260	231	89	238	92	237	91
	3	923	901	98	899	97	896	97
	5	741	698	94	704	95	696	94
	6	185	163	88	180	97	179	97
Total	D	2109	1993	94	2021	96	2008	95
Grand Total - All Colleges		12184	11100	91	11240	92	11194	92

Table 2

Number of men who were graduated from Minnesota high schools and who were enrolled in each college and in each type of college with number and per cent for whom specified scores were available.

	College Code	Total Freshmen Men Enrolled	HSR Data Available for: No.	HSR Data Available for: %	ACE Data Available for: No.	ACE Data Available for: %	Coop. Eng. Data Available for: No.	Coop. Eng. Data Available for: %
U of M Colleges	1	273	250	92	251	92	247	90
	3	55	42	76	42	76	42	76
	4	733	550	75	551	75	543	74
	5	743	685	92	685	92	684	92
	6	1134	972	86	984	87	978	86
	7	391	333	85	331	85	332	85
Total	A	3329	2832	85	2844	85	2826	85
Four Year Liberal Arts Colleges	1	113	108	96	104	92	104	92
	2	52	49	94	50	96	50	96
	3	123	117	95	117	95	116	94
	4	133	131	98	131	98	131	98
	5	152	145	95	148	97	146	96
	6	201	192	96	191	95	188	94
	9	250	228	91	244	98	240	96
	10	89	65	73	82	92	82	92
	11	168	161	96	157	93	159	95
	12	441	428	97	425	96	426	97
	16	45	40	89	39	87	38	85
Total	B	1767	1664	94	1688	96	1680	95
Junior Colleges	3	46	46	100	46	100	46	100
	4	31	31	100	30	97	30	97
	5	157	151	96	150	96	150	96
	6	113	63	56	108	96	107	95
	7	145	141	97	141	97	140	97
	9	120	118	98	118	98	117	98
	10	58	52	90	52	100	52	100
	12	15	15	100	15	100	15	100
	13	126	114	90	114	90	114	90
	14	57	54	95	54	95	54	95
	15	55	23	42	23	42	23	42
Total	C	923	808	88	851	92	848	92
State Colleges	1	137	120	88	122	89	121	88
	3	505	489	97	489	97	486	96
	5	431	401	93	405	94	398	92
	6	101	86	85	98	97	97	96
Total	D	1174	1096	93	1114	95	1102	94
Grand Total - All Colleges		7193	6400	89	6497	90	6456	90

Table 3

Number of women who were graduated from Minnesota high schools and who were enrolled in each college and in each type of college with number and per cent for whom specified scores were available.

	College Code	Total Freshmen Women Enrolled	HSR Data Available for: No.	HSR Data Available for: %	ACE Data Available for: No.	ACE Data Available for: %	Coop. Eng. Data Available for: No.	Coop. Eng. Data Available for: %
U of M Colleges	1	158	149	94	150	95	150	95
	2	26	19	73	18	69	18	69
	3	264	242	92	245	93	244	92
	4	235	213	91	212	90	211	90
	5	9	7	78	7	78	7	78
	6	882	821	93	818	93	816	93
	7	249	214	86	218	88	218	88
Total	A	1823	1665	91	1668	91	1664	91
Four Year Liberal Arts Colleges	1	123	117	95	112	91	114	93
	2	45	45	100	44	98	43	96
	3	157	149	95	145	92	147	94
	4	163	158	97	160	98	159	98
	5	179	171	96	174	97	174	97
	6	189	183	97	187	99	187	99
	7	120	114	95	115	96	115	96
	8	299	292	98	295	99	295	99
	11	176	172	98	170	97	172	98
	13	87	83	95	83	95	83	95
	14	111	89	80	109	98	108	97
	16	37	37	100	37	100	36	97
Total	B	1686	1610	95	1631	97	1633	97
Junior Colleges	3	37	37	100	37	100	37	100
	4	19	19	100	19	100	19	100
	5	103	100	97	99	96	99	96
	6	38	28	74	37	97	37	97
	7	60	60	100	60	100	60	100
	9	70	70	100	69	99	69	99
	10	28	27	96	28	100	27	96
	12	12	12	100	12	100	12	100
	13	82	82	100	82	100	82	100
	14	35	32	91	32	91	32	91
	15	63	61	97	62	98	61	97
Total	C	547	528	97	537	98	535	98
State Colleges	1	123	111	90	116	94	116	94
	3	418	412	96	410	98	410	98
	5	310	297	96	299	96	298	96
	6	84	77	92	82	98	82	98
Total	D	935	897	96	907	97	906	97
Grand Total - All Colleges		4991	4700	94	4743	95	4738	95

Table 4

Table showing the Mean and Standard Deviation of High School Percentiles, American Council Test (1952 College Edition) and Cooperative English Test (Form Z, lower level) for:

A. University of Minnesota
(All colleges including UMD)
B. Four Year Liberal Arts Colleges
C. Junior Colleges
D. State Colleges

Men

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A	2832	60.67	26.65	2844	104.71	22.79	2826	135.84	33.13
B	1664	66.28	23.79	1688	109.32	20.42	1680	144.89	29.63
C	808	49.72	26.47	851	97.27	19.01	848	128.35	33.84
D	1096	50.03	24.40	1114	95.30	21.91	1102	120.82	32.16
Total	6400	58.92	26.30	6497	103.32	22.57	6456	134.65	33.19

Women

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A	1665	72.01	23.55	1668	104.68	22.11	1664	156.50	29.72
B	1610	78.26	19.73	1631	109.26	21.39	1633	165.02	26.22
C	528	66.78	23.82	537	98.09	23.22	535	150.50	34.11
D	897	68.63	23.00	907	98.45	21.44	906	147.09	30.55
Total	4700	72.92	22.63	4743	104.32	22.31	4738	156.96	30.05

Men and Women

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A	4497	64.86	26.13	4512	104.70	22.55	4490	143.50	33.43
B	3274	72.17	22.69	3319	109.29	20.90	3313	154.81	29.75
C	1336	56.46	26.78	1388	97.59	22.69	1383	136.92	35.61
D	1993	58.40	25.52	2021	96.72	21.76	2008	132.67	34.05
Total	11100	64.85	25.76	11240	103.74	22.47	11194	144.09	33.74

Table 5

Table showing the Mean and Standard Deviation of High School Percentiles, American Council Test (1952 College Edition) and Cooperative English Test (Form Z, lower level) for:

University of Minnesota

1. Agriculture
2. Dental Hygiene
3. Education
4. General College
5. Institute of Technology
6. Science, Literature, and the Arts
7. Duluth Branch

Men

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A 1	250	60.41	20.68	251	99.61	19.00	247	127.76	26.41
3	42	56.60	18.07	42	96.57	20.04	42	124.86	29.25
4	550	28.81	17.67	551	80.30	17.81	543	102.69	28.41
5	685	80.31	15.04	685	117.40	19.19	684	154.00	26.44
6	972	67.20	21.81	984	113.31	16.51	978	146.26	26.65
7	333	54.50	25.98	331	98.43	20.65	332	129.32	30.97
Total	2832	60.67	26.65	2844	104.71	22.79	2826	135.84	33.13

Women

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A 1	149	76.03	19.11	150	106.34	17.79	150	156.41	27.90
2	19	76.58	31.03	18	114.17	13.09	18	161.17	18.95
3	242	73.38	16.97	245	100.33	18.86	244	153.11	26.21
4	213	36.54	19.91	212	78.30	18.52	211	121.68	27.81
5	7	91.14	4.70	7	125.57	10.97	7	156.57	19.82
6	821	79.51	17.81	818	112.82	18.77	816	166.53	24.48
7	214	73.14	23.26	218	102.09	21.76	218	156.12	28.96
Total	1665	72.01	23.55	1668	104.68	22.11	1664	156.50	29.72

Men and Women

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A 1	399	66.24	21.48	401	102.12	18.84	397	138.58	30.35
2	19	76.58	31.03	18	114.17	13.09	18	161.17	18.95
3	284	70.90	18.15	287	99.78	19.08	286	148.97	28.49
4	763	30.97	18.65	763	79.75	18.04	754	108.00	29.50
5	692	80.42	15.01	692	117.49	19.14	691	154.03	26.39
6	1793	72.83	20.99	1802	113.09	17.58	1794	155.48	27.60
7	547	61.79	26.56	549	99.88	21.17	550	139.94	32.91
Total	4497	64.86	26.13	4512	104.70	22.55	4490	143.50	33.43

Table 6

Table showing the Mean and Standard Deviation of High School Percentiles, American Council Test (1952 College Edition) and Cooperative English Test (Form Z, lower level) for:

Four Year Liberal Arts Colleges

Men

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
B 1	108	56.00	23.40	104	101.81	17.07	104	132.01	26.57
2	49	83.80	18.53	50	131.94	16.86	50	173.64	22.41
3	117	63.44	24.42	117	108.02	18.04	116	140.84	29.06
4	131	64.42	23.01	131	106.63	18.24	131	138.03	27.17
5	145	72.83	21.80	148	110.29	21.77	146	142.55	32.40
6	192	70.08	21.71	191	113.82	18.52	188	148.26	27.87
9	228	74.94	17.73	244	111.01	19.21	240	146.80	27.63
10	65	58.88	29.88	82	109.54	24.59	82	146.83	34.55
11	161	74.95	19.05	157	114.45	20.54	159	154.07	24.81
12	428	57.87	24.51	425	105.26	20.00	426	142.95	30.11
16	40	62.75	23.28	39	100.26	19.19	38	137.82	27.59
Total	1664	66.28	23.79	1688	109.32	20.42	1680	144.89	29.63

Women

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
B 1	117	75.91	22.06	112	106.03	19.56	114	161.09	26.03
2	45	91.09	12.76	44	132.11	14.62	43	194.65	14.16
3	149	78.45	18.15	145	105.39	21.24	147	161.76	28.45
4	158	80.63	16.98	160	108.54	20.72	159	164.33	25.34
5	171	81.37	18.81	174	108.38	25.15	174	164.37	26.82
6	183	79.16	18.25	187	113.16	20.13	187	165.67	25.43
7	114	73.46	20.08	115	105.67	17.79	115	155.47	24.36
8	292	73.42	21.82	295	108.43	21.40	295	167.66	24.07
11	172	85.27	14.95	170	115.61	19.59	172	172.56	22.77
13	83	76.19	19.56	83	103.78	21.90	83	158.23	27.85
14	89	73.55	23.04	109	105.53	19.20	108	160.46	27.65
16	37	76.68	18.78	37	106.32	20.38	36	160.44	25.97
Total	1610	78.26	19.73	1631	109.26	21.39	1633	165.02	26.22

Table 6 (Continued)

Men and Women

Code	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
B 1	225	66.36	24.79	216	103.99	18.52	218	147.22	30.04
2	94	87.29	16.44	94	132.02	15.86	93	183.35	21.74
3	266	71.85	22.41	262	106.56	19.92	263	152.54	30.54
4	289	73.28	21.51	291	107.68	19.67	290	152.45	29.27
5	316	77.45	20.68	322	109.26	23.68	320	154.42	31.43
6	375	74.51	20.60	378	113.49	19.34	375	156.94	28.07
7	114	73.46	20.08	115	105.67	17.79	115	155.47	24.36
8	292	73.42	21.82	295	108.43	21.40	295	167.66	24.07
9	228	74.94	17.73	244	111.01	19.21	240	146.80	27.63
10	65	58.88	29.88	82	109.54	24.59	82	146.83	34.55
11	333	80.28	17.82	327	115.05	20.06	331	163.68	25.51
12	428	57.87	24.51	425	105.26	20.00	426	142.95	30.11
13	83	76.19	19.56	83	103.78	21.90	83	158.23	27.85
14	89	73.55	23.04	109	105.53	19.20	108	160.46	27.65
16	77	69.44	22.35	76	103.21	20.01	74	148.82	29.10
Total	3274	72.17	22.69	3319	109.29	20.90	3313	154.81	29.75

Table 7

Table showing the Mean and Standard Deviation of High School Percentiles, American Council Test (1952 College Edition) and Cooperative English Test (Form Z, lower level) for:

Junior Colleges

Men

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
C 3	46	40.59	24.20	46	100.96	17.32	46	133.35	29.92
4	31	38.55	28.71	30	98.07	22.51	30	133.87	33.06
5	151	45.42	27.18	150	92.73	22.86	150	127.71	35.73
6	63	50.71	25.59	108	97.69	24.23	107	129.08	35.41
7	141	54.43	25.73	141	98.97	23.65	140	132.08	35.41
9	118	46.62	26.76	118	96.91	21.13	117	128.09	33.77
10	52	49.27	24.47	52	101.60	21.02	52	117.58	28.90
12	15	47.53	27.16	15	103.87	20.79	15	125.53	37.52
13	114	53.32	25.43	114	94.82	21.41	114	126.23	30.37
14	54	56.48	23.60	54	98.06	21.72	54	123.52	31.80
15	23	64.48	23.87	23	104.17	18.03	23	138.74	31.98
Total	808	49.72	26.47	851	97.27	19.01	848	128.35	33.84

Women

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
C 3	37	68.65	20.65	37	104.68	24.26	37	158.78	29.41
4	19	63.63	31.04	19	95.21	21.05	19	160.26	31.54
5	100	67.50	23.55	99	96.91	19.23	99	158.52	28.65
6	28	68.75	24.90	37	106.08	24.76	37	156.00	36.18
7	60	64.52	24.72	60	98.42	23.30	60	153.87	33.29
9	70	67.93	21.95	69	100.51	20.93	69	157.72	27.03
10	27	63.81	23.12	28	96.21	25.47	27	129.93	37.64
12	12	72.00	27.01	12	102.00	33.74	12	149.17	47.38
13	82	65.02	23.01	82	94.77	25.99	82	138.54	36.58
14	32	58.38	26.31	32	88.16	23.81	32	130.44	29.49
15	61	72.47	21.25	62	98.74	19.18	61	150.62	33.88
Total	528	66.78	23.82	537	98.09	23.22	535	150.50	34.11

Table 7 (Continued)

Code	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
C 3	83	53.10	26.63	83	102.61	20.78	83	144.69	32.27
4	50	48.08	32.02	49	96.96	22.00	49	144.10	34.93
5	251	54.22	27.97	249	94.39	21.58	249	139.96	36.37
6	91	56.26	26.71	145	99.83	24.64	144	136.00	37.50
7	201	57.44	25.85	201	98.81	23.55	200	138.62	36.19
9	188	54.55	27.11	187	98.24	21.13	186	139.08	34.54
10	79	54.24	24.98	80	99.71	22.83	79	121.80	32.68
12	27	58.41	29.69	27	103.04	27.33	27	136.04	43.80
13	196	58.22	25.12	196	94.80	23.43	196	131.38	33.66
14	86	57.19	24.66	86	94.37	23.02	86	126.09	31.14
15	84	70.29	22.29	85	100.21	19.03	84	147.37	33.79
Total	1336	56.46	26.78	1388	97.59	22.69	1383	136.92	35.61

Table 8

Table showing the Mean and Standard Deviation of High School Percentiles, American Council Test (1952 College Edition) and Cooperative English Test (Form Z, lower level) for:

State Colleges

Men

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
D 1	120	51.82	25.63	122	94.62	21.94	121	114.79	32.16
3	489	48.89	24.09	489	95.23	21.25	486	121.80	32.20
5	401	49.88	24.42	405	94.15	22.28	398	120.19	32.00
6	86	54.78	23.56	98	101.26	22.64	97	125.98	31.38
Total	1096	50.03	24.40	1114	95.30	21.91	1102	120.82	32.16

Women

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
D 1	111	73.54	20.59	116	96.26	20.07	116	144.36	27.94
3	412	66.69	23.13	410	97.81	21.50	410	146.55	31.00
5	297	68.19	23.47	299	98.48	21.48	298	147.03	30.92
6	77	73.66	21.97	82	104.68	21.76	82	153.89	29.43
Total	897	68.63	23.00	907	98.45	21.44	906	147.09	30.55

Men and Women

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
D 1	231	62.26	25.74	238	95.42	21.07	237	129.26	33.60
3	901	57.03	25.26	899	96.41	21.40	896	133.13	33.97
5	698	57.67	25.67	704	95.99	22.05	696	131.68	34.22
6	163	63.70	24.69	180	102.82	22.31	179	138.77	33.52
Total	1993	58.40	25.52	2021	96.72	21.76	2008	132.67	34.05

Table 9

Table showing the Mean and Standard Deviation of High School Percentiles, American Council Test (1952 College Edition) and Cooperative English Test (Form Z, lower level) for:

High School Juniors

Men

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
20% Sampling	3612	42.60	27.44	3699	89.12	27.20	3675	111.65	40.06

Women

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
20% Sampling	4125	57.11	27.70	4174	90.65	25.30	4151	136.62	36.72

Men and Women

	High School %iles			Raw Score on American Coun. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
20% Sampling	7737	50.34	28.53	7873	89.93	26.22	7826	124.89	40.30

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The Relation of the Minnesota College State-Wide Program Test Scores to First Year Grade Point Averages in Minnesota Colleges

and

A Survey of Scholastic Aptitude in Minnesota Colleges

by
Edward O. Swanson and Ralph F. Berdie
Student Counseling Bureau

This report is based on entering freshmen to all Minnesota Colleges for the fall of 1959 who were tested as juniors in the 1957-58 State-Wide College Testing Program.

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Résumé

The evidence in the following pages justifies these generalizations:

(1) Available methods can provide information about the abilities and aptitudes of high school and college students so that comparisons can be made between sexes, between types of colleges, between colleges of the same type, and between groups of students entering college in different years.

(2) Students in different types of colleges (university colleges, liberal arts colleges, junior colleges, and state colleges), on the average, have correspondingly different abilities and high school records.

(3) Students in different colleges, even when these colleges are of the same type, on the average have different abilities and aptitudes.

(4) In spite of the differences found between averages of students in different types of colleges, much overlapping in distributions is found and every type of college has students with good and students with poor ability and aptitude.

(5) In spite of the differences found between average students in colleges of the same type, much overlapping in distributions is found and every college will have some students superior to the average students of every other college and some students inferior to the average students of every other college.

(6) The average student in a given college one year tends to obtain similar test scores and have a similar high school background to the average student in that college during subsequent years, but in some colleges and during some years changes in these averages are observed.

(7) The average high school grades of men and women are different, as are their average scores on the English Test. However, their average scores on the college aptitude test tend to be the same.

(8) The information which describes the students in these colleges also predicts their later performance in college.

(9) Tests predict with varying effectiveness in different colleges and a test which is the best predictor in one college may be the second best predictor in another college.

(10) The test scores and high school percentile rank observed here predict college performance more effectively for women than they do for men.

Introduction

This study of freshmen who entered Minnesota colleges in 1959 is available because of the cooperation of presidents, deans, counselors, and admissions officers of the colleges which belong to the Association of Minnesota Colleges, the superintendents, principals, counselors, and students in Minnesota high

schools, and the staff of the Student Counseling Bureau, particularly Mrs. Veronica Schultz, who tirelessly computed the statistics. A cooperative study such as we are reporting can be done only in a state where schools and colleges, over a period of years, have developed an enduring habit of working with one another. All who work with high school and college students in Minnesota must be impressed by the great respect that high school and college staff members have for one another and by the great concern they share for the welfare of their students.

The purposes of this study are to provide a new chapter in the continuing description of entering freshmen in Minnesota colleges and to show the relationships of high school percentile rank and scores on the State-Wide Testing Program tests to first-year grades in individual colleges. A systematic inventory and description of the aptitudes and achievements of college freshmen began in 1930. Present analysis of the predictive value of these test scores is particularly important at this time insofar as the freshmen who entered college in 1959 were the first who had taken the Minnesota Scholastic Aptitude Test (MSAT) as high school juniors.

Background

The Minnesota State-Wide College Testing Program is sponsored by the Association of Minnesota Colleges and administered by the Student Counseling Bureau of the Office of the Dean of Students of the University of Minnesota. The Committee on High School-College Relations, a joint committee of the college association and the Minnesota Association of Secondary School Principals, serves as the advisory group for the program. In 1954, a study paralleling the present one was completed, and relationships between scores on the American Council on Education Psychological Examination, the 1952 College Edition (ACE), and college grades were reported for most colleges in the state. Relationships such as these must be reviewed periodically for two reasons. First, ample evidence indicates that these relationships change over a period of years, even when the tests remain the same. Secondly, tests used in programs such as the Minnesota program must be evaluated periodically and, when necessary, changed and more effective tests substituted. Such a change was deemed necessary in 1957-58 when a new test, the MSAT, replaced the ACE.

The Minnesota Scholastic Aptitude Test is a short form of one of the Ohio State Psychological Examinations and was developed by Professor Wilbur Layton, with the cooperation of the author of the Ohio test, Professor Toops. The MSAT requires 50 minutes for administration, has only one set of directions which are given at the beginning of the test, and consists of 78 multiple-choice reading comprehension, analogy, and same-opposite items. The ACE Psychological Examination, formerly used, had six separately timed sections requiring 20 minutes of practice time and 38 minutes of working time. The MSAT uses a one-sided answer sheet compared to the two-sided ACE answer sheet. More important than ease of administration and economics of scoring was the fact that the MSAT showed higher correlations with colleges grades than did the ACE.

The Procedures of the Study

The study reported here was ~~the~~ first proposed to the members of the Association of Minnesota Colleges in 1958. In the fall of 1958 each Minnesota college furnished the Student Counseling Bureau with a list of its new freshmen. From these lists, the Study Counseling Bureau identified those students who had graduated from Minnesota high schools in the spring of 1959 and from its records added the students' High School Rank and scores on the MSAT and Cooperative English Test (CET) to the lists. At this time, the means and standard deviations were computed for each college and for each type of college to provide descriptions of the students in each institution. These are presented in tables 8 through 13.

At the end of the academic year, copies of the lists of names were returned to the colleges where the students' first year grade averages were added to the lists. These lists then were returned to the Student Counseling Bureau and correlations were computed on UNIVAC, the University's high speed computer. This machine provided correlations of each variable with every other variable separately for each sex in each college. The statistics were then combined in order to obtain correlations for men and women together and to provide multiple correlations demonstrating the effectiveness of the combined indices, HSR, MSAT and CET, in predicting first-year grade point average (GPA). Some students in each of the colleges completed less than a full acadmic year. For these students, the GPA for the period they had completed was used as an estimate of what their GPA would have been for the entire year. Courses for which a grade of incomplete was recorded were not used in calculating the GPA. Each college was asked to include all courses which are used to compute the grade average. For example, if a grade were given in "Chapel" and the college used this grade to determine its grade average, it was included in the data here.

The "Survey of Scholastic Aptitude" section of this report presents the means and standard deviations for each sex, each college, and each type of college and includes all the students for whom test scores were available. In the prediction study of relationships between scores and first-year grades, only those students were retained who had GPA, HSR, and both test scores. Thus, the number of students in each college are seldom the same for the two parts of the study. Usually the number of students shown for the GPA will be less than the number shown for the survey part of the study.

A standard method was used in computing GPA. Grades of A were assigned weights of 4, grades of B weights of 3, grades of C weights of 2, grades of D weights of 1, and grades of F weights of 0. Some colleges used weights extending from 3 through -1, but this would not affect the correlations of the standard deviations. The grade averages obtained using this former system can be adjusted to the latter by subtracting one. For the colleges which use weights of 3,2,1,0,0 for A through F respectively, subtracting one from the GPA's reported here will give an adjusted grade average only slightly lower than that obtained by use of the colleges' own weighting system.

RELATIONSHIPS BETWEEN TEST SCORES AND FIRST YEAR GRADES

Several methods can demonstrate the relationship between scores and grades. In a report to be published soon after the publication of this present one, a series of prediction or expectancy tables will show immediately useful relationships. In the present report the method used for demonstrating the relationship will be the coefficient of correlation.

The coefficient of correlation indicates the degree of relationship between two measurements. If in a class of ten persons, the one with the highest test score received the highest marks, the second highest test score, the second highest mark, etc., the correlation would be one. If there is no relationship, the correlation is zero. If the relationship is perfectly reversed, that is, the ones with the highest scores obtained the lowest marks, the correlation is minus one. The correlation between a test score and grades is a validity coefficient. Validity coefficients reported in college prediction studies usually range from .25 to .75.

Tables 1, 2, and 3 show the correlations for men, women, and the combined sexes for each college. For each type of college the lowest, highest, and median or typical correlations are shown. For each college, a multiple correlation also is shown. The multiple correlation provides the best possible way in which to combine the three measures, HSR, MSAT, and CET, in predicting GPA. The multiple correlation takes into account the correlation that each measure has with GPA and the correlation that each measure has with every other measure. The correlations between the predictors and GPA range from .08 to 1.00. The reliability, or stability, or the correlation coefficient is related closely to the number of students in the sample, and any correlation in this study for a group where the number of cases (N) is less than 50 should be used with great skepticism as, for practical purposes, these correlations have little or no meaning.

Correlations for women tend to be higher than the correlations for men. Of thirty possible comparisons of men and women, 26 of the comparisons show the multiple correlation for women is higher than for men. The median or typical multiple correlation for men is .59, for women, .71. The trend observed for the multiple correlations is similar when the other correlations are compared.

Correlations for the types of colleges do not vary greatly. For high school rank, the median validity coefficient for four-year liberal arts colleges is .59, for junior colleges .69, for state colleges .57. Similar correlations for the MSAT are .52, .53, and .57, and for the English Test, .51, .54, and .55. The median multiple correlations for the three types of colleges are .66, .68, and .69. The predictors used here tend to work equally well in all types of colleges.

Striking differences are found among individual colleges, however. Among the men, multiple correlations are found as low as .36 and as high as .72. Among the women, the multiple correlations extend from .32 to .80. High school rank in one instance has a correlation of .81 in one college and in another college a correlation of .33.

The 1959 Results Compared to Those of 1954

The only change in tests used in the two years was from the ACE Psychological Examination taken by the entering freshmen of 1954 to MSAT taken by the entering freshmen of 1959. The same English test was used in both studies. There are 54 groups of men and women separately for which the correlations can be compared between the two studies. For the English Test 40 of the 54 comparisons (74 per cent) showed higher correlations in 1954. For HSR, 29 of the 54 (54 per cent) showed higher correlations in 1954. MSAT (in 1959) showed higher correlations than the ACE (in 1954) in 30 of the 54 comparisons (55 per cent). The multiple correlations were higher in 1954 in 30 of the 54 comparisons (55 per cent).

A number of factors which might influence the size of the correlations obtained were different for the two studies. Some would decrease the correlations, while others would tend to increase them. These factors must be taken into consideration when comparing the correlations:

1. The number of colleges participating. This would influence the comparison only for the junior and state colleges as a few of these institutions did not participate in the 1954 study. All the colleges of the University and the private four-year liberal arts colleges were in the study both years.

2. Changed method of computing grade averages. In the 1954 study the 3,2,1,0,0 system of weights for grades A,B,C,D, and F respectively, was used, while in 1959, the 4,3,2,1,0 system was used. Other things being equal, this would tend to lower the 1954, as compared to the 1959, correlations.

3. First year versus first quarter (or semester) grades. The 1954 study used first semester or first quarter grades. The 1959 study used first year grades. As the first year grades are a more stable measure of students' performances, the net effect would be to make the 1959 correlations slightly higher.

4. Selectivity and curtailment of distributions. The standard deviations, or measures of spread, were generally larger for the 1954 than for the 1959 groups. A curtailment of the spread of scores in a distribution tends to reduce correlation coefficients. This would help to explain a number of the larger correlations in 1954, especially correlations for the four-year liberal arts colleges. The ACE used in 1954 and the MSAT used in 1959, being different tests, cannot be compared on this basis.

Other conditions affect the size of the correlations, but here the curtailment of the variation of scores would seem to be most important in explaining the lower correlations for HSR and CET in the 1959 study.

If the ACE had been used again in the 1959 study, there is no reason to suppose its correlations with GPA would not have also decreased. Since the MSAT versus the GPA correlations in the 1959 study were generally larger than the ACE versus HPR correlations in the 1954 study it seems appropriate to conclude that MSAT has borne out the original experimental findings.

Interpretation of Correlations

The substantial size of the correlations, particularly the multiple correlations, indicates that the Minnesota colleges have valuable data for use in selecting and counseling students. Colleges may establish a regression equation with which to predict first year GPA or develop tables to show what per cent of students having a given HSR, MSAT, or CET score will do passing work in their college.

The high school counselor can use the results of this study to aid students in making decisions about entering college. Even though the high school counselor does not know the identity of the colleges, he may use the median correlations as a guide in advising his students.

THE SURVEY OF SCHOLASTIC APTITUDE

The current "Survey" brings up to date the studies begun on a state-wide basis in 1937. Data for some college extend back to 1930. This is the fourth survey studying entering Minnesota college freshmen who were tested as juniors in high school, similar studies being done in 1954, 1956, and 1958.

Completeness of Data

Of the approximately 560 public and private high schools in Minnesota in 1957-58, 540 or 96 per cent tested their juniors. As the few schools which do not use the tests of the college State-Wide Program are small schools, close to 99 per cent of the juniors of that year were tested. Means and standard deviations were computed for entering freshmen in Minnesota colleges and for a sample consisting of about 20 per cent of all the juniors tested in 1957-58. In 1959-60 there were 40 colleges* in Minnesota admitting freshmen. All 40 of them cooperated to make this study possible.

Tables 4 through 6 show for each college the per cent of entering freshmen who graduated from Minnesota high schools in 1959 for whom the test scores and HSR were available. Students graduating from Minnesota high schools prior to 1959 were not included in this report, as one of the main purposes of this study was to evaluate MSAT, available for the first time on high school graduates of 1959. Neither does the study include non-Minnesota high school graduates. Table 7 shows, by type of college, how many students enrolled in each college, how many were from Minnesota high schools, and how many of the Minnesota freshmen graduated in the spring of 1959.

* This number includes seven colleges of the University of Minnesota.

The Survey Results

Figures 1 to 3 show a comparison of selected groups of entering freshmen and a 20 per cent sample of high school juniors. The heavy portion of each bar constitutes approximately two-thirds of the scores for the entering freshmen, both male and female, for that group. The indentation in the heavy portion of the bar indicates the mean or average of the group. For example, on Figure 2 for MSAT, two-thirds of the high school juniors obtained raw scores between 16 and 43 (scale on upper part of graph) and the group had a mean of 29. Referring to the percentile scale at the bottom of Figure 2, this same two-thirds of the high school juniors ranged from the third to the 64th percentile on entering freshmen norms. On the same MSAT figure, the University's College of Science, Literature, and the Arts had a mean raw score of 43 and two-thirds of its entering freshmen obtained scores in the raw score range of 31 to 56. On the norms for entering freshmen, these raw scores correspond to the 32nd and 88th percentiles, respectively.

The results conform to the usual pattern found in the previous surveys. Women consistently have better high school grades and higher English scores (see Tables 8 through 13). This is true for every individual college, as well as for each type of college. On the MSAT, the women show average scores ranging from one to five points higher. Generally, the MSAT sex differences are less than those for HSR and CET.*

Trends

Previous surveys through 1958 have indicated that for many years there have been no significant changes upward or downward in the quality of entering freshmen in Minnesota colleges as shown by their mean HSR, scholastic aptitude test scores, and the English test scores. This year some individual colleges appear to have made shifts of several points upwards on the mean HSR and English test scores. Comparing means by sex and by type of college for HSR for 1958 and 1959, we find the Junior College males show the largest mean gain, from 49.7 to 54.5 On CET, University males shift from a mean of 135.8 to 141.1. As high school junior males (on a 20 per cent sample basis) show only a .3 shift upward on HSR and 1.8 upward on CET, the above gains would appear significant. However, shifts this large have been observed in the past on successive scholastic surveys (one or two years apart) and it is premature to say a trend upward has started in the selectivity of entering Minnesota college freshmen.

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* The magnitude of the mean differences between the sexes can be assessed and compared by noting what proportion the mean difference is of the standard deviation for the group combined. For example, for the 20 per cent sample of high school juniors (see Table 13) the following results obtain:

	Mean Score		Difference of	S. D. of	Proportion Mean Diff.
	Men	Women	Mean Score	Total Group	S.D.
HSR	42.9	56.3	13.4	28.8	.47
MSAT	28.5	30.2	1.7	13.3	.13
CET	113.5	136.9	23.4	40.9	.57

Table 1

Correlations Between Grade Point Average and Junior Tests and High School Rank for Minnesota Colleges - Men

School Code	N	High School Rank	Minnesota Scholastic Aptitude Test	Cooperative English Test	Multiple Correlations
U of Minn.					
Ag, F, H Ec	168	.556	.438	.366	.593
Dent. Hy.					
Educ.	39	.268	.180	.251	.469
G.C.	250	.292	.082	.193	.363
I.T.	610	.492	.386	.359	.547
S.L.A.	821	.433	.371	.372	.515
U.M.D.	374	.567	.462	.433	.591
4 Year Liberal Arts Colleges					
B- 1	142	.498	.428	.369	.549
2	64	.342	.294	.317	.426
3	107	.595	.463	.395	.636
4	154	.503	.235	.257	.512
5	114	.651	.445	.435	.682
6	162	.476	.393	.247	.535
9	223	.552	.523	.506	.638
10	73	.699	.549	.554	.720
11	119	.486	.514	.450	.590
12	419	.541	.413	.338	.580
15	13	.630	.409	.498	.645
16	31	.639	.482	.333	.693
Range		.342-.699	.235-.549	.247-.554	.426-.720
Median		.547	.437	.382	.613
Junior Colleges					
C- 3	47	.665	.465	.539	.673
4	38	.792	.524	.582	.798
5	110	.629	.540	.522	.647
6	74	.656	.371	.415	.670
7	86	.467	.132	.116	.490
9	109	.663	.432	.592	.689
10	62	.568	.420	.390	.580
12	9	.818	.639	.472	1.000
13	98	.572	.437	.469	.587
14	31	.672	.620	.732	.556
15	11	.642	.533	.311	.730
Range		.467-.818	.132-.620	.116-.732	.490-1.000
Median		.656	.465	.472	.670
State Colleges					
D- 1	153	.487	.499	.431	.572
3	426	.596	.445	.457	.616
4	98	.615	.506	.410	.669
5	291	.543	.413	.420	.568
6	101	.588	.476	.444	.622
Range		.487-615	.413-.506	.410-.457	.568-.669
Median		.588	.476	.431	.616

Table 2

Correlations Between Grade Point Average and Junior Tests and High School Rank for Minnesota Colleges - For Women

School Code	N	High School Rank	Minnesota Scholastic Aptitude Test	Cooperative English Test	Multiple Correlations
U of Minn.					
Ag, F, H Ec	121	.617	.628	.693	.726
Dent. Hy.	14	.329	.366	.545	.561
Educ.	177	.584	.512	.431	.635
G. C.	101	.443	.488	.409	.596
I.T.	7	.482	.289	.208	---
S.L.A.	706	.528	.467	.416	.610
U.M.D.	264	.695	.541	.567	.719
4 Year Liberal Arts Colleges					
B- 1	114	.704	.612	.573	.748
2	30	.376	.484	.445	.640
3	145	.704	.566	.461	.742
4	163	.612	.460	.457	.660
5	114	.668	.596	.577	.733
6	168	.588	.499	.464	.645
7	104	.742	.661	.554	.804
8	244	.488	.473	.388	.564
11	171	.608	.627	.490	.720
13	83	.514	.585	.596	.670
14	98	.625	.603	.504	.678
15	7	.851	.318	.739	.937
16	45	.546	.589	.503	.630
Range		.376-.851	.318-661	.388-.739	.564-.937
Median		.612	.585	.503	.678
Junior Colleges					
C- 3	19	.788	.624	.465	.844
4	15	.927	.753	.810	.956
5	86	.692	.615	.521	.320
6	48	.494	.673	.584	.678
7	67	.429	.122	.229	.450
9	65	.708	.657	.541	.747
10	23	.605	.399	.459	.612
12	7	.903	.962	.925	.978
13	65	.687	.422	.481	.688
14	27	.575	.407	.524	.584
15	54	.713	.583	.579	.751
Range		.429-.927	.122-.962	.229-.925	.320-.978
Median		.692	.615	.524	.688
State Colleges					
D- 1	106	.607	.615	.567	.699
3	398	.689	.520	.568	.712
4	127	.767	.609	.679	.791
5	343	.699	.618	.571	.869
6	116	.662	.637	.662	.742
Range		.607-.767	.520-.637	.567-.679	.699-.869
Median		.689	.615	.571	.742

Table 3

Correlations Between Grade Point Average and Junior Tests and High School Rank for Minnesota Colleges - Men and Women

School Code	N	High School Rank	Minnesota Scholastic Aptitude Test	Cooperative English Test	Multiple Correlations
U of Minn.					
Ag, F, H Ec	289	.619	.555	.549	.670
Dent. Hy.					
Educ.	216	.528	.451	.338	.573
G.C.	351	.328	.190	.246	.402
I.T.					
S.L.A.	1527	.489	.429	.422	.571
U.M.D.	638	637	.508	.525	.660
4 Year Liberal Arts Colleges					
B- 1	256	.615	.519	.512	.667
2	94	.382	.365	.398	.503
3	252	.654	.520	.433	.694
4	317	.565	.356	.383	.592
5	228	.675	.538	.528	.720
6	330	.550	.464	.397	.611
7	104	.742	.661	.554	.804
8	244	.488	.473	.388	.564
9	223	.552	.523	.506	.638
10	73	.699	.549	.554	.720
11	290	.574	.587	.509	.648
12	419	.541	.413	.338	.580
13	83	.514	.585	.596	.670
14	98	.625	.603	.504	.678
15	20	.740	.373	.594	.767
16	76	.600	.538	.450	.652
Range		.382-.742	.356-.661	.338-.596	.503-.804
Median		.587	.522	.505	.660
Junior Colleges					
C- 3	66	.668	.531	.507	.740
4	53	.812	.614	.627	.822
5	196	.649	.532	.543	.669
6	122	.690	.424	.516	.689
7	153	.465	.132	.198	.483
9	174	.697	.528	.600	.715
10	85	.579	.393	.410	.581
12	16	.841	.798	.797	.906
13	163	.641	.428	.535	.647
14	58	.647	.510	.674	.676
15	65	.696	.557	.540	.732
Range		.465-.841	.132-.798	.198-.797	.483-.906
Median		.668	.531	.540	.676
State Colleges					
D- 1	259	.586	.572	.551	.661
3	824	.663	.486	.543	.682
4	225	.734	.572	.612	.755
5	634	.644	.561	.538	.693
6	217	.647	.578	.589	.696
Range		.586-.734	.486-.578	.538-.612	.661-.745
Median		.647	.572	.551	.693

Table 4

Number of Men Who Were Graduated from Minnesota High Schools in 1959 Who Were Enrolled in Each College and in Each Type of College, with Number and Per Cent for Whom Specified Scores Were Available.

			Men					
			High School Scholarship Data Available for:		Minnesota Scholastic Aptitude Test Data Available for:		Cooperative English Data Available for:	
	College Code	Total No. Freshmen Men Enrolled	No.	%	No.	%	No.	%
4 Year Colleges	1	161	159	99	155	96	155	96
	2	65	65	100	65	100	65	100
	3	115	112	97	110	96	109	95
	4	160	158	99	157	98	157	98
	5	126	126	100	123	98	123	98
	6	172	170	99	168	98	168	98
	9	239	232	97	235	98	235	98
	10	84	77	92	76	90	75	89
	11	126	123	98	126	100	126	100
	12	470	456	97	459	98	460	98
	15	19	19	100	16	84	16	84
	16	32	32	100	32	100	32	100
Total	B	1769	1729	98	1722	97	1721	97
Junior Colleges	3	50	50	100	50	100	50	100
	4	40	39	98	40	100	40	100
	5	125	115	92	120	96	120	96
	6	80	78	98	77	96	77	96
	7	101	96	95	93	92	91	90
	9	119	114	96	114	96	117	98
	10	63	63	100	63	100	63	100
	12	11	10	91	10	91	10	91
	13	107	103	96	101	94	100	93
	14	37	33	89	31	84	31	84
	15	47	14	30	13	28	13	28
Total	C	780	715	92	712	91	712	91
State Colleges	1	169	161	95	160	95	161	95
	3	458	441	96	440	96	440	96
	4	116	105	91	111	96	110	95
	5	342	326	95	317	93	317	93
	6	115	106	92	106	92	105	91
Total	D	1200	1139	95	1134	95	1133	94
Grand Total, All Colleges without U of Minn.		3749	3583	96	3568	95	3566	95

Table 5

Number of Women Who Were Graduated From Minnesota High Schools in 1959 and Who Were Enrolled in Each College and in Each Type of College, With Number and Per Cent For Whom Specified Scores Were Available.

			Women					
			High School Scholarship Data Available for:		Minnesota Scholastic Aptitude Test Data Available for:		Cooperative English Test Data Available for:	
	Code	Total No. Freshmen Women Enrolled	No.	%	No.	%	No.	%
4 Year Colleges	1	127	123	97	124	98	123	97
	2	30	30	100	30	100	30	100
	3	160	150	94	151	94	152	95
	4	173	166	96	168	97	170	98
	5	123	121	98	119	97	119	97
	6	187	184	98	182	97	183	98
	7	108	106	98	106	98	107	99
	8	259	253	98	254	98	252	97
	11	183	182	99	176	96	175	96
	13	93	85	91	86	92	85	91
	14	109	103	94	104	95	103	94
	15	11	9	82	8	73	8	73
	16	47	47	100	45	96	45	96
Total	B	1610	1559	97	1553	96	1552	96
Junior Colleges	3	23	23	100	23	100	23	100
	4	16	15	94	15	94	15	94
	5	96	90	94	92	96	92	96
	6	53	49	93	49	93	49	93
	7	71	69	97	68	96	68	96
	9	67	67	100	66	99	66	99
	10	28	25	89	24	86	24	86
	12	9	7	78	8	89	8	89
	13	70	70	100	69	99	69	99
	14	39	38	97	35	90	35	90
	15	66	55	83	55	83	55	83
Total	C	538	508	94	504	94	504	94
State Colleges	1	118	111	94	111	94	110	93
	3	435	417	96	418	96	421	97
	4	148	132	89	138	93	138	93
	5	366	363	99	360	98	360	98
	6	128	121	95	121	95	122	95
Total	D	1195	1144	96	1148	96	1151	96
Grand Total, All Colleges without U of M		3343	3211	96	3205	96	3207	96

Table 6

Number of Men and Women Graduated From Minnesota High Schools in 1959 Who Were Enrolled in Each College and Each Type of College, With Number and Per Cent of Students for Whom Specified Scores Were Available.

	College Code	Total No. Freshmen Men & Women Enrolled	High School Scholarship Data Available for: No.	%	Minnesota Scholastic Aptitude Test Data Available No.	%	Cooperative English Test Data Available No.	%
U of M Colleges	1	324	324	100	319	98	318	98
	3	238	238	100	235	99	233	98
	4	558	547	98	547	98	546	98
	5	645	645	100	642	99	642	99
	6	1645	1637	99	1644	100	1644	100
	7	665	661	99	664	99	663	99
Total	A	4075	4052	99	4051	99	4046	99
4 Year Colleges	1	288	282	98	279	97	278	97
	2	95	95	100	95	100	95	100
	3	275	262	95	261	95	261	95
	4	333	324	97	325	98	327	98
	5	249	247	99	242	97	242	97
	6	359	354	99	350	97	351	98
	7	108	106	98	106	98	107	99
	8	259	253	98	254	98	252	97
	9	239	232	97	235	98	235	98
	10	84	77	92	76	90	75	89
	11	309	305	99	302	98	301	97
	12	470	456	97	459	98	460	98
	13	93	85	91	86	92	85	91
	14	109	103	94	104	95	103	94
	15	30	28	93	24	80	24	80
	16	79	79	100	77	97	77	97
Total	B	3379	3288	97	3275	97	3273	97
Junior Colleges	3	73	73	100	73	100	73	100
	4	56	54	96	55	98	55	98
	5	221	205	93	212	96	212	96
	6	133	127	95	126	95	126	95
	7	172	165	96	161	94	159	92
	9	186	181	97	180	97	183	98
	10	91	88	97	87	96	87	96
	12	20	17	85	18	90	18	90
	13	177	173	98	170	96	169	95
	14	76	71	93	66	87	66	87
	15	113	69	61	68	60	68	60
Total	C	1318	1223	93	1216	92	1216	92
State Colleges	1	287	272	95	281	94	271	94
	3	893	858	96	858	96	861	96
	4	264	237	90	249	94	248	94
	5	708	689	97	677	96	677	96
	6	243	227	93	227	93	227	93
Total	D	2395	2283	95	2282	95	2284	95
Grand Total All Colleges without U of M		7092	6794	96	6773	96	6773	96

Table 7

The Total Number of Entering Freshmen
in Minnesota Colleges the Fall of 1959;
The Number from Minnesota High Schools; and the
Number Graduating from Minnesota High Schools in 1959*

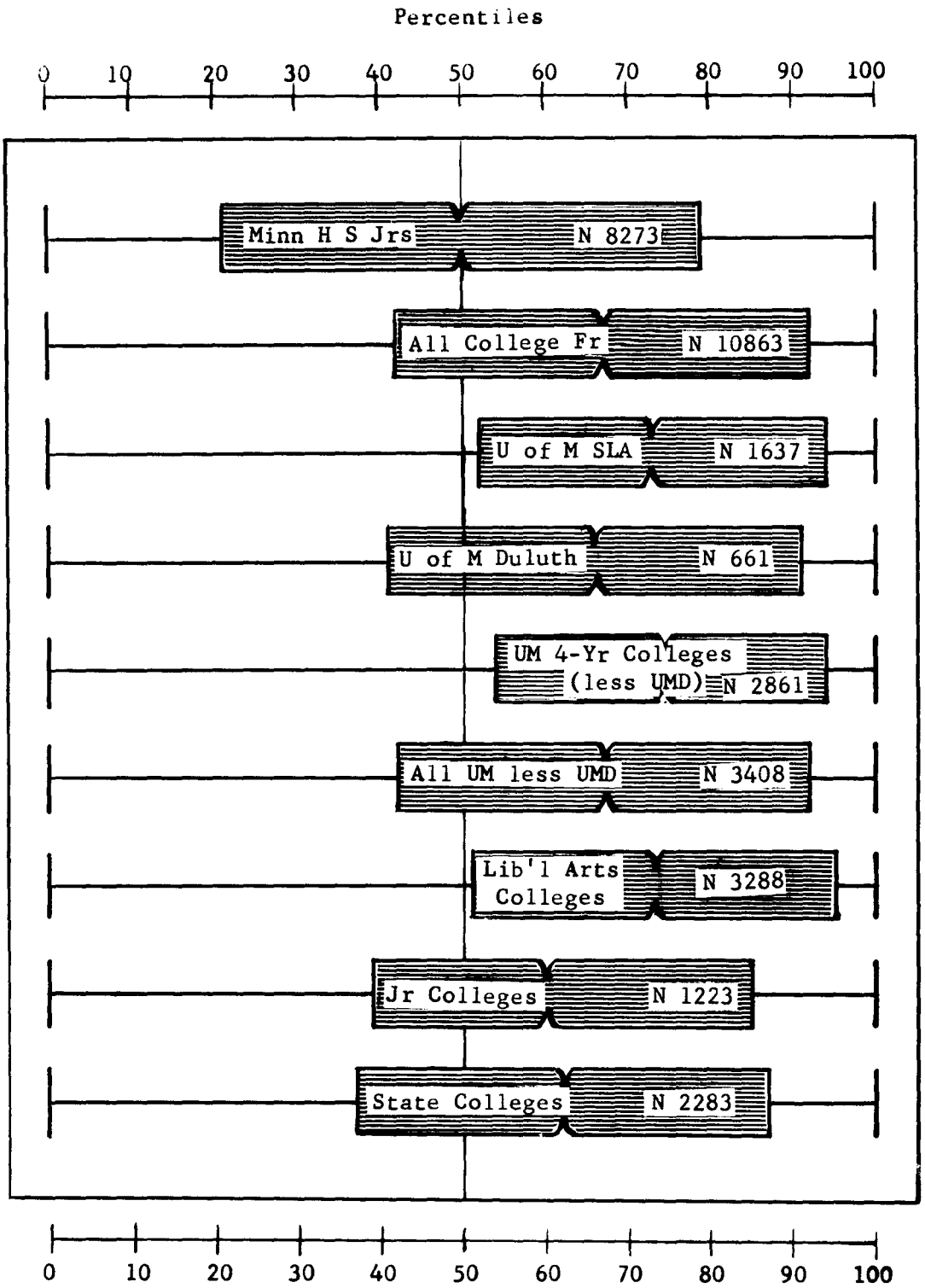
	Total No. Ent. Fr.	No. Ent. Fr. From Minn. H.S.	No. Ent. Fr. Grad. From Minn. H.S. in 1959
All University Colleges	5,331	N.A.**	4,063
Four Year Liberal Arts Colleges	5,747	3,623	3,441
Junior Colleges	1,756	1,580	1,217
State Colleges	3,423	3,157	2,282
Grand Total			
not including the University	10,926	8,360	6,940
including the University	16,257	-----	11,003

* The counts given in column three are not strictly comparable to the counts shown in the tables of the "Scholastic Comparison Study" section of this report as some of them were obtained from different sources than the entering freshmen lists used in the Scholastic Comparison Study.

** Not Available

Figure 1

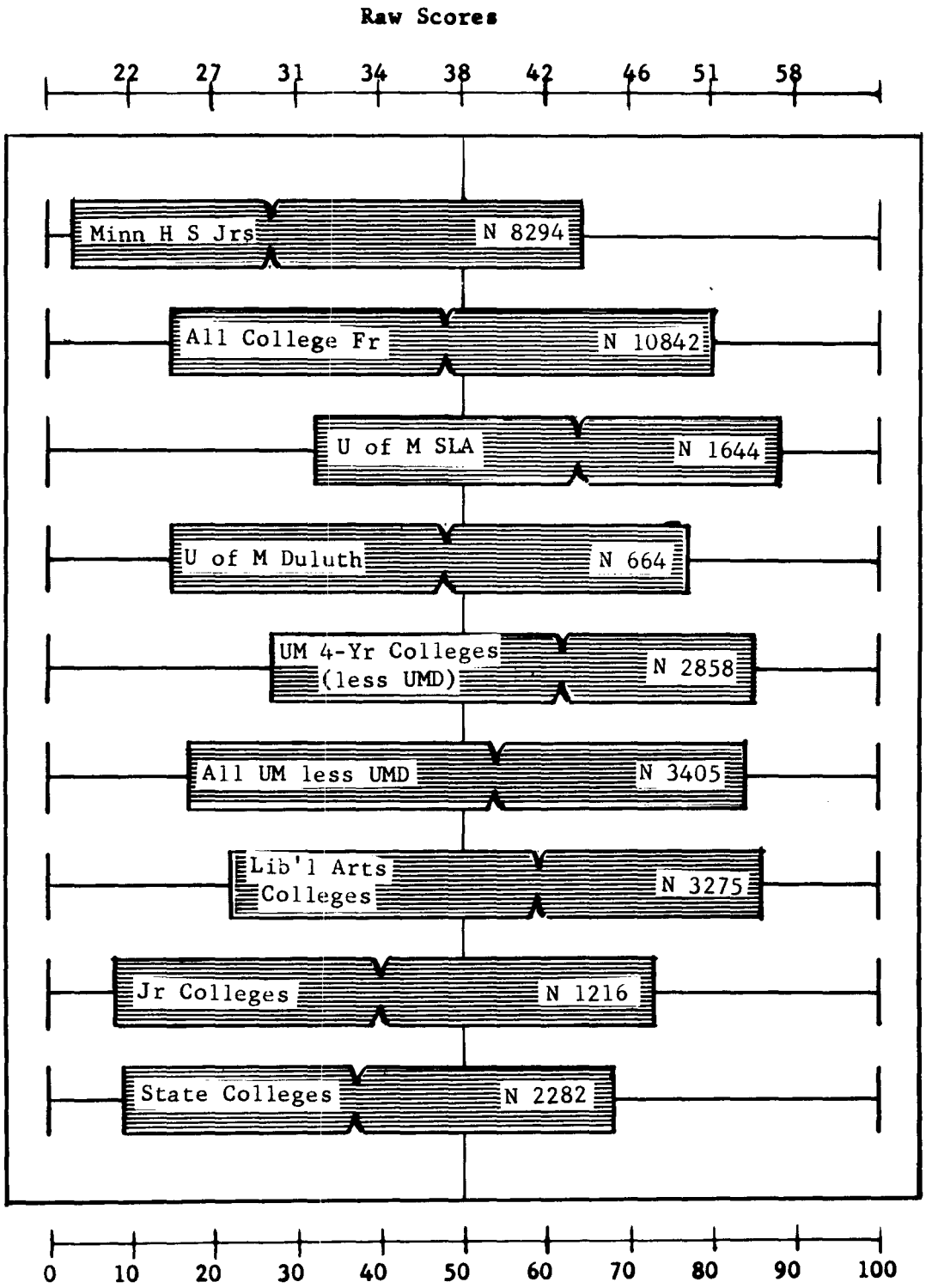
Variability of High School Percentiles of College Freshmen who were graduated from Minnesota High Schools and who entered Minnesota Colleges September, 1959.



The range of each group can extend from the first to the hundredth percentile. The wide portion of each group represents the middle two-thirds of freshmen of the group. The indentation in the wide portion is the mean of the group.

Figure 2

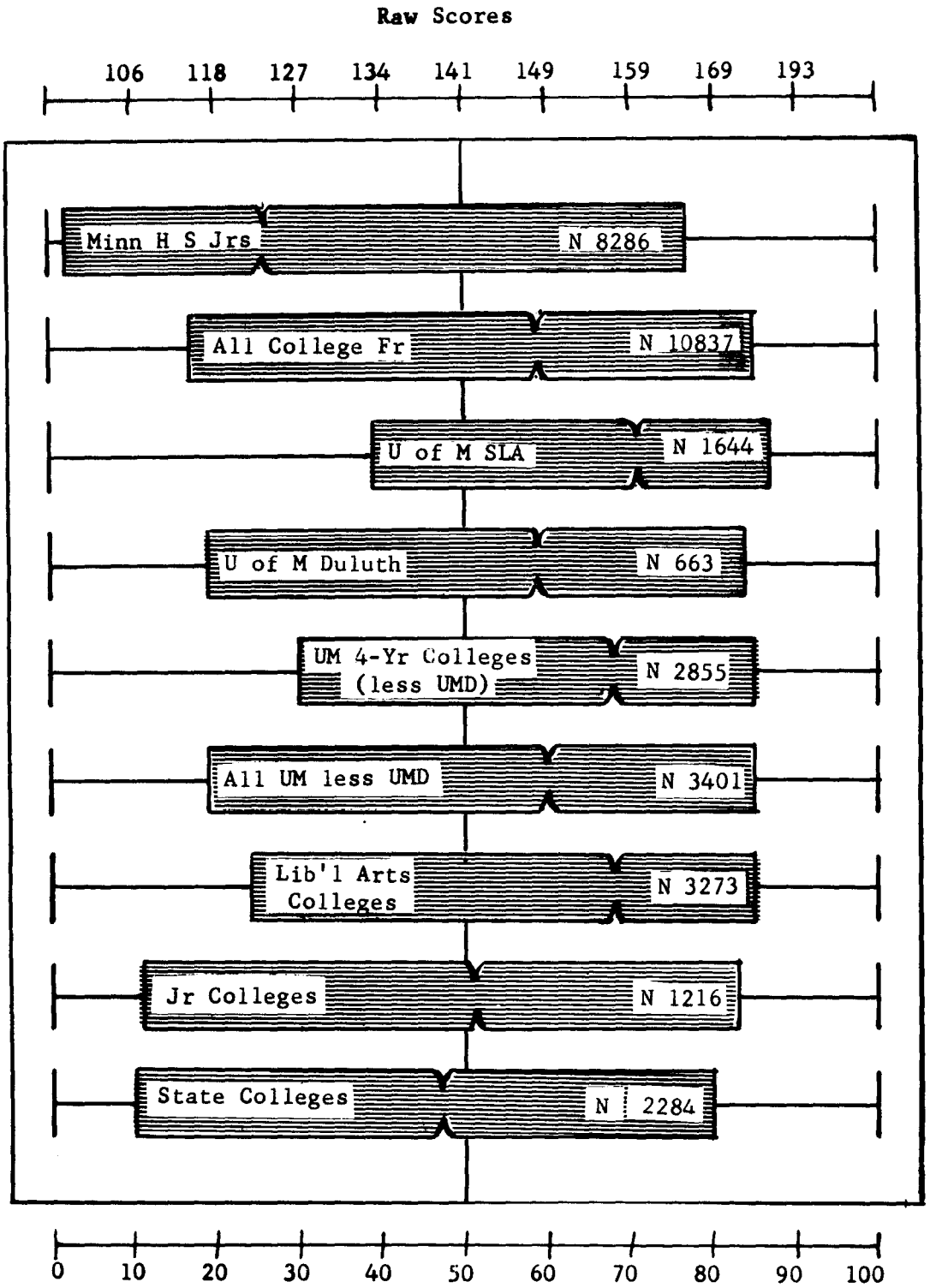
Variability of Minnesota Scholastic Aptitude Test scores for College Freshmen who were graduated from Minnesota High Schools and who entered Minnesota Colleges September, 1959.



The range of each group can extend from the first to the hundredth percentile. The wide portion of each group represents the middle two-thirds of the group. The indentation in the wide portion is the mean of the group.

Figure 3

Variability of Cooperative English Test, Form Z, Lower Level, Total Score. College Freshmen who were graduated from Minnesota High Schools and who entered Minnesota Colleges September, 1959.



The range of each group can extend from the first to the hundredth percentile. The wide portion of each group represents the middle two-thirds of the group. The indentation in the wide portion is the mean of the group.

Table 8

Table showing the Mean and Standard Deviation of High School %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, lower level) for:

A. University of Minnesota (All Colleges Including UMD)
B. Four Year Colleges
C. Junior Colleges
D. State Colleges

Men

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A	2529	62.96	25.85	2526	37.53	13.01	2525	141.14	32.46
B	1729	67.93	23.18	1722	39.40	13.89	1721	146.77	29.43
C	715	54.53	25.63	712	32.94	13.58	712	132.97	33.30
D	1139	52.50	24.33	1134	30.64	11.59	1133	125.21	31.72
Total	6112	61.43	25.47	6094	36.24	13.68	6091	138.79	33.75

Women

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A	1540	73.01	23.82	1543	40.00	14.09	1539	160.58	29.78
B	1559	79.07	18.88	1553	42.62	13.66	1552	166.42	26.78
C	508	66.95	22.89	504	34.44	13.15	504	153.06	31.15
D	1144	70.95	22.32	1148	34.70	12.39	1151	151.72	30.25
Total	4751	73.86	22.21	4748	38.99	13.87	4746	159.54	29.70

Men and Women

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A	4069	66.77	25.57	4069	38.47	13.48	4064	148.50	32.85
B	3288	73.21	21.96	3275	40.93	13.88	3273	156.09	29.87
C	1223	59.69	25.28	1216	33.56	13.42	1216	141.29	33.90
D	2283	61.75	25.10	2282	32.68	12.16	2284	138.58	33.61
Total	10863	66.87	24.87	10842	37.44	13.83	10837	147.89	33.60

Table 9

Table showing the Mean and Standard Deviation of High School %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form A, lower level) for:

University of Minnesota

1. Agriculture
2. Dental Hygiene
3. Education
4. General College
5. Institute of Technology
6. Science, Literature, and the Arts
7. U of M, at Duluth

Men

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A 1	194	63.79	19.00	192	32.49	11.41	192	131.65	30.33
3	43	64.16	14.25	43	30.21	11.11	43	129.47	31.44
4	387	27.22	17.16	385	23.98	7.43	385	108.36	27.45
5	645	79.64	15.33	642	43.25	11.66	642	153.58	27.13
6	874	67.51	21.15	876	41.81	11.66	877	150.69	27.31
7	386	60.10	25.90	388	35.12	11.62	386	139.16	30.46
* Total w/D	2529	62.96	25.85	2526	37.53	13.01	2525	141.14	32.46
Total w/oD	2143	63.48	25.80	2138	37.96	13.20	2139	141.50	32.79

Women

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A 1	130	78.02	20.18	127	39.39	13.42	126	158.85	32.33
2	17	83.76	9.42	18	39.39	9.29	18	161.11	21.79
3	195	73.67	11.75	192	36.24	12.45	190	155.76	26.65
4	160	35.63	18.45	162	23.44	7.99	161	122.58	33.31
6	763	78.78	18.50	768	44.95	12.87	767	169.08	24.13
7	275	75.27	20.59	276	38.91	13.25	277	160.84	29.72
* Total w/D	1540	73.01	23.82	1543	40.00	14.09	1539	160.58	29.78
Total w/oD	1265	72.52	24.44	1267	40.24	14.26	1262	160.52	29.80

Men and Women

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A 1	324	69.50	20.70	319	35.24	12.71	318	142.42	33.86
2	17	83.76	9.42	18	39.39	9.29	18	161.11	21.79
3	238	71.95	12.78	235	35.14	12.43	233	150.91	29.42
4	547	29.68	17.96	547	23.82	7.61	546	112.55	30.01
5	645	79.64	15.33	642	43.25	11.66	642	153.58	27.13
6	1637	72.76	20.74	1644	43.28	12.34	1644	159.27	27.46
7	661	66.41	24.98	664	36.69	12.47	663	148.22	32.00
* Total w/D	4069	66.77	25.57	4069	38.47	13.48	4064	148.50	32.85
Total w/oD	3408	66.84	25.25	3405	38.81	13.65	3401	148.56	33.02

* w/D includes U of M at Duluth
w/o D does not include U of M at Duluth

Table 10

Table showing the Mean and Standard Deviation of High School %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, lower level) for:

Four Year Colleges

Men

	High School %iles			Raw Score on Minn.Schol.Apt.Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
B 1	159	60.83	22.93	155	35.61	11.03	155	138.37	26.13
2	65	81.89	18.27	65	54.42	11.93	65	173.69	20.99
3	112	73.18	20.38	110	38.35	11.64	109	144.72	31.42
4	158	71.88	18.46	157	38.43	11.41	157	147.24	24.54
5	126	70.28	21.32	123	39.88	11.37	123	145.72	30.39
6	170	75.84	18.81	168	43.83	11.79	168	156.99	25.94
9	232	74.66	19.53	235	41.17	12.59	235	150.59	28.09
10	77	66.44	25.90	76	40.43	14.78	75	146.76	33.72
11	123	75.20	18.37	126	42.84	11.62	126	156.64	24.28
12	456	58.27	25.31	459	35.66	12.06	460	139.05	30.02
15	19	46.95	20.33	16	32.00	12.62	16	127.31	31.10
16	32	62.72	23.46	32	38.75	13.05	32	141.59	28.66
Total	1729	67.93	23.18	1722	39.40	13.89	1721	146.77	29.43

Women

	High School %iles			Raw Score on Minn.Schol.Apt.Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
B 1	123	76.81	18.62	124	37.77	14.22	123	156.80	28.85
2	30	91.53	11.20	30	59.53	8.68	30	191.87	19.19
3	150	76.18	20.04	151	37.70	12.69	152	161.32	26.49
4	166	80.12	14.88	168	39.84	12.45	170	164.67	27.20
5	121	80.20	19.19	119	44.29	14.45	119	168.09	29.33
6	184	84.41	14.91	182	47.27	12.57	183	174.26	22.15
7	106	73.15	19.34	106	39.12	13.18	107	156.50	29.98
8	253	75.17	20.55	254	44.57	12.73	252	167.83	24.43
11	182	86.62	13.19	176	46.27	12.14	175	175.23	21.21
13	85	76.13	21.08	86	42.19	13.48	85	163.12	25.28
14	103	76.17	22.96	104	39.76	14.30	103	160.93	29.48
15	9	53.56	26.09	8	39.63	8.56	8	155.0	23.82
16	47	80.53	16.38	45	39.51	13.82	45	162.82	24.39
Total	1559	79.07	18.88	1553	42.62	13.66	1552	166.42	26.78

Table 10
(Continued)

Men and Women

Code	High School %iles			Raw Score on Minn.Schol.Apt.Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
B 1	282	67.80	22.59	279	36.57	12.60	278	146.97	29.01
2	95	84.94	16.97	95	56.03	11.26	95	179.43	22.12
3	262	74.90	20.24	261	37.98	12.27	261	154.39	29.80
4	324	76.10	17.22	325	39.16	11.98	327	156.30	27.38
5	247	75.14	20.90	242	42.05	13.16	242	156.72	31.90
6	354	80.29	17.43	350	45.62	12.32	351	165.99	25.54
7	106	73.15	19.34	106	39.12	13.18	107	156.50	29.98
8	253	75.17	20.55	254	44.57	12.73	252	167.83	24.43
9	232	74.66	19.53	235	41.17	12.59	235	150.59	28.09
10	77	66.44	25.90	76	40.43	14.78	75	146.76	33.72
11	305	82.01	16.47	302	44.84	12.04	301	167.45	24.34
12	456	58.27	25.31	459	35.66	12.06	460	139.05	30.02
13	85	76.13	21.08	86	42.19	13.48	85	163.12	25.28
14	103	76.17	22.96	104	39.76	14.30	103	160.93	29.48
15	28	49.07	22.56	24	34.54	11.98	24	136.54	31.69
16	79	73.32	21.43	77	39.19	13.51	77	154.00	28.26
Total	3288	73.21	21.96	3275	40.93	13.88	3273	156.09	29.87

Table 11

Table showing the Mean and Standard Deviation of High School %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, lower level) for:

Junior Colleges

Men

	High School %iles			Raw Score on Minn.Schol.Apt.Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
C 3	50	51.32	24.33	50	32.20	12.02	50	136.24	29.57
4	39	54.05	23.48	40	30.70	10.07	40	129.00	31.49
5	115	55.16	27.71	120	31.95	13.86	120	128.36	33.12
6	78	47.88	26.24	77	31.73	14.05	77	129.32	38.68
7	96	56.01	22.28	93	35.92	12.39	91	139.81	29.14
9	114	53.31	26.19	114	34.39	12.71	117	141.45	31.55
10	63	56.33	23.86	63	30.81	10.33	63	126.90	28.47
12	10	58.90	21.35	10	30.90	10.77	10	132.70	16.70
13	103	54.87	25.87	101	31.22	11.66	100	123.78	35.65
14	33	60.00	27.11	31	36.97	14.50	31	139.77	36.59
15	14	72.21	22.19	13	40.46	10.23	13	156.54	21.99
Total	715	54.53	25.63	712	32.94	13.58	712	132.97	33.30

Women

	High School %iles			Raw Score on Minn.Schol.Apt.Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
C 3	23	70.91	21.57	23	39.35	13.89	23	163.83	29.66
4	15	71.13	21.72	15	34.73	14.78	15	157.27	26.44
5	90	59.88	23.62	92	30.10	13.35	92	142.27	34.63
6	49	70.63	14.11	49	32.98	11.64	49	150.27	26.96
7	69	67.52	21.69	68	36.35	11.90	68	162.51	27.00
9	67	67.39	23.84	66	37.71	12.86	66	163.30	30.85
10	25	62.08	27.57	24	32.33	13.45	24	142.46	35.72
12	7	61.43	30.08	8	34.50	12.22	8	152.38	32.12
13	70	67.27	22.21	69	32.74	12.06	69	146.96	26.84
14	38	65.03	24.19	35	34.23	14.39	35	148.51	33.98
15	55	75.04	21.50	55	37.78	12.60	55	159.2	25.54
Total	508	66.95	22.89	504	34.44	13.15	504	153.06	31.15

Table 11
(Continued)

Men and Women

Code	High School %iles			Raw Score on Minn.Schol.Apt.Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
C 3	73	57.49	25.20	73	34.45	13.07	73	144.93	32.25
4	54	58.80	24.24	55	31.80	11.68	55	136.71	32.71
5	205	57.23	26.10	212	31.15	13.67	212	134.40	34.48
6	127	56.66	24.94	126	32.21	13.18	126	137.47	36.07
7	165	60.82	22.76	161	36.11	12.19	159	149.52	30.39
9	181	58.52	26.24	180	35.61	12.86	183	149.33	33.01
10	88	57.97	25.10	87	31.23	11.30	87	131.20	31.42
12	17	59.94	25.34	18	32.50	11.58	18	141.44	26.63
13	173	59.89	25.20	170	31.84	11.85	169	133.24	34.29
14	71	62.69	25.71	66	35.52	14.51	66	144.41	35.50
15	69	74.46	21.67	68	38.29	12.23	68	158.69	24.93
Total	1223	59.69	25.28	1216	33.56	13.42	1216	141.29	33.90

Table 12

Table showing the Mean and Standard Deviation of High School %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, lower level) for:

State Colleges

Men

	High School %iles			Raw Score on Minn. Schol.Apt.Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
D 1	161	56.09	23.17	160	29.63	11.97	161	124.53	29.67
3	441	51.71	24.25	440	32.05	11.55	440	127.32	29.81
4	105	48.29	25.38	111	29.78	12.43	110	120.75	35.21
5	326	52.09	25.01	317	29.29	10.69	317	122.28	33.44
6	106	55.81	22.11	106	31.25	10.58	105	131.07	28.96
Total	1139	52.50	24.33	1134	30.64	11.59	1133	125.21	31.72

Women

	High School %iles			Raw Score on Minn.Schol. Apt.Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
D 1	111	75.32	20.47	111	34.74	13.78	110	156.13	29.33
3	417	70.15	22.14	418	34.51	11.77	421	152.12	29.52
4	132	69.77	23.44	138	34.92	13.57	138	152.87	30.36
5	363	72.59	21.05	360	35.09	12.37	360	150.67	31.35
6	121	66.10	25.57	121	33.89	11.73	122	148.20	29.51
Total	1144	70.95	22.32	1148	34.70	12.39	1151	151.72	30.25

Men and Women

	High School %iles			Raw Score on Minn.Schol.Apt.Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
D 1	272	63.94	24.04	271	31.72	12.99	271	137.36	33.36
3	858	60.67	25.01	858	33.25	11.72	861	139.44	32.15
4	237	60.25	26.56	249	32.63	13.32	248	138.63	36.30
5	689	62.89	25.18	677	32.37	11.97	677	137.38	35.31
6	227	61.30	24.56	227	32.66	11.29	227	140.27	30.48
Total	2283	61.75	25.10	2282	32.68	12.16	2284	138.58	33.61

Table 13

Table showing the Mean and Standard Deviation of High School %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, lower level) for:

High School Juniors

Men

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
20% Sampling	4054	42.92	28.08	4071	28.51	13.05	4062	113.48	40.59

Women

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
20% Sampling	4219	56.25	27.94	4223	30.23	13.40	4224	136.94	37.71

Men and Women

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
20% Sampling	8273	49.72	28.79	8294	29.39	13.26	8286	125.44	40.87

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EXPECTANCY TABLES FOR FRESHMEN ENTERING MINNESOTA COLLEGES

by

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The tables in this report show the chances in 100 that a student has of obtaining a First Year Grade Point Average of D or higher, C or higher, and B or higher in each of several Minnesota colleges.

High School Rank and Minnesota Scholastic Aptitude Test score are used separately as the predictor variables.

These tables are based on freshmen entering Minnesota colleges in the fall of 1959 who were tested as juniors in the 1957-58 State-Wide College Testing Program.

CONTENTS

INTRODUCTION

The expectancy or prediction tables in this report provide to school counselors and college admissions officers specific information about the relationships between achievement in individual Minnesota colleges and 1) high school percentile rank (HSR) and 2) score on the Minnesota Scholastic Aptitude Test (MSAT). Since no predictor of college success operates exactly the same way in any two colleges, separate tables were prepared for each college to help predict freshmen grade point average (GPA) from HSR and MSAT. These tables are an extension of the correlation coefficients reported in the recently published Office of the Dean of Student's Research Bulletin, Volume 3, Number 1, "The Relation of Minnesota College State-Wide College Testing Program Test Scores to First Year Grade Point Averages in Minnesota Colleges and A Survey of Scholastic Aptitude." Correlation coefficients are one means of expressing relationships. However, when interpreting relationships to students and parents, expectancy tables are more meaningful.

The publication of these tables represents another phase of a long history during which the Association of Minnesota Colleges with the cooperation of Minnesota high schools has provided information to help Minnesota youth make appropriate post-high school plans. This report is available only through the cooperation of the high schools which administered the tests and provided high school grade averages and the colleges which provided the testing program for all high school juniors and made available the grade point averages of their freshmen students.

DEVELOPMENT

The development of these tables started with the testing of Minnesota high school juniors in the 1957-58 school year. These students took the MSAT as part of the Minnesota State-Wide College Testing Program. Following graduation from high school in 1959, many of them entered Minnesota colleges. The grades earned by each of these students during his freshman year in a Minnesota college were summarized in a grade point average and used with scores on the MSAT and HSR to form the tables. The grade point averages reported in the tables were calculated in the same way for each college. A grade of "A" was assigned a weight of 4, "B" a weight of 3, "C" a weight of 2, "D" a weight of 1 and "F" a weight of 0. For each course, the weight corresponding to the grade the student received was multiplied by the number of credits in that course. Summing these products for all courses completed by the student and dividing by the total number of credits gave his grade point average. Incomplete grades on record at the end of the freshmen year (June 1960) were not included in the calculation of the grade point average.

For each college the 1959-60 freshmen were divided into five groups on the basis of MSAT scores; those at or above the 80th percentile in the top group, those in the 60-79 percentile category in the next group, those in the 40-59

percentile category in the third group, those in the 20-39 percentile category in the fourth group, and those with percentile ranks below 20 in the bottom group (the percentile score norms used were from the 1960 MSAT revised norms for entering Minnesota college freshmen who had been tested as high school juniors). For each of the five groups the per cent who had a freshman grade average of "B" or higher (GPA of 3.00 and above) was calculated, as was the per cent with an average of "C" or higher (GPA of 2.00 and above) and the per cent with an average of "D" or higher (GPA of 1.00 and above). The tables for HSR were developed by the same procedure, with the same five percentile categories (80-, 60-79, 40-59, 20-39, and -19) used to divide the students on the basis of HSR and the same three grade categories (D or higher, C or higher, and B or higher) used for GPA. Each row of a table gives the per cents of a group of 1959-60 college freshmen who had similar MSAT scores (or HSR) and earned average grades of D or higher, C or higher, and B or higher at a particular college.

In order to predict the college success of <u>any one student</u> we must rely on our knowledge of the success of former students who had similar characteristics. The accuracy of our prediction of success for any college student depends on many things. The extent to which we can consider this student a representative member of the group of students used to establish the probability figures is important. We never know this exactly. In general, the larger the number of students used to establish the particular row or probability figures the more stable will be the prediction. The smaller the number of students, the less our confidence should be in the probability figures. The total number of students used for each table and the number on which the probabilities in each row are based, are given in approximate figures. When "Size of Group" is "Less than 10", the probability figures give only the roughest estimate of what grades the students might make at college. If the "Size of Group" is 10-20, 20-50 or Over 50, the confidence placed in the reliability of the probability figures is in direct relation to the size of the group.

Expectancy tables should be based on large numbers of students. However, increasing the size of the sample at the expense of the meaningfulness of the results is not worth while. For example, a large number of students could be used if we were to develop a single prediction table including all of the junior colleges in the state. Because of the obvious differences among the prediction tables for all the individual junior colleges, a prediction of success at a given junior college from such a combined table would not be very meaningful. Tables were therefore developed for separate colleges using the numbers that were available. Interpretations of the probability figures must be made in light of these numbers which are sometimes small. For all University divisions except the College of Education and the Institute of Technology separate tables were developed for males and females because of the differences consistently found between the predictability of men and women and the number of students for whom there was data.

INTERPRETATION

For each college one table uses HSR as the predictor and another uses MSAT as the predictor. Neither is a perfect predictor of success for any college. Usually the probability figures from the two tables for any one student will be different. Three things help explain this: 1) the two measures represent different types of information; HSR gives the student's academic achievement in high school and score on the MSAT gives his performance on a test of scholastic aptitude with the correlation between them quite low, 2) the percentile ranks which were used to categorize the two measures are computed in entirely different ways; the student's HSR is based on a comparison with only the classmates in his own high school and the MSAT percentile rank is based on a comparison with the scores of students from across the state who were tested as juniors and subsequently entered Minnesota colleges, and 3) colleges use HSR in different ways in selecting their freshmen. These differences emphasize that while the expectancy tables provide valuable information to help students make post-high school plans, the information from neither table alone nor the combined information from the two tables is sufficient for making post-high school plans.

The school counselor is the person best able to help the student use the information from these tables . If the information is properly interpreted, pupils and parents should be able to understand it. The counselor must help the student recognize the limitations of the information and avoid over-generalizations or misconceptions about its meaning. The counselor should help his students integrate the information from these tables with other information. For example, the college for which the probability of obtaining an average of B or higher is largest is not necessarily the student's best choice. The courses offered in the subject in which the student wants to major, financial requirements, and the many other considerations involved in college selection must be used along with the information from the tables. The counselor, however, shouldhelp the student seriously re-evaluate the choice of a college in which he would have little likelihood of success. The section entitled "How to Select a College," page 137 in Counseling and the Use of Tests (R.F.Berdie, W.L.Layton, E.O.Swanson and T. Hagenah, University of Minnesota Student Counseling Bureau, 1959) may be useful to the counselor.

To demonstrate how the probability information for specific colleges can be obtained from the tables let us consider the MSAT score and HSR of some students.

Elenore

Elenore has a HSR of 98 and an MSAT raw score of 63. To obtain the information from the tables about Elenore's probability of success at the College of St. Catherine, we turn to table 16. Elenore's HSR is in the top group for the HSR table. Looking at the figures for the top row on HSR for this college, we find that the chances are 99 out of 100 that Elenore would earn at least a "D" average her freshman year, 88 out of 100 that she would earn at least a "C" average, and 41 out of 100 that she would earn at least a "B" average. Elenore's MSAT raw score of 63 places her at the 95th

percentile on entering college freshmen norms. Her score falls in the top group for the MSAT table also. Here we find that according to the information in this table, her chances are 99 out of 100* that she would earn a freshmen grade point average of "D" or higher, 88 out of 100 that she would earn at least a "C" average her freshman year and 52 out of 100 that she would be at least a "B" average student.

Henry

Henry has a HSR of 75 and an MSAT raw score of 35 which places him at the 43rd percentile on Minnesota college freshmen norms. He is thinking of attending Virginia Junior College next year. In table 23 for Virginia Junior College, we first locate the predictor group in which Henry's scores fall. His HSR of 75 places him in the second group from the top. Looking at the probability figures for this group we find that according to his HSR his chances of being at least a "D" average freshman at Virginia are 99 out of 100, his chances of being at least a "C" average student are 81 out of 100, and his chances of earning at least a "B" average are 12 out of 100. Using Henry's MSAT score we find that his percentile rank of 43 falls between 40-59 and places him in the middle group on the MSAT table. According to this table, his chances out of 100 of obtaining at least a "D", "C", and "B" average at Virginia his freshman year are 100, 70, and 14 respectively.

Finding the probability figures from the tables of course is only one step in their use in counseling students about post-high school plans. Let us consider two more examples in more detail.

John

John has a HSR of 50 and a raw score of 35 on the MSAT. He is considering attending the University of Minnesota at Duluth. The counselor would refer to the table for UMD males (table 9). John's HSR of 50 places him in the middle group on the HSR table. This table indicates that the probability that he would earn a freshman average of "D" or higher is quite high (88 out of 100) and the probability that he would earn a "C" or higher average is quite low (15 out of 100). No 1959 male freshmen at UMD in this HSR category obtained as high as a "B" average.

John's MSAT score of 35 gives him a percentile rank of 43, and places him in the middle group on the MSAT table also. According to this table John's chances of earning at least a "B" average are only about 5 in 100, of earning at least a "C" average about 41 out of 100, or earning at least a "D" average 96 out of 100.

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* Actually all students used to establish this row of probability figures earned at least a "D" average. However, no 100's or 0's were used since there is never complete assurance that a future student will or will not earn a particular grade average.

John may point out that both tables indicate that his chances of being at least a "B" average student at UMD are low and his chances of earning a freshmen grade point average of at least "D" look good. But he doesn't understand which table is "right" about the probability of his earning at least a "C" average. One shows the chances to be 15 out of 100 and the other 41 out of 100. The counselor should explain that neither table is "right" or "wrong". He must help John see that the tables are based on two different kinds of information and that if they gave exactly the same information about his chances at UMD they both would not be needed. Taken together they indicate that something less than half of the male UMD freshmen with his scores earn "C" averages or higher and that chances of being a "B" student at UMD are not very high.

Of course, John's counselor would not stop here. He would want to help John integrate this information with other considerations in college selection. He might want to use different tables as an aid in helping John consider his likelihood of success at other Minnesota colleges.

Eloise

Eloise came to her school counselor saying she thought she would like to attend either St. Cloud State College or Carleton. She and the counselor discussed courses of study, requirements for admission, expenses, and activities, and then Eloise raised the question of likelihood of success at each of these colleges. To help answer this question, the counselor turned to the expectancy tables.

Eloise had a HSR of 58 and an MSAT raw score of 70 which placed her at the 99th percentile on college freshman norms. The counselor noted that Eloise's HSR fell in the middle group on the HSR tables while her MSAT score placed her in the top group. Turning to the tables for these two schools, the counselor indicated the parts of the tables for these groups.

	D or Higher Average	C or Higher Average	B or Higher Average	Size of Group
Carleton				
HSR	99	67	-	Less Than 10
MSAT	99	75	25	Over 50
St. Cloud				
HSR	88	26	1	Over 50
MSAT	99	98	56	Over 50

He explained to Eloise that the numbers indicated the chances in 100 that she would earn a grade point average of at least D, C, and B, respectively.

In helping Eloise see what these figures meant, the counselor should point out that the HSR figures for Carleton were based on less than 10 people and should probably not be considered as a good indication of her success. The counselor showed Eloise that according to the HSR part of the St. Cloud table her chances of being at least a "C" average student were not high (26 out of 100). The counselor and Eloise knew that illness had kept her from earning high grades in high school. The illness that had caused her to miss so much school was over and she was making excellent grades her senior year.

The counselor suggested that they consider the figures from the MSAT tables. The predictions here were that Eloise would be able to do at least "C" work and very possibly "B" work, or better, at either college, with some indication that she might earn slightly higher grades at St. Cloud.

Using the information from the tables in conjunction with other available information about Eloise's goal for attending college, probable causes of her high school record, and admission requirements, Eloise or her counselor may decide they ought to look into any one of a number of possible considerations, some of which may involve the use of the expectancy tables for other Minnesota colleges.

THE PUBLICATION OF THESE EXPECTANCY TABLES IS AN EXPERIMENT. USED SENSIBLY AND WITH CAUTION, THEY CAN HELP PUPILS AND COUNSELOR PLAN MORE REALISTICALLY. USED INDISCREETLY AND HURRIEDLY, THEY MAY PROVE TO BE OF NO VALUE, OR EVEN WORSE. A COUNSELOR WHO DOES NOT KNOW HOW TO USE THEM SHOULD REFRAIN FROM THEIR USE. HE SHOULD, HOWEVER, LEARN HOW TO USE THEM, JUST AS HE SHOULD LEARN HOW TO USE OTHER COUNSELING AIDS THAT CAN BENEFIT STUDENTS.

Table 1
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

UNIVERSITY OF MINNESOTA
COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS
SEX: MALE
SIZE OF TOTAL GROUP: From 100 to 300

Table 1a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	92	85	25	From 20 to 50
60-79	92	32	5	Over 50
40-59	76	22	-	Over 50
20-39	78	6	-	From 10 to 20
-19	99	50	-	Less Than 10

Table 1b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	75	58	From 10 to 20
Raw Score 42-50 Percentile 60-79	88	62	6	From 10 to 20
Raw Score 34-41 Percentile 40-59	84	48	9	From 20 to 50
Raw Score 27-33 Percentile 20-39	85	40	2	From 20 to 50
Raw Score 1-26 Percentile -19	84	21	-	Over 50

Table 2
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

UNIVERSITY OF MINNESOTA
COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS
SEX: FEMALE
SIZE OF TOTAL GROUP: From 100 to 300

Table 2a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	86	25	Over 50
60-79	91	56	6	From 20 to 50
40-59	90	30	-	From 10 to 20
20-39	89	11	-	Less Than 10
-19	99	-	-	Less Than 10

Table 2b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	96	30	From 20 to 50
Raw Score 42-50 Percentile 60-79	99	91	33	From 20 to 50
Raw Score 34-41 Percentile 40-59	97	78	6	From 20 to 50
Raw Score 27-33 Percentile 20-39	91	38	5	From 20 to 50
Raw Score 1-26 Percentile -19	91	23	5	From 20 to 50

Table 3
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

UNIVERSITY OF MINNESOTA
COLLEGE OF EDUCATION

SEX: MALE AND FEMALE
SIZE OF TOTAL GROUP: From 100 to 300

Table 3a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	98	73	15	Over 50
60-79	93	53	-	Over 50
40-59	86	32	2	Over 50
20-39	99	-	-	Less Than 10
-19	-	-	-	-

Table 3b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	96	96	28	From 20 to 50
Raw Score 42-50 Percentile 60-79	92	70	10	From 20 to 50
Raw Score 34-41 Percentile 40-59	96	52	-	From 20 to 50
Raw Score 27-33 Percentile 20-39	90	44	2	From 20 to 50
Raw Score 1-26 Percentile -19	90	39	2	Over 50

Table 4
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

UNIVERSITY OF MINNESOTA
GENERAL COLLEGE

SEX: MALE
SIZE OF TOTAL GROUP: Over 300

Table 4a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	67	33	-	Less Than 10
60-79	99	64	14	From 10 to 20
40-59	94	48	9	Over 50
20-39	92	44	5	Over 50
-19	80	28	2	Over 50

Table 4b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	50	-	Less Than 10
Raw Score 42-50 Percentile 60-79	99	50	17	Less Than 10
Raw Score 34-41 Percentile 40-59	97	48	13	From 20 to 50
Raw Score 27-33 Percentile 20-39	93	49	6	Over 50
Raw Score 1-26 Percentile -19	85	35	4	Over 50

Table 5
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

UNIVERSITY OF MINNESOTA
GENERAL COLLEGE

SEX: FEMALE
SIZE OF TOTAL GROUP: From 100 to 300

Table 5a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	99	50	Less Than 10
60-79	99	58	-	From 10 to 20
40-59	91	51	-	From 20 to 50
20-39	96	41	-	Over 50
-19	60	27	-	From 20 to 50

Table 5b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	99	99	Less Than 10
Raw Score 42-50 Percentile 60-79	99	99	50	Less Than 10
Raw Score 34-41 Percentile 40-59	99	55	-	From 10 to 20
Raw Score 27-33 Percentile 20-39	86	54	-	From 20 to 50
Raw Score 1-26 Percentile -19	87	36	-	Over 50

Table 6 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959	UNIVERSITY OF MINNESOTA INSTITUTE OF TECHNOLOGY SEX: MALE AND FEMALE* SIZE OF TOTAL GROUP: Over 300

Table 6a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	95	65	15	Over 50
60-79	71	28	3	Over 50
40-59	72	19	-	Over 50
20-39	88	42	-	Less Than 10
-19	-	-	-	---

Table 6b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	94	71	19	Over 50
Raw Score 42-50 Percentile 60-79	88	47	6	Over 50
Raw Score 34-41 Percentile 40-59	82	42	8	Over 50
Raw Score 27-33 Percentile 20-39	70	26	1	Over 50
Raw Score 1-26 Percentile -19	70	18	2	From 20 to 50

* Seven women enrolled in this entering freshmen group.

Table 7
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

UNIVERSITY OF MINNESOTA
COLLEGE OF SCIENCE, LITERATURE AND THE ARTS
SEX: MALE
SIZE OF TOTAL GROUP: Over 300

Table 7a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	96	70	22	Over 50
60-79	92	46	5	Over 50
40-59	87	27	2	Over 50
20-39	79	21	1	Over 50
-19	55	9	-	From 10 to 20

Table 7b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	95	61	17	Over 50
Raw Score 42-50 Percentile 60-79	89	42	7	Over 50
Raw Score 34-41 Percentile 40-59	88	37	4	Over 50
Raw Score 27-33 Percentile 20-39	81	27	3	Over 50
Raw Score 1-26 Percentile -19	99	54	-	From 10 to 20

Table 8
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

UNIVERSITY OF MINNESOTA
COLLEGE OF SCIENCE, LITERATURE AND THE ARTS
SEX: FEMALE
SIZE OF TOTAL GROUP: Over 300

Table 8a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	98	77	23	Over 50
60-79	92	50	3	Over 50
40-59	84	26	4	Over 50
20-39	83	26	4	From 20 to 50
-19	67	-	-	Less Than 10

Table 8b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	98	77	23	Over 50
Raw Score 42-50 Percentile 60-79	95	57	10	Over 50
Raw Score 34-41 Percentile 40-59	91	46	5	Over 50
Raw Score 27-33 Percentile 20-39	79	30	-	Over 50
Raw Score 1-26 Percentile -19	92	50	-	From 10 to 20

Table 9 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959	UNIVERSITY OF MINNESOTA AT DULUTH SEX: MALE SIZE OF TOTAL GROUP: Over 300

Table 9a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshmen obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	70	21	Over 50
60-79	95	47	4	Over 50
40-59	88	15	-	Over 50
20-39	79	22	2	Over 50
-19	63	7	-	From 20 to 50

Table 9b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	74	29	From 20 to 50
Raw Score 42-50 Percentile 60-79	97	53	10	Over 50
Raw Score 34-41 Percentile 40-59	96	41	5	Over 50
Raw Score 27-33 Percentile 20-39	90	32	3	Over 50
Raw Score 1-26 Percentile -19	74	24	2	Over 50

Table 10
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

UNIVERSITY OF MINNESOTA
AT DULUTH

SEX: FEMALE
SIZE OF TOTAL GROUP: From 100 to 300

Table 10a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	86	22	Over 50
60-79	99	52	5	Over 50
40-59	97	27	-	From 20 to 50
20-39	83	11	-	From 10 to 20
-19	50	-	-	Less Than 10

Table 10b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	80	32	Over 50
Raw Score 42-50 Percentile 60-79	99	81	17	Over 50
Raw Score 34-41 Percentile 40-59	99	65	10	Over 50
Raw Score 27-33 Percentile 20-39	96	54	4	Over 50
Raw Score 1-26 Percentile -19	94	33	-	Over 50

Table 11
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

AUGSBURG COLLEGE

SEX: MALE AND FEMALE
SIZE OF TOTAL GROUP: From 100 to 300

Table 11a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	98	84	30	Over 50
60-79	91	43	1	Over 50
40-59	78	24	-	Over 50
20-39	67	8	-	From 20 to 50
-19	99	14	-	Less Than 10

Table 11b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	92	44	From 20 to 50
Raw Score 42-50 Percentile 60-79	94	67	17	From 20 to 50
Raw Score 34-41 Percentile 40-59	88	60	9	Over 50
Raw Score 27-33 Percentile 20-39	83	29	2	Over 50
Raw Score 1-26 Percentile -19	83	21	-	Over 50

Table 12
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

CARLETON COLLEGE

SEX: MALE AND FEMALE
SIZE OF TOTAL GROUP: From 50 to 100

Table 12a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	87	25	Over 50
60-79	99	42	-	From 10 to 20
40-59	99	67	-	Less Than 10
20-39	99	33	33	Less Than 10
-19	-	-	-	---

Table 12b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	75	25	Over 50
Raw Score 42-50 Percentile 60-79	99	87	-	From 10 to 20
Raw Score 34-41 Percentile 40-59	99	57	-	Less Than 10
Raw Score 27-33 Percentile 20-39	99	99	33	Less Than 10
Raw Score 1-26 Percentile -19	99	-	-	Less Than 10

Table 13
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

CONCORDIA COLLEGE

SEX: MALE AND FEMALE
SIZE OF TOTAL GROUP: From 100 to 300

Table 13a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	87	36	Over 50
60-79	96	66	4	Over 50
40-59	96	35	-	From 20 to 50
20-39	83	17	-	From 10 to 20
-19	99	-	-	Less Than 10

Table 13b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	96	65	From 20 to 50
Raw Score 42-50 Percentile 60-79	99	80	11	From 20 to 50
Raw Score 34-41 Percentile 40-59	99	63	8	Over 50
Raw Score 27-33 Percentile 20-39	95	57	9	Over 50
Raw Score 1-26 Percentile -19	92	52	6	Over 50

Table 14
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

HAMLINE UNIVERSITY

SEX: MALE AND FEMALE
SIZE OF TOTAL GROUP: From 100 to 300

Table 14a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	81	32	Over 50
60-79	95	50	2	Over 50
40-59	80	15	-	From 20 to 50
20-39	55	-	-	From 10 to 20
-19	33	-	-	Less Than 10

Table 14b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	98	86	44	Over 50
Raw Score 42-50 Percentile 60-79	93	57	13	Over 50
Raw Score 34-41 Percentile 40-59	92	48	10	Over 50
Raw Score 27-33 Percentile 20-39	88	41	3	From 20 to 50
Raw Score 1-26 Percentile -19	80	30	-	From 20 to 50

Table 15
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

MACALESTER COLLEGE

SEX: MALE AND FEMALE
SIZE OF TOTAL GROUP: Over 300

Table 15a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	86	28	Over 50
60-79	99	43	1	Over 50
40-59	95	27	-	From 20 to 50
20-39	99	50	-	Less Than 10
-19	99	50	-	Less Than 10

Table 15b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	88	36	Over 50
Raw Score 42-50 Percentile 60-79	97	66	19	Over 50
Raw Score 34-41 Percentile 40-59	99	58	3	Over 50
Raw Score 27-33 Percentile 20-39	99	48	2	Over 50
Raw Score 1-26 Percentile -19	99	50	-	Less Than 10

Table 16
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

COLLEGE OF ST. CATHERINE

SEX: FEMALE
SIZE OF TOTAL GROUP: From 100 to 300

Table 16a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	88	41	Over 50
60-79	95	66	6	Over 50
40-59	97	41	5	From 20 to 50
20-39	79	43	14	From 10 to 20
-19	99	33	33	Less Than 10

Table 16b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	88	52	Over 50
Raw Score 42-50 Percentile 60-79	99	72	17	Over 50
Raw Score 34-41 Percentile 40-59	93	69	12	From 20 to 50
Raw Score 27-33 Percentile 20-39	98	63	9	From 20 to 50
Raw Score 1-26 Percentile -19	81	25	6	From 10 to 20

Table 17
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

ST. JOHN'S UNIVERSITY

SEX: MALE
SIZE OF TOTAL GROUP: From 100 to 300

Table 17a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	91	35	Over 50
60-79	99	70	8	Over 50
40-59	99	46	-	From 20 to 50
20-39	99	44	-	Less Than 10
-19	99	40	-	Less Than 10

Table 17b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	96	40	Over 50
Raw Score 42-50 Percentile 60-79	98	84	28	Over 50
Raw Score 34-41 Percentile 40-59	99	78	8	Over 50
Raw Score 27-33 Percentile 20-39	99	43	4	From 20 to 50
Raw Score 1-26 Percentile -19	99	39	7	From 20 to 50

Table 18
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

COLLEGE OF ST. THOMAS

SEX: MALE
SIZE OF TOTAL GROUP: Over 300

Table 18a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	95	72	27	Over 50
60-79	95	53	6	Over 50
40-59	94	33	4	Over 50
20-39	82	21	-	Over 50
-19	77	9	-	From 20 to 50

Table 18b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	77	32	Over 50
Raw Score 42-50 Percentile 60-79	90	49	12	Over 50
Raw Score 34-41 Percentile 40-59	89	49	3	Over 50
Raw Score 27-33 Percentile 20-39	96	35	6	Over 50
Raw Score 1-26 Percentile -19	85	28	2	Over 50

Table 19
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

COLLEGE OF
ST. SCHOLASTICA

SEX: FEMALE
SIZE OF TOTAL GROUP: From 50 to 100

Table 19a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	82	36	From 20 to 50
60-79	99	68	14	From 20 to 50
40-59	99	60	-	From 10 to 20
20-39	99	60	-	Less Than 10
-19	99	-	-	Less Than 10

Table 19b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	90	55	From 20 to 50
Raw Score 42-50 Percentile 60-79	99	79	25	From 20 to 50
Raw Score 34-41 Percentile 40-59	99	80	13	From 10 to 20
Raw Score 27-33 Percentile 20-39	99	64	7	From 10 to 20
Raw Score 1-26 Percentile -19	99	58	25	From 10 to 20

Table 20
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

ELY JUNIOR COLLEGE

SEX: MALE AND FEMALE
SIZE OF TOTAL GROUP: From 50 to 100

Table 20a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	99	26	From 10 to 20
60-79	99	85	-	From 10 to 20
40-59	93	60	7	From 10 to 20
20-39	92	23	-	From 10 to 20
-19	67	-	-	Less Than 10

Table 20b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	99	38	Less Than 10
Raw Score 42-50 Percentile 60-79	99	90	10	From 10 to 20
Raw Score 34-41 Percentile 40-59	99	73	-	From 10 to 20
Raw Score 27-33 Percentile 20-39	93	46	-	From 10 to 20
Raw Score 1-26 Percentile -19	85	40	10	From 20 to 50

Table 21
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

ROCHESTER JUNIOR COLLEGE

SEX: MALE AND FEMALE
SIZE OF TOTAL GROUP: From 100 to 300

Table 21a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	95	77	16	From 20 to 50
60-79	96	62	9	From 20 to 50
40-59	97	50	-	From 20 to 50
20-39	86	41	3	From 20 to 50
-19	99	-	-	Less Than 10

Table 21b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	95	70	25	From 20 to 50
Raw Score 42-50 Percentile 60-79	93	53	3	From 20 to 50
Raw Score 34-41 Percentile 40-59	97	62	9	From 20 to 50
Raw Score 27-33 Percentile 20-39	91	50	6	From 20 to 50
Raw Score 1-26 Percentile -19	92	54	3	From 20 to 50

Table 22
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

VIRGINIA JUNIOR COLLEGE

SEX: MALE AND FEMALE
SIZE OF TOTAL GROUP: From 100 to 300

Table 22a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	89	75	36	Over 50
60-79	99	81	12	From 20 to 50
40-59	99	64	2	From 20 to 50
20-39	93	30	4	From 20 to 50
-19	82	27	18	From 10 to 20

Table 22b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshmen obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	92	50	From 20 to 50
Raw Score 42-50 Percentile 60-79	99	88	38	From 20 to 50
Raw Score 34-41 Percentile 40-59	99	70	14	From 20 to 50
Raw Score 27-33 Percentile 20-39	87	61	5	From 20 to 50
Raw Score 1-26 Percentile -19	89	33	-	From 20 to 50

Table 23
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

AUSTIN JUNIOR COLLEGE

SEX: MALE AND FEMALE
SIZE OF TOTAL GROUP: From 100 to 300

Table 23a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshmen obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	91	33	From 20 to 50
60-79	96	60	2	From 20 to 50
40-59	76	21	3	From 20 to 50
20-39	70	26	4	From 20 to 50
-19	50	20	-	From 10 to 20

Table 23b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	93	43	From 10 to 20
Raw Score 42-50 Percentile 60-79	99	83	17	From 10 to 20
Raw Score 34-41 Percentile 40-59	89	60	11	From 20 to 50
Raw Score 27-33 Percentile 20-39	79	52	9	From 20 to 50
Raw Score 1-26 Percentile -19	82	31	2	Over 50

Table 24
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

BRAINERD JUNIOR COLLEGE

SEX: MALE AND FEMALE
SIZE OF TOTAL GROUP: From 50 to 100

Table 24a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	86	48	From 20 to 50
60-79	94	61	6	From 10 to 20
40-59	99	31	--	From 10 to 20
20-39	99	33	17	Less Than 10
-19	40	20	--	Less Than 10

Table 24b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	92	54	From 10 to 20
Raw Score 42-50 Percentile 60-79	99	83	17	Less Than 10
Raw Score 34-41 Percentile 40-59	92	50	17	From 10 to 20
Raw Score 27-33 Percentile 20-39	92	38	8	From 10 to 20
Raw Score 1-26 Percentile -19	87	40	7	From 10 to 20

Table 25
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

BEMIDJI STATE COLLEGE

SEX: MALE AND FEMALE
SIZE OF TOTAL GROUP: From 100 to 300

Table 25a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	86	24	Over 50
60-79	98	59	-	Over 50
40-59	98	30	2	Over 50
20-39	94	29	-	From 20 to 50
-19	91	18	-	From 10 to 20

Table 25b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshmen obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	96	43	From 20 to 50
Raw Score 42-50 Percentile 60-79	99	68	14	From 20 to 50
Raw Score 34-41 Percentile 40-59	99	75	14	From 20 to 50
Raw Score 27-33 Percentile 20-39	98	54	-	Over 50
Raw Score 1-26 Percentile -19	96	35	2	Over 50

Table 26
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

MANKATO STATE COLLEGE

SEX: MALE AND FEMALE
SIZE OF TOTAL GROUP: Over 300

Table 26a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	95	33	Over 50
60-79	99	77	8	Over 50
40-59	97	51	2	Over 50
20-39	91	38	1	Over 50
-19	86	5	-	Over 50

Table 36b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	97	49	Over 50
Raw Score 42-50 Percentile 60-79	98	82	23	Over 50
Raw Score 34-41 Percentile 40-59	99	76	13	Over 50
Raw Score 27-33 Percentile 20-39	98	66	6	Over 50
Raw Score 1-26 Percentile -19	93	43	3	Over 50

Table 27
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

MOORHEAD STATE COLLEGE

SEX: MALE AND FEMALE
SIZE OF TOTAL GROUP: From 100 to 300

Table 27a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	90	34	Over 50
60-79	99	76	9	Over 50
40-59	91	45	-	From 20 to 50
20-39	88	32	-	From 20 to 50
-19	50	5	-	From 20 to 50

Table 27b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	96	96	57	From 20 to 50
Raw Score 42-50 Percentile 60-79	97	87	13	From 20 to 50
Raw Score 34-41 Percentile 40-59	99	82	13	From 20 to 50
Raw Score 27-33 Percentile 20-39	98	63	8	Over 50
Raw Score 1-26 Percentile -19	81	32	2	Over 50

Table 28
Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959

WINONA STATE COLLEGE

SEX: MALE AND FEMALE
SIZE OF TOTAL GROUP: From 100 to 300

Table 28
Predictions Based on HSR

High School Rank Quintile Rank	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	91	33	Over 50
60-79	98	81	10	Over 50
40-59	98	52	-	From 20 to 50
20-39	89	31	-	From 20 to 50
-19	86	21	-	From 10 to 20

Table 28b
Predictions Based on MSAT

MSAT Quintile Rank	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	88	41	From 10 to 20
Raw Score 42-50 Percentile 60-79	99	87	27	From 20 to 50
Raw Score 34-41 Percentile 40-59	99	82	26	Over 50
Raw Score 27-33 Percentile 20-39	98	72	-	From 20 to 50
Raw Score 1-26 Percentile -19	90	38	1	Over 50

Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959	UNIVERSITY OF MINNESOTA INSTITUTE OF TECHNOLOGY SEX: MALE SIZE OF TOTAL GROUP: Over 300

Appendix

Special Expectancy Table for the
Institute of Technology Mathematics Admissions Test

Because of a decision in the winter of 1961 by the faculty of the University of Minnesota Institute of Technology to continue the Mathematics Test as an admissions requirement, the authors decided to include an expectancy table for it. The decision to continue the mathematics test as an admissions requirement was based on recently completed research in the Student Counseling Burea. The mathematics test showed a higher correlation with first quarter grades than did the HSR or Minnesota Scholastic Aptitude Test score or any other measure studied. Though the authors originally had decided to include expectancy tables only for HSR and MSAT, they thought the expectancy tables for the IT Mathematics Test would be useful to Minnesota counselors.

Predictions Based on
the IT Mathematics Admissions Test

Quintile Group* (Percentiles)	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	97	75	22	Over 50
60-79	95	50	5	Over 50
40-59	83	30	8	Over 50
20-39	55	11	-	Over 50
-19	35	3	-	From 20 to 50

* These percentiles are based on entering freshmen to the Institute of Technology.
These groups are based on the IT Mathematics Test, Form Y. However, as Forms X, Y, and Z are very similar, it is reasonably accurate to enter the percentile obtained from any one of these three forms.

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DISTRIBUTION AMONG MINNESOTA COLLEGES OF FRESHMEN ACCORDING TO ABILITY

by

Ralph F. Berdie and Edward O. Swanson
Student Counseling Bureau

The proportion of high school graduates with varying abilities attending different Minnesota colleges is reported here.

High school rank and score on the Minnesota Scholastic Aptitude Test, obtained through the State-Wide College Testing Program of the Association of Minnesota Colleges, are the indices of ability.

CONTENTS

INTRODUCTION

Of Minnesota college freshmen, what proportions coming from the upper ten percent of their high school class attend the University, liberal arts colleges, state colleges, and junior colleges? How do college freshmen who come from the lower ten percent of their class distribute themselves among these colleges? Do some types of colleges attract proportionately more high-ability students than other colleges, and do some attract proportionately more low-ability students? Answers to these questions will help colleges to understand their students and to study problems the colleges face in attracting, admitting, and keeping students.

For more than 30 years the Office of the Dean of Students has disseminated reports which show how the average student in one type of college differs from the average student in another. These analyses have been summarized in "Who Goes to College?" published by the University of Minnesota Press (1). The analyses have allowed inferences to be made concerning the extent to which colleges attract high-ability or low-ability students, but inferences based on averages are not the same as inferences based on more detailed information about specific distributions. The analysis described here provides more detailed information.

INFORMATION AVAILABLE

In the present analysis two indices were used, scores on a test of scholastic aptitude and high school achievement as shown by high school percentile rank. For the 1959-60 group, scholastic aptitude was measured by the Minnesota Scholastic Aptitude Test taken during the student's junior year in high school. For the 1958-59 group, scholastic aptitude was measured by the American Council on Education Psychological Examination, College Edition, 1952, also taken during the student's junior year in high school. High school achievement was measured by the high school percentile rank derived from the student's grades as of the end of the junior year in high school.

The Minnesota Scholastic Aptitude Test is an abbreviated version of the Ohio Psychological Test. It contains analogy, same-opposite, and reading comprehension items. The test has satisfactory reliability and the correlations in different colleges between the test and freshmen grades range from .08 to .96. Most of the validity correlations fall in the range from .40 to .65. High school percentile rank, the second index, correlates with college freshmen grades from .27 to .93. A detailed analysis of the validity of the predictors in Minnesota colleges has been published in a Research Bulletin of the Office of the Dean of Students (2).

The American Council on Education Psychological Examination contains items measuring verbal and quantitative abilities. Correlation coefficients between scores on it and college grades are similar to those cited for the Minnesota Scholastic Aptitude Test and college grades.

Information in the present report is summarized for two groups of students, Minnesota college freshmen who entered college in 1958-59 and those who entered college in 1959-60. In both of these groups all students were included who were graduates of Minnesota high schools and who had taken the Minnesota Scholastic Aptitude Test or the ACE in their junior year in high school as part of the Minnesota State-Wide College Testing Program. In the distributions for high school percentile rank, a few students were included for whom this index was available but for whom test scores were not. In this analysis information for men and women have been combined although earlier reports indicated substantial sex differences of means, particularly in regard to high school percentile rank.

RESULTS

Of the fall 1959 entering Minnesota college freshmen who graduated from Minnesota high schools in the spring of 1959, 38 percent attended the University of Minnesota, 30 percent attended four-year liberal arts colleges, 21 percent attended state colleges, and 11 percent junior colleges. Table 1 shows the proportion of Minnesota college freshmen in 1959-60 at each ability level as shown by the Minnesota Scholastic Aptitude Test (MSAT) who were enrolled in each of the four types of colleges. The ability levels are defined by the raw score and the percentile score points on the test selected to include approximately five percent of the total group at each level. Of the 10,842 students in the total group for whom test scores were available, 518 had scores extending from 63 through 78, 583 had scores from 57 through 62, etc. A raw score of 63 corresponds to a percentile score of 95, one of 78 to a percentile score of 100, when the percentile scores are derived from the norms based on high school juniors tested in grade 11 who later as freshmen entered the College of Science, Literature, and Arts, and the General College of the University of Minnesota. The norms for these two University colleges closely approximate the norms for freshmen in all Minnesota colleges. Thus, approximately five percent of all of the students had scores in the top category. Of the total group of 10,842 students, 4069 or 38 percent attended the University of Minnesota, 30 percent attended liberal arts colleges etc. Of the 518 students in the top five percent category, 40 percent attended the University of Minnesota, 46 percent attended four-year liberal arts colleges, etc. Although the state colleges enrolled 21 percent of all freshmen, Table 1 shows they only enrolled eight percent of the students in the top category and the junior colleges, enrolling 11 percent of all freshmen, had only six percent of the students in the top category. Of all of the 521 students in the bottom category, 33 percent were in the University, 12 percent in the four-year liberal arts colleges, 34 percent in the state colleges, and 21 percent in the junior colleges.

The differences among the four columns are apparent. The University, on the whole, attracts relatively the same proportion of students from all ability levels with a somewhat larger proportion in the upper ability groups and a smaller proportion in the lower ability groups. The four-year liberal arts colleges attract a greater proportion of students from the upper ability groups than from other ability levels, and the state colleges and junior colleges attract a larger proportion of students from the lower ability groups than from the higher ability groups, with the state colleges attracting a small proportion of students from the very top ability group.

Some of the information in Table 1 is shown graphically in Figure 1. In this figure the percentages in the top and bottom four categories from table one are plotted as bar graphs and the base rates for each college are shown by the four seriated horizontal lines. These four lines represent the total percent of all freshmen, regardless of ability, in each type of college. The graph demonstrates the extent to which each type of college attracts proportionately more or fewer than its "share" of students at the selected ability levels.

The right hand side of Table 1 presents the same figures in a cumulative order. For example, of the 4069 freshmen entering the University of Minnesota, 39 percent have percentile scores of 62 or above whereas of the 3275 students who entered the four-year liberal arts colleges, 45 percent had scores within this range. Thus, 1587 University freshmen, or 39 percent of the University class, and 1474 liberal arts college freshmen, or 45 percent of the liberal arts classes, had scores placing them in the upper 36 percent of all Minnesota freshmen. Corresponding percentages for the state colleges and the junior colleges were 22 and 26 percent. The average raw score for the total group of Minnesota freshmen was between 35 and 36. Having scores above this point were 58 percent of University freshmen, 65 percent of four-year liberal arts college freshmen, 39 percent of state college freshmen, and 43 percent of junior college freshmen.

Table 2 presents similar figures based on high school percentile rank for all of the Minnesota freshmen of that year for whom this index was available. Of the total group of 10,863 Minnesota freshmen, 4069, or 37 percent entered the University but of the 520 freshmen in the upper one percent of their high school class, only 34 percent entered the University. A far larger proportion of these top students, 48 percent, entered four-year liberal arts colleges; 13 percent entered state colleges, and five percent entered junior colleges. When we look at the group just below the very top group, we see that 42 percent of these 572 superior students entered the University, as compared to 41 percent who entered the four-year liberal arts colleges, 12 percent the state colleges, and five percent the junior colleges. Of all Minnesota college freshmen, 20 percent were from the upper 10 percent of their high school class, and the same proportion was found in the University. In the private four-year liberal arts colleges, 27 percent of all freshmen were from the upper 10 percent of their high school class whereas in the state colleges and junior colleges, only 13 and 12 percent were. Some of the Table 2 data are shown graphically in Figure 2. The explanation and legends for Figure 1 also apply to Figure 2 except in Figure 2 we are showing the four highest and four lowest categories on high school percentile rank rather than on the Minnesota Scholastic Aptitude Test.

Table 3 presents an analysis comparable to that in Table 1 for the freshmen in the University of Minnesota according to college within the University. The first column in the body of the table under University of Minnesota with the University of Minnesota in Duluth (U.M.D.) is the same as the corresponding column in Table 1. Thus, the first figure in the column indicates that of all of the 518 Minnesota college freshmen with percentile scores of from 95-100, 40 percent were in the University of Minnesota. Look at the same row in the following columns. Of the total group of 518 Minnesota college freshmen,

27 percent were in the College of Science, Literature and the Arts, eight percent in the Institute of Technology, none in the General College, three percent in the University of Minnesota at Duluth and two percent in other divisions of the University. Of the total 10,842 college freshmen in the state, 1644 or 15 percent, were in the College of Science, Literature and the Arts, but 27 percent of the 518 Minnesota college freshmen in the top score group were in that college. The Institute of Technology enrolled only six percent of all college freshmen in the state, but eight percent of the top scoring category were in that college.

An analysis similar to that shown in Table 3 but using High School Percentile Rank reveals that the proportion of students in the Arts College from the top category was the same as the proportion of all students in that college regardless of category but that the proportion of students in the Institute of Technology in the top category was larger than the proportion of all students in that college. Additional data for the year 1958-59 are not greatly different from those in Table 2 with the exception that in the earlier years the Arts College drew a somewhat larger proportion of students from the upper one percent of the high school class.

STUDENTS IN THE UPPER ELEVEN PERCENT

Table 4 presents a more detailed analysis of some of the information contained in Table 1 in order to provide information about the distribution of students in the very top ability groups. In Table 4, of all 10,842 Minnesota freshmen, 118 had a percentile score of 88 on the aptitude test, 109 had a score of 89, and a total of 1219 had scores ranging from 88 through 100. Thus we are concerned here with 11 percent of the total freshmen class. Of this top 11 percent, 507 attended the University, 519 attended liberal arts colleges, 114 attended state colleges, and 79 attended junior colleges. Of the total 10,842 students, 4.68 percent had scores extending from 56 through 78 and attended the University, 4.79 had scores in this range and attended liberal arts colleges, 1.05 had scores in this range and attended state colleges, and .73 percent had scores in this range and attended junior colleges.

Of the 10,842 students, 81 had percentile scores of 100. Of these 81 students, 30 or .28 percent of the 10,842 students attended the University. From this very top score category 45, or .42 percent of the total group attended four-year liberal arts colleges, 4, or .04 percent attended state colleges, and 2, or .02 percent attended junior colleges.

Four hundred twenty-nine students had percentile scores of 96 or higher. Of these,175 entered the University, 198 liberal arts college, 31 state colleges, and 25 junior colleges. The discrepancy between the University and the liberal arts colleges in attracting high ability students mainly concerns students in the upper five percent of ability and achievement.

CONCLUSIONS

1. Students with a broad range of abilities and high school records are attending Minnesota colleges.

2. A greater proportion of high-ability and high-achieving students are entering Minnesota colleges than of low-ability and low-achieving students. The number of students drawn from the upper one percent of the high school class is almost equal to the number of students drawn from the lower 20 percent of the high school class. Eighty percent of Minnesota college freshmen are drawn from the upper one-half of their high school class.

3. The University, the private four-year liberal arts colleges, the state colleges, and the junior colleges attract proportionately different numbers of students from varying ability and achievement levels. The University tends to draw a group of freshmen roughly comparable to freshmen in all Minnesota colleges. The four-year liberal arts colleges tend to draw proportionately a larger number from the high-ability students whereas the state colleges and junior colleges tend to draw proportionately more from the lower-ability students.

4. Although the proportions of high-ability students drawn to the University and to the four-year liberal arts colleges are different, the absolute numbers in these groups are not essentially different. For example, 1587 University students were drawn from the upper 36 percent of all Minnesota college freshmen, as compared to 1474 of the four-year liberal arts college freshmen. The number of Minnesota students in the University who came from the upper ten percent of the high school class is about the same as the number from the upper ten percent in all liberal arts colleges.

5. The liberal arts colleges attract a disproportionately high number of students from the very top-ability and achievement levels.

6. The University attracts a disproportionately high number of students from the high-ability, high-achieving groups just below the very top level.

7. The figures for the two year study, 1958-59 and 1959-60 are not identical and suggest that changes may be occurring in the distribution by ability of college freshmen among Minnesota colleges.

8. All types of Minnesota colleges have some students from the very top ability levels and some from the very bottom ability groups.

9. The generalizations from analyses of college aptitude test scores and high school percentile ranks tend to be similar. Minor differences perhaps can be explained by greater emphasis in some colleges than in others on one or the other of the two indices as used for admissions purposes.

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1) Berdie, R. F., Layton, W. L., Swanson, E. O., and Hagenah, Theda, Who Goes to College? Minneapolis: University of Minnesota Press. 1962.

2) Swanson, E.O. and Berdie, R. F.,"The Relationship of the Minnesota College State-Wide Program Test Scores to First Year Grade Point Averages in Minnesota Colleges and a Survey of Scholastic Aptitude in Minnesota Colleges," Research Bulletin of the Office of the Dean of Students, Vol. 3, No. 1, March 1961. Minneapolis: University of Minnesota.

Table 1

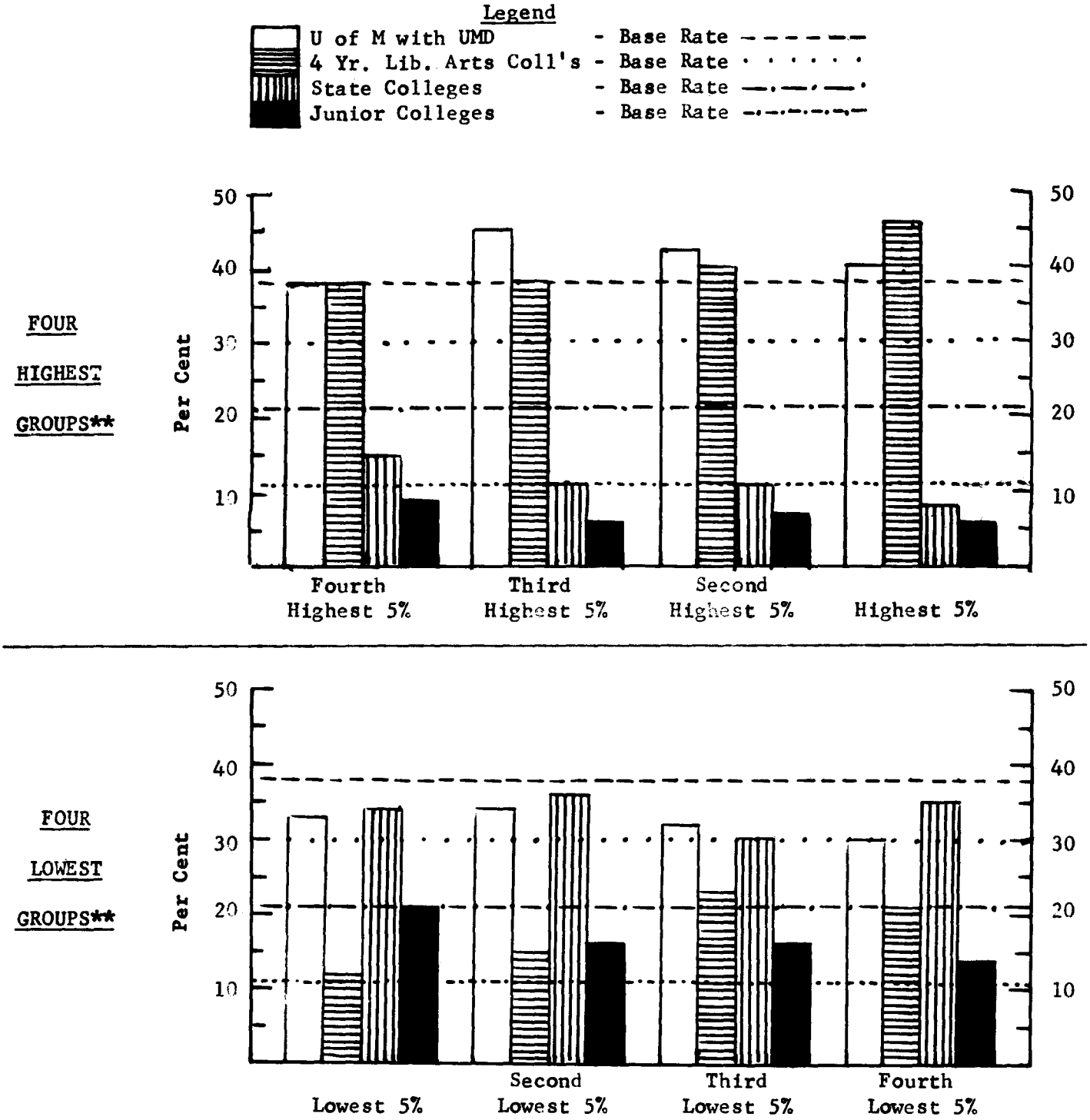
Proportion of Minnesota College Freshmen * (1959-60) At Each Ability Level As Shown By Score on the Minnesota Scholastic Aptitude Test Who Were Enrolled in Types of Colleges (males plus females)

MSAT Raw Score Category	MSAT %ile Score Category	All Minn Coll's No. in MSAT Category	Proportion of No. in MSAT Category				Cumulated Per Cent From High to Low Scores for:**				
			U of M w/ UMD	4 yr Lib Arts Coll's	State Coll's	Junior Coll's	All Minn Coll's	U of M w/ UMD	4 yr Lib Arts Coll's	State Coll's	Junior Coll's
63-78	95-100	518	40	46	8	6	5	5	7	2	3
57-62	89-94	583	42	40	11	7	10	11	14	5	6
53-56	84-88	527	45	38	11	6	15	17	20	7	9
50-52	79-82	489	38	38	15	9	20	22	26	10	12
47-49	73-77	576	43	36	13	9	25	28	32	14	16
45-46	68-71	467	42	36	15	8	29	32	37	17	19
42-44	62-66	717	37	35	18	10	36	39	45	22	26
40-41	56-59	568	36	33	19	12	41	44	51	27	31
39	54	281	41	31	19	10	44	47	53	29	33
37-38	48-51	602	43	34	18	5	49	53	60	34	36
35-36	43-46	553	36	29	19	16	54	58	65	39	43
33-34	37-40	629	39	29	22	10	60	64	70	45	48
32	34	333	35	27	27	11	63	67	73	49	51
30-31	29-32	591	35	29	24	13	69	72	78	55	58
28-29	24-27	609	37	28	24	11	74	77	83	61	63
26-27	19-22	572	38	25	24	13	79	82	88	67	70
24-25	15-17	507	30	21	35	14	84	86	91	75	76
21-23	9-13	713	32	23	30	16	91	92	96	85	85
18-20	5-8	486	34	15	36	16	95	96	98	92	91
5-17	1-4	521	33	12	34	21	100	100	100	100	100
Total %		100	38	30	21	11	100	100	100	100	100
N in Group		10842	4069	3275	2282	1216	10842	4069	3275	2282	1216

* The numbers represent freshmen who entered Minnesota colleges in the fall of 1959, who graduated from Minnesota high schools in the spring of 1959, and for whom Minnesota State-Wide Program Test Scores were available. All Minnesota colleges cooperated in the study from which these data were obtained.

** The numbers in each category were cumulated from the high category downwards and translated into a cumulated per cent on the basis of the number in each college category (given at the bottom of each column).

Figure 1
A Comparison of College Group Base Rates* With the Per Cent of High and Low Ability Students Actually Attending Those Colleges According to Minnesota Scholastic Aptitude Test Results



* The base rates on MSAT for each college group are from Table 1. They are the per cents found in the row "Total %," columns 3-6.

** The four highest and four lowest ability level groups are from Table 1. The high groups are the MSAT Raw Score categories from 50-52 and up and the low groups the categories 24-25 and down.

Table 2

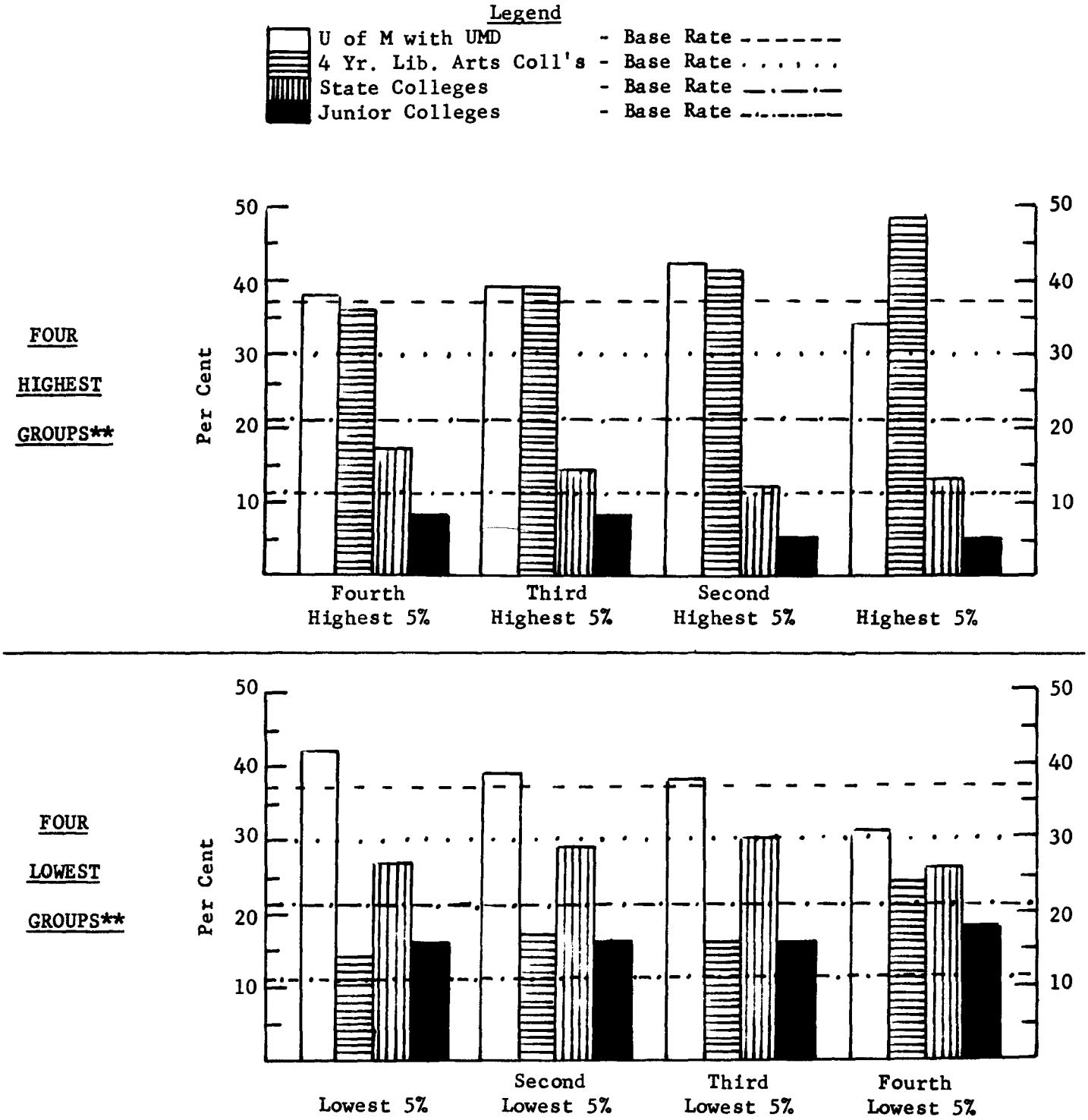
Proportion of Minnesota College Freshmen * (1959-60) At Each Ability Level As Shown By High School Rank Who Were Enrolled in Types of Colleges (males plus females)

HSR Category	All Minn Coll's No. in HSR Category	Proportion of No. in HSR Category				Cumulated Per Cent From High to Low HSR for: **				
		U of M w/ UMD	4 yr Lib Arts Coll's	State Coll's	Junior Coll's	All Minn Coll's	U of M w/ UMD	4 yr Lib Arts Coll's	State Coll's	Junior Coll's
99-100	520	34	48	13	5	5	4	8	3	2
96-98	572	42	41	12	5	10	10	15	6	5
94-95	433	39	39	14	8	14	15	20	9	7
91-93	623	38	36	17	8	20	20	27	13	12
88-90	577	37	35	18	10	25	26	33	18	16
85-87	582	40	32	19	9	31	31	38	23	21
82-84	542	35	35	20	10	36	36	44	27	25
79-81	579	39	34	19	8	40	41	49	32	29
76-78	486	37	34	19	10	45	45	54	36	33
72-75	652	38	31	20	11	51	51	61	41	38
69-71	424	34	27	26	13	55	55	64	46	43
65-68	562	37	31	22	10	60	60	69	52	47
60-64	605	35	30	21	14	66	65	75	57	54
56-59	452	36	31	21	12	70	69	79	62	58
50-55	639	37	27	24	12	76	75	84	68	65
44-49	532	39	25	23	13	81	80	88	74	71
37-43	534	31	24	26	18	85	84	92	80	79
30-36	504	38	16	30	16	90	89	95	86	85
20-29	554	39	17	29	16	95	94	98	93	93
1-19	551	42	14	27	16	100	100	100	100	100
Total %	100	37	30	21	11	100	100	100	100	100
N in Group	10863	4069	3288	2283	1223	10863	4069	3288	2283	1223

* The numbers represent freshmen who entered Minnesota colleges in the fall of 1959, who graduated from Minnesota high schools in the spring fo 1959, and for whom Minnesota State-Wide Program Test Scores were available. All Minnesota colleges cooperated in the study from which these data were obtained.

** The numbers in each category were cumulated from the high category downwards and translated into a cumulated per cent on the basis of the number in each college category (given at the bottom of each column).

Figure 2
A Comparison of College Group Base Rates* With the Per Cent of High and Low Ability Students Actually Attending Those Colleges According to High School Percentile Rank



* The base rates on HSR for each college group are from Table 2. They are the per cents found in the row "Total %", columns 3-6.

** The four highest and four lowest ability level groups are from Table 2. The high groups are the HSR categories from 91-93 and up and the low groups the categories 37-43 and down.

Table 3

Proportion of University of Minnesota Freshmen*(1959-60)
At Each Ability Level As Shown By
Score on the Minnesota Scholastic Aptitude Test
Who Were Enrolled in University Colleges
(males plus females)

MSAT Raw Score Category	MSAT %ile Score Category	All Minn Coll's No. in MSAT Category	Proportion of No. in MSAT Category						
			U of M w/ UMD	SIA	IT	GC	UMD	Other U of M	U of M w/o UMD
63-78	95-100	518	40	27	8	0	3	2	37
57-62	89-94	583	42	23	10	0	5	4	37
53-56	84-88	527	45	24	9	0	8	4	37
50-52	79-82	489	38	20	7	1	5	5	33
47-49	73-77	576	43	20	10	1	7	5	36
45-46	68-71	467	42	20	11	0	6	5	36
42-44	62-66	717	37	19	7	0	6	5	31
40-41	56-59	568	36	20	7	1	4	4	32
39	54	281	41	17	8	2	6	8	35
37-38	48-51	602	43	17	7	1	12	6	31
35-36	43-46	553	36	17	8	2	2	7	34
33-34	37-40	629	39	16	6	4	8	5	31
32	34	333	35	12	6	6	6	5	29
30-31	29-32	591	35	15	4	3	7	6	28
28-29	24-27	609	37	14	4	7	7	5	30
26-27	19-22	572	38	10	3	9	8	8	30
24-25	15-17	507	30	6	2	11	5	6	25
21-23	9-13	713	32	3	2	15	6	6	26
18-20	5-8	486	34	3	1	16	6	8	28
5-17	1-4	521	33	1	1	20	6	5	27
Total %		100	38	15	6	5	6	5	31
N in Group		10842	4069	1644	642	547	664	572	3405

* The numbers represent freshmen who entered Minnesota colleges in the fall of 1959, who graduated from Minnesota high schools in the spring of 1959, and for whom Minnesota State-Wide Program Test Scores were available. All Minnesota colleges cooperated in the study from which these data were obtained.

Table 4

Distribution Across College Groups
Of the Upper 11 Per Cent of Students
On the Minnesota Scholastic Aptitude Test
Broken Down by Single Score Categories

MSAT Raw Score Category	MSAT %ile Score Category	All Minn Coll's No. in MSAT Category	Per Cent* of No. in MSAT Category			
			U of M w/ UMD	4 yr Lib Arts Coll's	State Coll's	Junior Coll's
56	88	118	.52	.46	.06	.06
57	89	109	.43	.39	.10	.08
58	90	113	.48	.34	.12	.10
59	92	112	.42	.42	.13	.07
60	93	89	.36	.32	.11	.03
61	94	81	.29	.33	.07	.06
62	94	79	.27	.34	.07	.05
63	95	89	.30	.35	.10	.07
64-65	96-97	118	.55	.36	.13	.05
66-67	98	106	.40	.42	.08	.07
68-70	99	124	.39	.63	.04	.09
71-up	100	81	.28	.42	.04	.02
Total %		11.24	4.68	4.79	1.05	.73
N in Group		1219	507	519	114	79

* Per Cents are based on the 10,842 students entering Minnesota colleges in the fall of 1959.

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A SURVEY OF SCHOLASTIC APTITUDE IN MINNESOTA COLLEGES

by

Edward O. Swanson, Jack C. Merwin
and Ralph F. Berdie
Student Counseling Bureau

This report is based on freshmen entering all Minnesota Colleges in the fall of 1961 who were tested as juniors in the 1959-60 State-Wide College Testing Program.

CONTENTS

INTRODUCTION

This survey of the scholastic aptitude of graduates of Minnesota high schools who entered Minnesota colleges in the fall of 1961 was made possible through the continuing cooperation between the colleges and high schools of the state. The history of such studies in Minnesota dates back to 1930 for some colleges, with statewide surveys similar to that reported here having been conducted since 1937. The Minnesota State-Wide College Testing Program, which originally involved the testing of high school seniors, was first administered to high school juniors in 1953. Since 1953, five surveys of students tested as high school juniors who later entered Minnesota colleges have been completed. A historical summary of the results of the surveys that preceded the current study has recently been published under the title Who Goes To College? by Ralph F. Berdie, Wilbur L. Layton, Theda Hagenah, and Edward O. Swanson; Minnesota Studies in Student Personnel Work Series No. 12, University of Minnesota Press. The present report presents data which bring up to date this chain of important educational information about Minnesota students.

COMPLETENESS OF DATA

The freshmen in Minnesota colleges in the fall of 1961 were tested through the Minnesota State-Wide College Testing Program when they were high school juniors in 1959-60. That year 552 (98 percent) of the approximately 566 public and private high schools in Minnesota cooperated in the testing of their students. Data were obtained for 99 percent of the total number of juniors in the state that year since the schools that did not participate in the program had a relatively small number of juniors.

The State-Wide Testing Program encompasses three items of information about each student. A measure of scholastic aptitude is obtained through the administration of a scholastic aptitude test--the Minnesota Scholastic Aptitude Test (MSAT). A measure of past achievement, the high school percentile rank (HSR), is obtained by computing the student's percentile rank within his own class based on grades earned through his junior year. The Cooperative English Test (CET) is used to obtain a measure of English competency. As all three of these indices have been shown to be related to success in Minnesota colleges, they become important measures of scholastic aptitude.

All of the 40 colleges* in the state admitting freshmen cooperated to make this study possible. Tables 1 through 3 show the number and percent of entering freshmen in these colleges in 1961 who graduated from

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*This number includes seven colleges of the University of Minnesota.

Minnesota high schools since 1959 and from whom Program test scores and HSR are available. These are the freshmen who would have had an opportunity to take the MSAT which was first used in the Program in 1958. Table 4 shows how the number of freshmen available for study compares with the total number of freshmen for the various types of colleges in the state.

THE SURVEY RESULTS

The results of the survey are presented in this report in three ways.

For each of the three indices secured through the State-Wide Program, the mean and standard deviation for each college, each type of college and juniors tested in 1959-60 were computed. For each college and type of college, the means and standard deviations for males, females, and males and females combined are presented in Tables 5 through 9. Table 10 gives this same information for the sample of juniors.

Figures 1 through 3 provide a graphic comparison of results for selected groups of freshmen and the high school juniors. The wide portion of each bar indicates the range of the scores for approximately the middle two-thirds of the combined males and females in the group designated. The indentation shows the mean, or average, score for the group. The total range for each group can extend from the first to the hundredth percentiles. To illustrate the reading of the graphs, consider the bar for the sample of high school juniors. Figure 1 shows that for this group the mean HSR was just slightly above 50, with the middle two-thirds between 21.5 and 79. For this same group, Figure 2 shows that the mean raw score on the MSAT was a little over 30 and corresponds to a percentile rank of 30 when compared to college freshmen. The middle two-thirds of these students had MSAT raw scores between 16.5 and 44, corresponding to college freshmen percentiles of 3 and 66.

The two methods of presenting the data of this study described thus far have been used in previous surveys. A third method of analysis is being used for the first time in this report, and it provides a somewhat different view of the distribution of students among colleges. Tables 11 through 16 show the distribution among types of colleges of freshmen at different levels of HSR and MSAT scores.

In this analysis the entire group of freshmen for whom data were available was first divided into 20 approximately equal size subgroups at various score levels on MSAT. The same division was made based on HSR. For each subgroup the distribution of the students among the three types of colleges and the University was determined and is presented in the left half of Tables 11 and 12. For each type of college the cumulative percent within that type of college was calculated and is presented in the right half of Tables 11 and 12. For example, referring to the left half of Table 11 we find that of the total top five percent of the group on MSAT, 46 percent entered the University, 42 percent entered four-year liberal arts colleges, six percent enrolled at state colleges, and six percent attended junior colleges. Looking now at the right half of Table 11 we find that the students from the top five percent on MSAT that went

to the University comprise five percent of the total group who enrolled at the University. The students from the top group who went to four-year liberal arts colleges, on the other hand, represent nine percent of the total groups who went to these colleges.

Tables 13 and 14 show the distribution of the 43 percent of the total group of students who entered the University among the various University divisions. For example, in Table 13 we see that 29 percent of the top five percent of the total group studied enrolled in the College of Science, Literature, and the Arts and 11 percent entered the Institute of Technology.

The next step in this analysis was a closer examination of approximately the top ten percent of the total group to study in more detail the distribution of enrollment of these students. The results of this analysis are presented in Tables 15 and 16. The data of these more refined categories are organized in the same manner as the data for the five percent groupings.

Three important limitations should be seriously considered here when reviewing this method of analysis. First, this report is based on only students entering Minnesota colleges as freshmen in fall 1961 who had been tested in the Minnesota State-Wide College Testing Program since January 1, 1958. As shown in Table 4, the data are based on 15,446 of the 19,806 freshmen of 1961. While these data are based on 78 percent of all freshmen, the percent of the freshmen in each of the various colleges who are included in this survey varies considerably from one college to another.

A second important aspect of these data is the distribution of students in the various types of colleges. Thus in observing in Table 11 that 46 percent of the top five percent on MSAT attended the University and 42 percent of this group entered four-year liberal arts colleges, interpretations must be made in light of the fact that 43 percent of the total group entered the University while only 23 percent of the total group enrolled in four-year liberal arts colleges in the state. Five percent of the University freshmen and nine percent of the liberal arts college freshmen were from the top five percent of the total group on MSAT. Taking into account the size of enrollments we find 323 students (5 percent of 6,454) from this top group entered the University and 303 (9 percent of 3,362) entered four-year liberal arts colleges.

Third, a similar study was made of the 1959 entering freshmen to Minnesota colleges (1). Some small percentage shifts are observable from 1959 to 1961, but until further studies of this nature are completed, no interpretations can be made about the stability of the differences among the college groups.

TRENDS

The recent publication of Who Goes to College? provides a convenient basis for assessing the meaningfulness of the results of this survey. As in the past, small, rather than large, changes have appeared over a two year period. The women have maintained their superiority on HSR and the

Cooperative English Test for all co-educational colleges and for the juniors. The entering freshmen women average 1-5 points higher than the men on MSAT, while high school junior women average 1.2 raw score points higher than the men. The liberal arts college freshmen continue to be more like the University SLA freshmen than any other group and the state and junior college freshmen maintain their past similarities on these measures.

On the scholastic aptitude measure the mean for each of the various types of colleges showed an increase over the results of the last survey , conducted in 1959. The four-year liberal arts colleges as a group showed the largest gain. For the first time, the mean for the four-year liberal arts colleges has reached the mean for the University College of Science, Literature, and the Arts.

The mean values for HSR for the various college groups changed slightly, but not in the same direction for all groups as was the case with MSAT. Compared to the 1959 results on HSR, only the four-year liberal arts colleges and the University College of Science, Literature and the Arts showed increases. The mean HSR for the four-year liberal arts colleges reached its highest level since 1938, and slightly surpassed the mean for the College of Science, Literature, and the Arts for the first time since 1946.

In considering trends for the four-year liberal arts colleges as a group it is necessary to recognize the heterogeniety of these colleges as shown in Table 7. Thus the over all mean may go up because the means for the colleges that went up more than compensates for those that declined. The proportion of freshmen in any one college that are included in these studies (i.e., are Minnesota high school graduates) varies from college to college and from year to year within a college.

Two characteristics of this survey reflect the most important trend to be found in the results. The various aspects of this study were based on approximately 15,000 freshmen, more than has been included in any of the previous studies. The shifts noted for various college groups on the aptitude measures are in general small and positive shifts. The size of the group and the nature of the changes observed echo the comment of Dean E. G. Williamson in the preface of Who Goes To College?:

> "The results of this report should illuminate a number of problems concerning the study of the little understood effects of the tremendous increases in college enrollment on the quality of scholastic aptitudes. In far too many educational and public circles it seems taken for granted (i.e., 'It stands to reason!') that quality inevitably decreases as quantity increases. It is encouraging that this loose generalization is not supported by the research presented here."

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Table 1

Number of men who were graduated from Minnesota high schools in 1959, '60, and '61 and who were enrolled in each college and in each type of college with number and percent for whom specified scores were available.

	College Code	Total No. Freshmen Men Enrolled	Men: High School Scholarship Data Available for: No.	%	Minnesota Scholastic Aptitude Test Data Available for: No.	%	Cooperative English Data Available for: No.	%
4 year Colleges	1	157	157	100	153	97	152	97
	2	45	45	100	45	100	45	100
	3	126	119	94	121	96	120	95
	4	132	126	95	122	92	122	92
	5	146	144	99	143	98	143	98
	6	131	128	98	129	98	129	98
	7							
	8							
	9	255	245	96	244	96	243	95
	10	99	97	98	96	97	95	96
	11	160	158	99	158	99	158	99
	12	413	406	98	401	97	402	97
	13							
	14							
	15	51	47	92	47	92	48	94
	16	49	47	96	45	92	45	92
Total	B	1764	1719	97	1704	97	1702	96
Junior Colleges	3	67	67	100	67	100	67	100
	4	55	53	96	53	96	54	98
	5	151	151	100	147	97	147	97
	6	79	78	99	76	96	76	96
	7	185	184	99	181	98	181	98
	9	134	127	95	126	94	127	95
	10	96	93	97	91	95	91	95
	12	7	5	71	5	71	5	71
	13	131	113	86	107	82	107	82
	14	80	80	100	78	98	78	98
	15	48	48	100	47	98	47	98
	16	62	60	97	58	94	58	94
Total	C	1095	1059	97	1036	95	1038	95
State Colleges	1	252	235	93	231	92	231	92
	3	710	669	94	672	95	673	95
	4	199	197	99	199	100	197	99
	5	575	563	98	555	97	554	96
	6	161	150	93	148	92	147	91
Total	D	1897	1814	96	1805	95	1802	95
Grand Total, All Colleges without Univ. of Minn		4756	4592	97	4545	96	4542	96

Table 2

Number of women who were graduated from Minnesota high schools in 1959, '60, and '61 and who were enrolled in each college and in each type of college with number and percent for whom specified scores were available.

			Women					
			High School Scholarship Data Available for:		Minnesota Scholastic Aptitude Test Data Available for:		Cooperative English Data Available for:	
	College Code	Total No. Freshmen Women Enrolled	No.	%	No.	%	No.	%
4 Year Colleges	1	152	147	97	147	97	147	97
	2	35	32	91	32	91	32	91
	3	152	142	93	141	93	140	92
	4	180	169	94	167	93	168	93
	5	180	174	97	173	96	173	96
	6	149	142	95	142	95	142	95
	7	132	129	98	132	100	132	100
	8	296	287	97	286	97	286	97
	9	-	-	-	-	-	-	-
	10	-	-	-	-	-	-	-
	11	168	164	98	163	97	163	97
	12	-	-	-	-	-	-	-
	13	80	77	96	75	94	75	94
	14	125	121	97	122	98	122	98
	15	32	25	78	24	75	24	75
	16	56	56	100	54	96	53	95
Total	B	1737	1665	96	1658	95	1657	95
Junior Colleges	3	29	29	100	29	100	29	100
	4	36	35	97	36	100	35	97
	5	119	117	98	115	97	114	96
	6	38	38	100	37	97	37	97
	7	124	111	90	108	87	108	87
	9	113	110	97	109	96	109	96
	10	25	23	92	23	92	23	92
	12	13	12	92	12	92	12	92
	13	99	95	96	92	93	92	93
	14	63	61	97	59	94	59	94
	15	58	53	91	54	93	54	93
	16	44	42	95	39	89	39	89
Total	C	761	726	96	713	94	711	94
State Colleges	1	171	160	94	161	94	160	94
	3	628	613	98	616	98	615	98
	4	183	168	92	171	93	171	93
	5	500	491	98	479	96	481	96
	6	141	134	95	131	93	131	93
Total	D	1623	1566	96	1558	96	1558	96
Grand Total, All Colleges without Univ. of Minn		4121	3957	96	3929	95	3926	95

Table 3

Number of men and women who were graduated from Minnesota High Schools in 1959, '60, and '61 who were enrolled in each college and in each type of college, with number and percent for whom specified scores were available.

Men and Women

	College Code	Total No. Freshmen Men & Women Enrolled	High School Scholarship Data Available for: No.	%	Minnesota Scholastic Aptitude Test Data Available for: No.	%	Cooperative English Data Available for: No.	%
4 Year Colleges	1	309	304	98	300	97	299	97
	2	80	77	96	77	96	77	96
	3	278	261	94	262	94	260	94
	4	312	295	94	289	93	290	93
	5	326	318	98	316	97	316	97
	6	280	270	96	271	97	271	97
	7	132	129	98	132	100	132	100
	8	296	287	97	286	97	286	97
	9	255	245	96	244	96	243	95
	10	99	97	98	96	97	95	96
	11	328	322	98	321	98	321	98
	12	413	406	98	401	97	402	97
	13	80	77	96	75	94	75	94
	14	125	121	97	122	98	122	98
	15	83	72	87	71	86	72	87
	16	105	103	98	99	94	98	93
Total	B	3501	3384	97	3362	96	3359	96
Junior Colleges	3	96	96	100	96	100	96	100
	4	91	88	97	89	98	89	98
	5	270	268	99	262	97	261	97
	6	117	116	99	113	97	113	97
	7	309	295	94	289	94	289	94
	9	247	237	96	235	95	236	96
	10	121	116	96	114	94	114	94
	12	20	17	85	17	85	17	85
	13	230	208	90	199	87	199	87
	14	143	141	99	137	96	137	96
	15	106	101	95	101	95	101	95
	16	106	102	96	97	92	97	92
Total	C	1856	1785	96	1749	94	1749	94
State Colleges	1	423	395	93	392	93	391	92
	3	1338	1282	96	1288	96	1288	96
	4	382	365	96	370	97	368	96
	5	1075	1054	98	1034	96	1035	96
	6	302	284	94	279	92	278	92
Total	D	3520	3380	96	3363	96	3360	95
Grand Total, All Colleges without Univ. of Minn.		8877	8549	96	8474	95	8468	95

Table 4

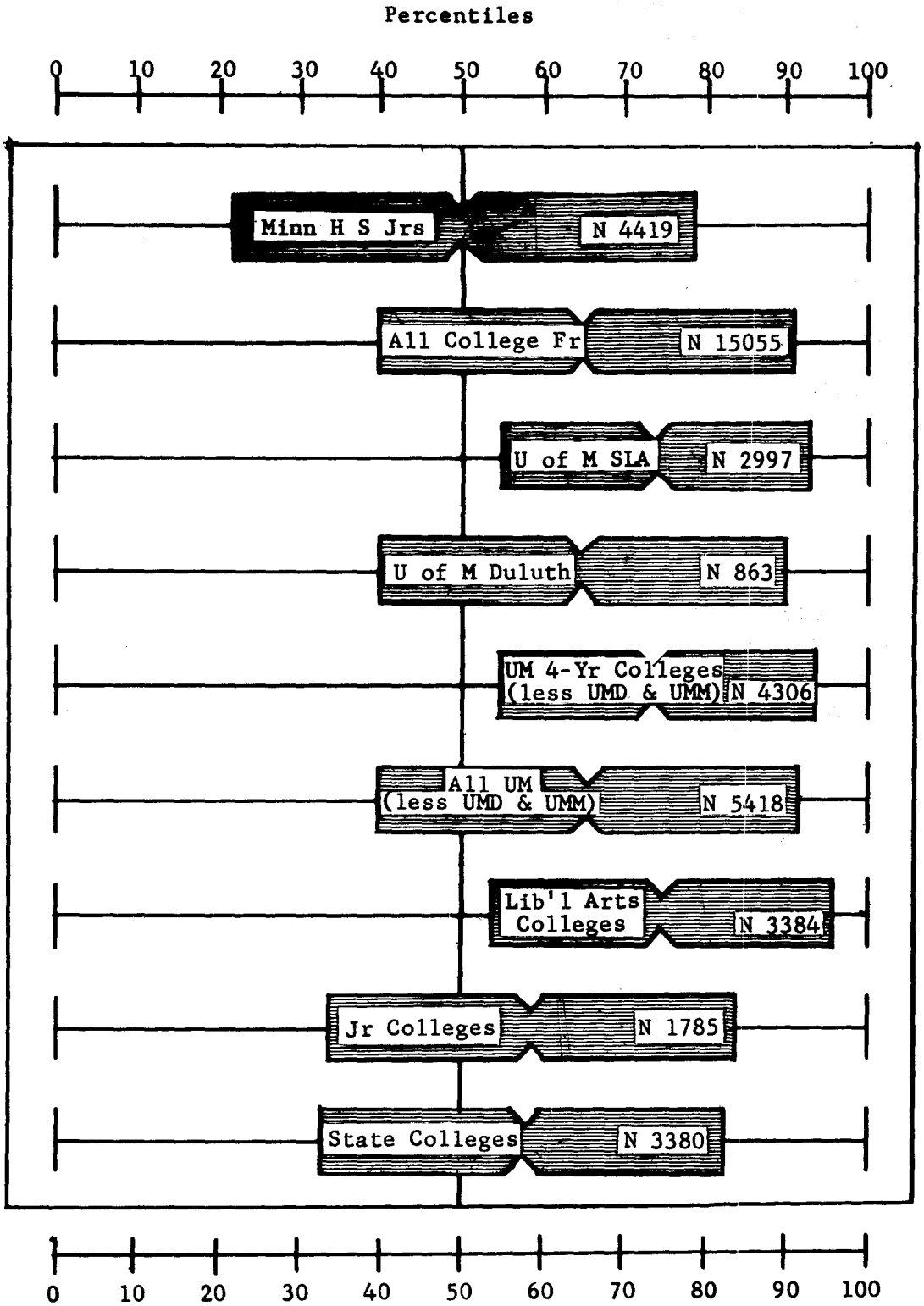
The total number of entering freshmen
in Minnesota Colleges the fall of 1961:
the number from Minnesota High Schools; and the
number graduating from Minnesota High Schools in 1959, '60, and '61

	Total No. Ent. Fr.	No. Ent. Fr. from Minn. H.S.	No. Ent. Fr. Grad. from Minn. H.S. in '59,'60 & '61
All University Colleges	7532	N.A.*	6572
Four Year Liberal Arts Colleges	5791	3571	3501
Junior Colleges	2455	2091	1853
State Colleges	4028	3741	3520
Grand Total			
not including the University of Minnesota	12274	9403	8874
including the University of Minnesota	19806	--	15446

* Not Available

Figure 1

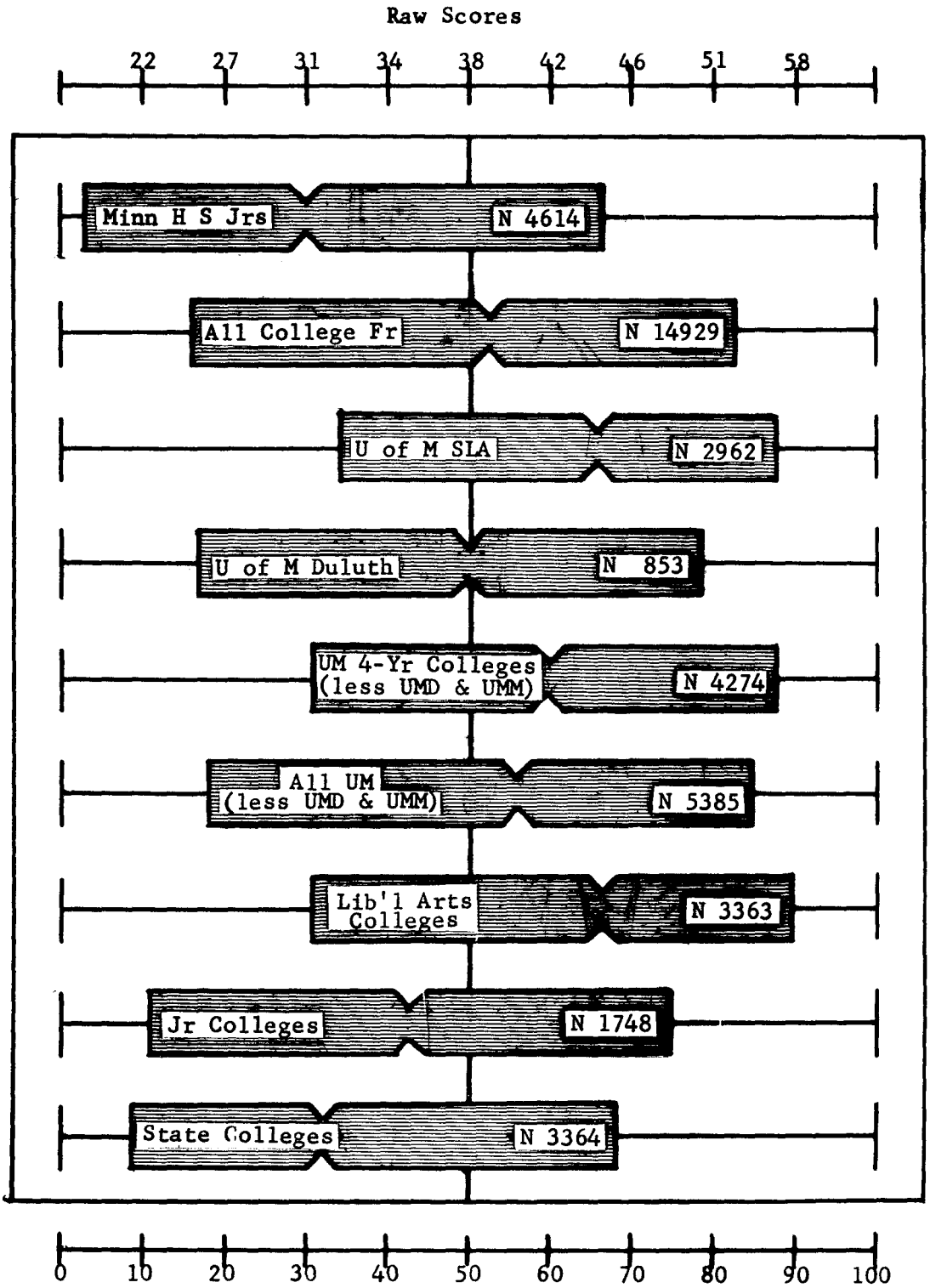
Variability of High School Percentiles of College Freshmen who were graduated from Minnesota High Schools and who entered Minnesota Colleges September, 1961.



The range of each group can extend from the first to the hundredth percentile. The wide portion of each group represents the middle two-thirds of freshmen of the group. The indentation in the wide portion is the mean of the group.

Figure 2

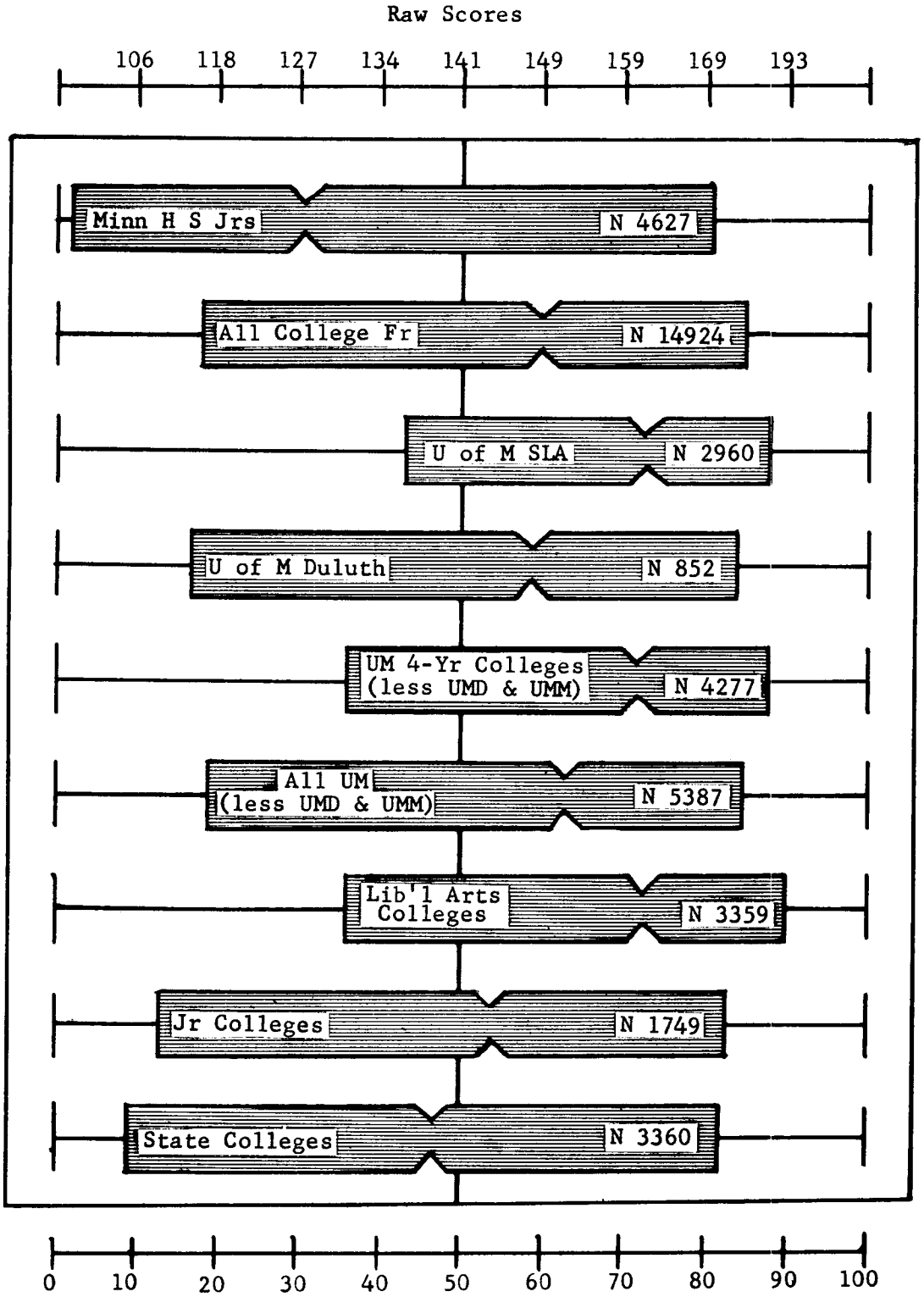
Variability of Minnesota Scholastic Aptitude Test scores for College Freshmen who were graduated from Minnesota High Schools and who entered Minnesota Colleges September, 1961.



The range of each group can extend from the first to the hundredth percentile. The wide portion of each group represents the middle two-thirds of the group. The indentation in the wide portion is the mean of the group.

Figure 3

Variability of Cooperative English Test, Form Z, Lower Level, Total Score. College Freshmen who were graduated from Minnesota High Schools and who entered Minnesota Colleges September, 1961.



The range of each group can extend from the first to the hundredth percentile. The wide portion of each group represents the middle two-thirds of the group. The indentation in the wide portion is the mean of the group.

Table 5

Table showing the Mean and Standard Deviation of High School %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, lower level) for:

A. University of Minnesota

B. Four Year Colleges
C. Junior Colleges
D. State Colleges

Men

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A	3913	62.00	26.10	3886	38.32	13.75	3891	141.40	34.34
B	1719	69.75	22.51	1704	43.07	13.20	1702	152.76	30.85
C	1059	52.90	24.90	1036	33.92	12.19	1038	135.29	31.96
D	1814	49.65	24.34	1805	30.83	11.24	1802	125.97	33.30
Total	8505	59.80	25.88	8431	37.13	13.70	8433	139.65	34.32

Women

	High School %iles			Minn. Schol. Apt. Test			Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A	2565	72.06	22.77	2539	40.86	13.66	2536	162.47	28.67
B	1665	79.94	18.27	1658	45.56	14.02	1657	170.77	26.83
C	726	68.25	21.84	713	36.78	13.74	711	156.14	31.33
D	1566	68.04	22.67	1558	35.43	12.67	1558	153.66	30.72
Total	6522	72.68	22.06	6458	40.37	13.97	6462	161.78	29.72

Men and Women

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A	6478	65.99	25.32	6425	39.32	13.77	6427	149.71	33.83
B	3384	74.76	21.15	3362	44.30	13.67	3359	161.64	30.31
C	1785	59.14	24.88	1748	35.11	12.90	1749	143.77	33.32
D	3380	58.17	25.30	3363	32.96	12.14	3360	138.81	34.98
Total	15027	65.39	25.12	14899	38.51	13.89	14895	149.25	34.21

Table 6

Table showing the Mean and Standard Deviation of high school %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form A, lower level) for:

University of Minnesota

1. Agriculture
2. Dental Hygiene
3. Education
4. General College
5. Institute of Technology
6. Science, Literature, and the Arts
7. U of M at Duluth
8. U of M at Morris

Men

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A 1	264	63.49	21.17	261	35.95	12.34	263	136.94	31.84
3	45	63.82	18.74	44	30.09	9.87	44	127.25	32.99
4	789	31.98	18.15	788	24.64	7.75	788	107.60	29.20
5	701	80.78	16.73	705	45.89	12.36	708	158.61	27.18
6	1467	69.33	20.93	1453	43.50	11.87	1453	153.76	27.24
7	503	60.14	25.79	499	36.58	12.82	498	137.55	33.69
8	144	63.78	20.23	136	36.57	10.60	137	142.91	24.62
Total w/D & Mor	3913	62.00	26.10	3886	38.32	13.75	3891	141.40	34.34
Total wo/D & Mor	3266	62.21	26.37	3251	38.66	13.97	3256	141.93	34.75

Women

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A 1	172	75.40	17.46	175	39.31	12.93	175	158.50	29.79
2	21	86.14	10.46	21	43.67	9.44	21	173.86	15.76
3	67	75.55	15.51	67	37.42	13.13	67	154.93	30.39
4	323	35.74	19.58	323	24.91	7.65	322	126.97	27.20
5	11	94.18	8.31	10	64.10	6.86	10	197.70	6.86
6	1530	78.63	16.57	1509	44.93	12.24	1507	170.75	22.79
7	360	72.04	22.79	354	39.16	12.90	354	161.94	27.23
8	81	76.31	16.54	80	38.64	11.86	80	159.24	24.26
Total w/D & Mor	2565	72.06	22.77	2539	40.86	13.66	2536	162.47	28.67
Total wo/D & Mor	2124	71.90	22.96	2105	41.23	13.82	2102	162.68	29.05

Table 6
(Continued)

Men and Women

Code	High School %iles No.	High School %iles Mean	High School %iles S.D.	Raw Score on Minn. Schol. Apt. Test No.	Raw Score on Minn. Schol. Apt. Test Mean	Raw Score on Minn. Schol. Apt. Test S.D.	Raw Score on Coop. English Test No.	Raw Score on Coop. English Test Mean	Raw Score on Coop. English Test S.D.
A 1	436	68.19	20.63	436	37.30	12.69	438	145.55	32.78
2	21	86.14	10.46	21	43.67	9.44	21	173.86	15.76
3	112	70.84	17.84	111	34.51	12.47	111	143.95	34.24
4	1112	33.07	18.65	1111	24.72	7.72	1110	113.22	29.95
5	712	80.98	16.72	715	46.14	12.49	718	159.15	27.39
6	2997	74.07	19.39	2962	44.22	12.09	2960	162.41	26.47
7	863	65.10	25.27	853	37.65	12.92	852	147.68	33.41
8	225	68.29	19.92	216	37.33	11.12	217	148.93	25.72
Total w/D & Mor	6478	65.99	25.32	6425	39.32	13.77	6427	149.71	33.83
Total wo/D & Mor	5390	66.03	25.52	5356	39.67	13.97	5358	150.01	34.17

Table 7

Table showing the Mean and Standard Deviation of high school %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, lower level) for:

Four Year Colleges

Men

Code	High School %iles No.	Mean	S.D.	Raw Score on Minn. Schol. Apt. Test No.	Mean	S.D.	Raw Score on Coop. English Test No.	Mean	S.D.
B 1	157	67.79	20.02	153	40.24	11.95	152	146.64	35.19
2	45	90.31	14.83	45	63.40	8.21	45	189.16	18.12
3	119	69.24	20.44	121	39.42	13.15	120	147.04	30.82
4	126	73.19	20.75	122	42.30	12.57	122	152.46	29.05
5	144	75.53	19.65	143	46.12	12.47	143	160.57	26.32
6	128	79.70	15.80	129	49.03	10.54	129	163.17	27.17
9	245	74.62	18.43	244	44.22	11.78	243	154.19	25.11
10	97	68.39	23.91	96	42.19	14.11	95	153.57	29.11
11	158	77.00	17.75	158	47.54	11.94	158	160.05	30.49
12	406	60.11	24.79	401	40.03	12.31	402	147.94	29.61
15	47	41.79	21.59	47	27.11	11.49	48	111.08	32.90
16	47	68.17	20.10	45	41.18	11.59	45	151.00	24.59
Total	1719	69.75	22.51	1704	43.07	13.20	1702	152.76	30.85

Women

Code	High School %iles No.	Mean	S.D.	Raw Score on Minn. Schol. Apt. Test No.	Mean	S.D.	Raw Score on Coop. English Test No.	Mean	S.D.
B 1	147	79.04	16.31	147	42.00	12.29	147	165.07	26.17
2	32	97.81	2.55	32	68.13	5.53	32	205.22	11.66
3	142	81.09	15.46	141	42.32	12.45	140	165.52	28.30
4	169	79.78	16.73	167	44.03	11.89	168	170.26	23.51
5	174	82.40	14.70	173	44.17	13.45	173	166.73	31.06
6	142	90.32	9.19	142	54.74	11.07	142	187.91	15.69
7	129	77.60	17.88	132	42.56	12.09	132	164.68	23.11
8	287	74.36	21.80	286	46.06	13.50	286	172.32	25.22
11	164	87.24	12.12	163	50.17	11.73	163	181.71	18.25
13	77	74.10	20.15	75	41.75	13.50	75	157.59	30.03
14	121	73.36	22.59	122	43.76	14.27	122	166.56	28.17
15	25	60.80	26.04	24	35.54	14.68	24	146.71	37.05
16	56	79.09	14.45	54	40.07	22.98	53	160.79	22.19
Total	1665	79.94	18.27	1658	45.56	14.02	1657	170.77	26.83

Table 7
(Continued)

Men and Women

Code	High School %iles No.	Mean	S.D.	Minn. Schol. Apt. Test No.	Raw Score on Mean	S.D.	Coop. English Test No.	Raw Score on Mean	S.D.
B 1	304	73.23	19.16	300	41.10	12.15	299	155.70	32.42
2	77	93.43	12.04	77	65.36	7.59	77	195.83	17.64
3	261	75.69	18.85	262	40.98	12.86	260	156.99	30.89
4	295	76.96	18.84	289	43.30	12.21	290	162.77	27.43
5	318	79.29	17.46	316	45.05	13.05	316	163.95	29.18
6	270	85.29	29.14	271	52.02	11.19	271	176.13	25.16
7	129	77.60	17.88	132	42.56	12.09	132	164.68	23.11
8	287	74.36	21.80	286	46.06	13.50	286	172.32	25.22
9	245	74.62	18.43	244	44.22	11.78	243	154.19	25.11
10	97	68.39	23.91	96	42.19	14.11	95	153.57	29.11
11	322	82.21	15.99	321	48.88	11.90	321	171.05	27.28
12	406	60.11	24.79	401	40.03	12.31	402	147.94	29.61
13	77	74.10	20.15	75	41.75	13.50	75	157.59	30.03
14	121	73.36	22.59	122	43.76	14.27	122	166.56	28.17
15	72	48.39	24.93	71	29.96	13.27	72	122.96	38.23
16	103	74.11	18.10	99	40.58	18.70	98	156.30	23.83
Total	3384	74.76	21.15	3362	44.30	13.67	3359	161.64	30.31

Table 8

Table showing the Mean and Standard Deviation of high schools %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, lower level) for:

Junior Colleges

Men

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
C 3	67	45.98	25.45	67	34.36	11.03	67	139.66	25.12
4	53	45.09	23.11	53	33.47	10.95	54	135.13	29.60
5	151	52.78	24.60	147	31.67	11.95	147	131.28	31.56
6	78	54.87	24.40	76	35.29	12.31	76	138.84	28.79
7	184	53.07	23.53	181	34.95	12.32	181	136.02	33.12
9	127	53.55	26.76	126	36.05	12.68	127	143.17	30.61
10	93	51.02	26.43	91	30.60	12.41	91	120.15	36.24
12	5	28.60	18.35	5	29.80	10.80	5	110.80	49.22
13	113	56.18	22.23	107	33.92	11.70	107	132.96	30.41
14	80	56.96	24.00	78	32.53	11.00	78	134.35	29.12
15	48	61.81	26.66	47	41.45	12.40	47	153.00	29.52
16	60	49.53	24.03	58	31.34	11.31	58	133.53	30.61
Total	1059	52.90	24.90	1036	33.92	12.19	1038	135.29	31.96

Women

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
C 3	29	67.07	21.99	29	37.31	15.13	29	155.69	27.62
4	35	60.89	21.38	36	36.80	12.27	35	160.06	27.62
5	117	60.12	21.24	115	35.42	12.89	114	156.24	30.04
6	38	66.32	25.08	37	36.57	14.85	37	155.76	33.96
7	111	68.18	21.62	108	38.01	13.73	108	158.81	27.51
9	110	67.45	22.29	109	40.71	13.63	109	162.66	34.53
10	23	62.30	21.04	23	31.30	10.50	23	153.13	29.07
12	12	77.58	16.25	12	41.17	13.80	12	163.25	29.04
13	95	67.16	21.55	92	35.00	13.20	92	151.53	31.48
14	61	64.46	21.87	59	32.83	13.28	59	146.95	28.49
15	53	79.00	16.29	54	40.89	14.46	54	161.44	36.04
16	42	64.36	23.01	39	33.56	11.85	39	150.33	29.04
Total	726	68.25	21.84	713	36.78	13.74	711	156.14	31.33

Table 8
(Continued)

Men and Women

Code	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
C 3	96	52.35	26.30	96	35.25	12.49	96	144.50	26.92
4	88	54.95	25.51	88	34.80	11.61	89	144.93	31.30
5	268	59.91	24.57	262	33.28	12.52	261	142.18	33.29
6	116	58.62	25.21	113	35.71	13.21	113	144.38	31.59
7	295	58.76	23.98	289	36.09	12.95	289	144.54	33.03
9	237	60.00	25.74	235	38.21	13.33	236	152.17	33.90
10	116	53.26	25.85	114	30.75	12.06	114	124.79	36.11
12	17	63.18	27.99	17	37.82	13.98	17	147.82	43.34
13	208	61.19	22.60	199	34.42	12.43	199	141.55	32.27
14	141	60.21	23.40	137	32.66	12.04	137	139.77	29.52
15	101	70.83	23.47	101	41.15	13.54	101	157.51	33.43
16	102	55.64	24.72	97	32.24	11.58	97	140.29	31.10
Total	1785	59.14	24.88	1748	35.11	12.90	1749	143.77	33.32

Table 9

Table showing the Mean and Standard Deviation of high school %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, lower level) for:

State Colleges

Men

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
D 1	235	54.27	25.58	231	31.84	11.70	231	126.03	32.87
3	669	48.51	23.40	672	31.22	11.41	673	126.67	34.56
4	197	49.18	23.57	199	29.60	10.16	197	126.37	30.67
5	563	50.15	24.72	555	30.37	11.06	554	124.50	33.00
6	150	46.31	25.00	148	30.86	11.55	147	127.70	32.42
Total	1814	49.65	24.34	1805	30.83	11.24	1802	125.97	33.30

Women

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
D 1	160	73.46	20.69	161	36.63	13.14	160	156.33	31.10
3	613	65.77	23.38	616	35.67	12.52	615	154.15	28.01
4	168	71.20	21.30	171	35.12	12.40	171	153.13	31.36
5	491	68.86	22.55	479	35.16	12.69	481	152.40	33.53
6	134	64.97	21.93	131	34.21	12.92	131	153.47	30.57
Total	1566	68.04	22.67	1558	35.43	12.67	1558	153.66	30.72

Men and Women

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
D 1	395	62.04	25.52	392	33.81	12.54	391	138.43	35.44
3	1282	56.76	24.93	1288	33.35	12.16	1288	139.79	34.46
4	365	59.31	25.08	370	32.15	11.58	368	138.80	33.74
5	1054	58.86	25.51	1034	32.59	12.08	1035	137.47	36.04
6	284	55.12	25.37	279	32.43	12.33	278	139.85	34.08
Total	3380	58.17	25.30	3363	32.96	12.14	3360	138.81	34.98

Table 10

Table showing the Mean and Standard Deviation of high school %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, lower level) for:

High School Juniors

Men

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
10% Sampling	2198	44.76	28.78	2315	29.75	13.75	2320	116.65	41.94

Women

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
10% Sampling	2221	55.85	27.78	2299	30.91	13.93	2307	138.96	38.91

Men and Women

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
10% Sampling	4419	50.33	28.82	4614	30.33	13.85	4627	127.77	41.96
Total Group 1959-60 High School Juniors				47890	30.71	13.91	47613	129.35	40.48

Table 11

Proportion of Minnesota College Freshmen* (1961-62) at each ability level as shown by score on the Minnesota Scholastic Aptitude Test who were enrolled in types of colleges (males plus females)

MSAT Raw Score Category	MSAT %ile Score Category	All Minn Coll's No. in MSAT Category	Proportion of No. in MSAT Category				Cumulated Percent From High to Low Scores for:**				
			U of M w/ D&Mor	4 Yr Lib Arts Coll's	State Coll's	Junior Coll's	All Minn Coll's	U of M w/D&Mor	4 Yr Lib Arts Coll's	State Coll's	Junior Coll's
64-78	96-100	721	46	42	6	6	5	5	9	1	3
59-63	92-95	688	45	37	10	8	9	10	17	3	6
55-58	86-91	780	47	33	12	8	15	16	24	6	9
52-54	82-85	695	46	31	13	10	19	21	30	9	13
49-51	77-81	745	49	29	13	9	24	26	37	12	17
46-48	71-76	894	44	31	17	8	30	33	45	16	21
44-45	66-70	660	43	25	21	11	35	37	50	20	25
42-43	61-65	646	43	29	17	11	39	41	56	24	29
40-41	56-60	697	48	26	16	10	44	47	61	27	33
38-39	51-55	792	43	25	21	11	49	52	67	32	38
36-37	46-50	820	43	23	23	11	55	57	73	38	43
34-35	40-45	842	43	21	23	13	60	63	78	43	49
32-33	34-39	814	41	18	27	14	66	68	82	50	55
30-31	29-33	759	43	16	26	15	71	73	86	56	62
28-29	24-28	739	42	16	27	15	76	78	90	62	68
26-27	19-23	718	39	12	32	16	81	82	92	69	74
24-25	15-18	700	42	11	32	15	85	87	94	76	80
21-23	9-14	887	41	9	35	15	91	93	97	85	88
18-20	5-8	638	36	10	36	18	96	96	99	92	95
5-17	1-4	664	38	8	41	13	100	100	100	100	100
Total %		100	43	23	23	11	100	100	100	100	100
No. in Group		14899	6425	3362	3363	1749	14899	6425	3362	3363	1749

* The numbers represent freshmen who entered Minnesota colleges in the fall of 1961, who graduated from Minnesota high schools in the spring of 1959, '60 and '61, and for whom Minnesota State-Wide Program Test Scores were available. All Minnesota colleges cooperated in the study from which these data were obtained.

** The numbers in each category were cumulated from the high category downwards and translated into a cumulated percent on the basis of the number in each college category (given at the bottom of each column).

Table 12

Proportion of Minnesota College Freshmen* (1961-62) at each ability level as shown by high school rank who were enrolled in types of colleges (males plus females)

HSR Category	All Minn Coll's No. in HSR Category	Proportion of No. in HSR Category				Cumulated Percent From High to Low HSR for: **				
		U of M w/D&Mor	4 Yr Lib Arts Coll's	State Coll's	Junior Coll's	All Minn Coll's	U of M w/D&Mor	4 Yr Lib Arts Coll's	State Coll's	Junior Coll's
99-100	642	42	41	13	4	4	4	8	2	2
96-98	771	46	36	11	7	9	10	16	5	4
93-95	813	48	32	14	6	15	16	24	8	7
90-92	799	42	32	16	10	20	21	31	12	12
87-89	764	46	25	18	11	25	26	37	16	17
84-86	745	47	28	16	9	30	31	43	20	20
81-83	688	43	29	17	11	35	36	49	23	24
78-80	710	43	26	21	10	39	41	55	28	28
74-77	855	45	23	21	11	45	47	60	33	33
70-73	821	44	24	19	13	51	52	66	38	39
66-69	761	44	21	24	11	56	57	71	43	44
62-65	740	41	23	23	13	61	62	76	48	50
58-61	664	41	18	27	14	65	66	79	53	55
53-57	833	41	19	25	15	71	72	84	60	62
48-52	673	42	15	26	17	75	76	87	65	68
42-47	763	40	18	29	13	80	81	91	71	74
36-41	695	40	13	31	16	85	85	94	78	80
29-35	708	38	12	34	15	89	89	96	85	86
19-28	794	44	9	32	15	95	94	98	93	93
1-18	788	45	7	32	16	100	100	100	100	100
Total %	100	43	22	22	12	100	100	100	100	100
No. in Group	15027	6478	3384	3380	1785	15027	6478	3384	3380	1785

* The numbers represent freshmen who entered Minnesota colleges in the fall of 1961, who graduated from Minnesota high schools in the spring of 1959, '60, and '61, and for whom Minnesota State-Wide Program Test Scores were available. All Minnesota colleges cooperated in the study from which these data were obtained.

** The numbers in each category were cumulated from the high category downwards and translated into a cumulated percent on the basis of the number in each college category (given at the bottom of each column).

Table 13

Proportion of University of Minnesota Freshmen* (1961-62)
at each ability level as shown by
score on the Minnesota Scholastic Aptitude Test
who were enrolled in University colleges
(males plus females)

MSAT Raw Score Category	MSAT %ile Score Category	All Minn Coll's No. in MSAT Category	Proportion of No. in MSAT Category							
			U of M w/ D&Mor	SLA	IT	GC	UMD	Morris	Other U of M	U of M w/o D&Mor
64-78	96-100	721	46	29	11	0	3	1	2	42
59-63	92-95	688	45	29	8	0	4	1	3	40
55-58	86-91	780	47	32	6	0	5	1	3	41
52-54	82-85	695	46	28	8	1	6	1	3	39
49-51	77-81	745	49	29	8	-	6	2	4	41
46-48	71-76	894	44	24	8	1	5	1	5	38
44-45	66-70	660	43	27	5	1	5	1	4	37
42-43	61-65	646	43	25	6	1	6	2	3	35
40-41	56-60	697	48	26	6	3	7	1	5	40
38-39	51-55	792	43	23	6	2	5	2	5	36
36-37	46-50	820	43	24	3	4	6	2	4	35
34-35	40-45	842	43	21	3	5	6	3	5	34
32-33	34-39	814	41	17	5	7	6	2	4	33
30-31	29-33	759	43	16	5	8	7	2	5	34
28-29	24-28	739	42	15	3	13	5	2	4	35
26-27	19-23	718	40	11	2	13	6	2	6	32
24-25	15-18	700	42	8	2	20	6	1	5	35
21-23	9-14	887	41	6	1	20	7	2	5	32
18-20	5-8	638	36	2	0	23	6	0	5	30
5-17	1-4	664	38	2	0	28	5	0	3	33
Total %		100	43	20	5	7	6	1	4	36
No. in Group		14899	6425	2962	715	1111	853	216	568	5356

* The numbers represent freshmen who entered Minnesota colleges in the fall of 1961, who graduated from Minnesota high school in the spring of 1959, '60, and '61, and for whom Minnesota State-Wide Program Test Scores were available. All Minnesota colleges cooperated in the study from which these data were obtained.

Table 14

Proportion of University of Minnesota Freshmen* (1961-62)
at each ability level as shown by High School Rank
who were enrolled in University Colleges
(Males plus Females)

HSR Category	All Minn Coll's No. in HSR Category	Proportion of No. in HSR Category							
		U of M w/ D & Mor	SLA	IT	GC	UMD	Morris	Other U of M	U of M w/o D&Mor
99-100	642	42	24	11	--	5	1	1	36
96-98	771	46	27	10	--	5	1	3	40
93-95	813	48	27	9	--	7	1	4	40
90-92	799	42	24	7	--	5	1	5	36
87-89	764	46	24	8	--	6	2	6	38
84-86	745	47	26	8	--	5	2	6	40
81-83	688	43	25	5	1	6	2	4	35
78-80	710	43	25	5	1	6	2	4	35
74-77	855	45	26	5	1	6	2	5	37
70-73	821	44	24	6	2	5	2	5	37
66-69	761	44	24	4	2	6	2	6	36
62-65	740	41	23	4	3	6	2	3	33
58-61	664	41	23	3	4	6	2	3	33
53-57	833	41	19	3	8	5	1	5	35
48-52	673	42	15	2	12	5	2	6	35
42-47	763	40	13	2	13	6	2	4	32
36-41	695	40	12	2	16	5	2	3	33
29-35	708	38	10	1	18	5	1	3	32
19-28	794	44	6	1	29	6	0	2	38
1-18	788	45	3	0	35	6	0	1	39
Total %	100	43	20	5	7	6	1	4	36
N in Group	15027	6478	2997	712	1112	863	225	569	5390

* The numbers represent freshmen who entered Minnesota colleges in the fall of 1961, who graduated from Minnesota high schools in the spring of 1959, '60 or '61, and for whom Minnesota State-Wide Program Test Scores were available. All Minnesota colleges cooperated in the study from which these data were obtained.

Table 15

Distribution across College Groups
of the upper 11 percent of students
on the Minnesota Scholastic Aptitude Test
broken down by single score categories

MSAT Raw Score Category	MSAT %ile Score Category	All Minn Coll's No. in MSAT Category	Percent of No. in MSAT Category			
			U of M w/UMD & Mor	4 Yr Lib Arts Coll's	State Coll's	Junior Coll's
58	90	185	48	35	10	07
59	92	156	44	36	13	08
60	93	131	48	36	11	04
61	94	147	43	39	07	11
62	94	138	45	33	12	10
63	95	116	46	40	08	07
64-65	96-97	207	48	36	08	08
66-67	98	169	50	37	05	08
68-70	99	178	46	42	06	06
71-up	100	167	41	54	02	02
Totals 58-up	90-100	1594	46	39	08	07

Table 16

Distribution across College Groups
of the upper 11 percent of students
on High School Rank
broken down by one percentile categories

	HSR Category	All Minn Coll's No. in HSR Category	Percent of No. in HSR Category			
			U of M w/D & Mor	4 Yr Lib Arts Coll's	State Coll's	Junior Coll's
	95	294	49	33	13	5
	96	293	44	35	13	8
	97	236	50	32	9	9
	98	242	43	43	10	4
	99	202	51	39	8	2
	100	440	39	41	15	5
Totals	95-100	1707	45	37	12	6

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A FOLLOW-UP IN MINNESOTA COLLEGES SHOWING THE RELATIONSHIP OF COLLEGE GRADES TO HIGH SCHOOL RANK AND TEST SCORES IN THE MINNESOTA COLLEGE STATE-WIDE TESTING PROGRAM

by

Edward O. Swanson, Jack C. Merwin, and
Ralph F. Berdie
Student Counseling Bureau

This report is based on freshmen entering Minnesota Colleges in the Fall of 1961 who graduated from Minnesota high schools in 1959, 1960, and 1961. They were tested in the State-Wide College Testing Program during their junior year of high school.

CONTENTS

Three Reports on 1961-62 Minnesota College Freshmen

This is the second of three reports on a group of students who entered Minnesota Colleges. The first descriptive report, A Survey of Scholastic Aptitude in Minnesota Colleges, by E. O. Swanson, J. C. Merwin, and R. F. Berdie was published as Office of the Dean of Students Research Bulletin, Volume 4, Number 2, and presented means and standard deviations for high school percentile rank and for scores on the Minnesota Scholastic Aptitude Test and Cooperative English Test obtained by freshmen entering Minnesota colleges. The third report, Volume 5, Number 2 of this series presents prediction or expectancy tables for first year grade averages in Minnesota colleges based on high school percentile rank and Minnesota Scholastic Aptitude Test scores.

Resume

A substantial relationship exists between students' academic work in college and their performance in high school and their scores on tests of academic aptitude and achievement. This report expresses such relationships between college freshman grade point average and measures obtained through the State-Wide Testing Program in terms of correlation coefficients.[1] Coefficients for males and females separately and combined, for each Minnesota college, and for each type of college are given. The relationship of college grades with high school percentile rank (HSR) and test scores permits one to predict with a known degree of accuracy the grade average of new college students.

Introduction and Background

This study is the third in which the relationship of grades in Minnesota colleges to HSR and State-Wide test scores has been explored on a State-Wide basis. It has been possible only through the cooperation of a large number of institutions and persons. These include the presidents, deans, counselors, and admissions officers of Minnesota colleges; the superintendents, principals, counselors, and students in Minnesota high schools;

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[1] The coefficient of correlation indicates the degree of relationship between two measurements. If in a class of ten persons, the one with the highest test score received the highest marks, the second highest test score, the second highest mark, etc., the correlation would be one. If there is no relationship, the correlation is zero. If the relationship is perfect but reversed, that is, the ones with the highest scores obtained the lowest marks, the correlation is minus one. Coefficients of correlation between college performance and high school grades or scholastic aptitude means reported in college prediction studies usually range from .25 to .75.

and University officials. Much credit for the actual work must be given to Mrs. Veronica Schultz, statistician for the Student Counseling Bureau, whose efforts and careful supervision made possible the efficient handling of the large masses of data.

Since 1937 the Counseling Bureau has published annual or biennial Surveys of Scholastic Aptitude in Minnesota Colleges. These reports have provided descriptive statistics of freshmen entering Minnesota colleges based on HSR and scores from a scholastic aptitude and English tests. For the 1954-55 freshmen the relationship of these State-Wide Program variables to first quarter college grades was also studied . For the freshmen of 1959-60 the first year grade point average (GPA) was used as the criterion in a similar correlation study and in addition, expectancy tables based on HSR and Minnesota Scholastic Aptitude Test (MSAT) score were published to show the chances of a student reaching a given grade level in a specific college. The 1961-62 college freshmen study, being published in three separate reports, essentially repeats the study of the 1959-60 freshmen.

The Variables

First Year College Grade Point Average (GPA) - A student's GPA is dependent upon grades received and number of credits earned. For all Minnesota colleges grades of A were assigned weights of 4; of B, weights of 3; of C, weights of 2; of D, weights of 1; and of F, weights of 0. Multiplying the number of credits of each grade for the year by these weights and adding the products gave total grade points. First year GPA was obtained by dividing this sum by the total number of credits earned. This is,

$$\text{GPA} = \frac{\text{Total Honor Points for First Year}}{\text{Total Credits for First Year}}.$$

Though some Minnesota colleges use weights of 3, 2, 1, 0, -1 or 3, 2, 1, 0, 0 from A through F respectively, all GPA's were transcribed to the 4, 3, 2, 1, 0 weight system to obtain comparability of results.

High School Percentile Rank (HSR) - A student's HSR is based on his rank in his high school class. In the State-Wide Testing Program students' grade averages and ranks are reported to the Counseling Bureau at the end of the junior year. These ranks are based on three years of work in a four year senior high school and on two years of work in a three year senior high school. The rank is changed to a high school percentile rank scale in which the student with the highest average has an HSR of 100 and the lowest an HSR of 1.

Minnesota Scholastic Aptitude Test (MSAT) - Minnesota high school students take the MSAT in January or February of their junior year. The MSAT consists of 78 same-opposites, analogies, and reading comprehension items and is a shortened version of the Ohio State Psychological Examination. It requires 50 minutes of working time.

English Test - Like the MSAT, the English Test is given in the junior year of high school. The test currently in use is the Cooperative English test, Form Z, lower level. It has two separately timed sections of 40 minutes each. Though two sub-scores are obtained, only the total score is used in this study.

Procedures

In the fall of 1961, each cooperating college furnished the Student Counseling Bureau a list of new entering freshmen. The Counseling Bureau added the HSR and test scores to these lists, punched the data into IBM cards, and completed the 1961-62 "Survey of Scholastic Aptitude" in which the means and standard deviations of the variables being studied are summarized.

In June 1962, the Counseling Bureau returned the original list of students to each college for the addition of the first year GPA for each student and the number of quarters (or semesters) on which the GPA was based. The GPA was punched in an IBM card for each student. The subsequent calculations for correlation coefficients, means and standard deviations, and multiple regression analysis were completed using the CDC 1604 electronic computer of the Numerical Analysis Center of the University of Minnesota.* Some students in each college completed less than a full year's work. For these students the GPA for the amount of work they had completed was used as an estimate of what their GPA would have been for the entire year. Courses in which the student had received a grade of "incomplete" were not used in calculating GPA. Each college was asked to include all courses which they use to compute GPA for their own use. For example, if a grade were given in "personal orientation" and the college used this to determine grade averages, it was included in the data here.

In Research Bulletin, Volume 4, Number 2, the means and standard deviations shown for HSR, MSAT, and CET were based on the total number of Minnesota high school graduates for whom the scores were available. In the current report the data for only those students who had information available on all four variables--GPA, HSR, MSAT, and CET were used. This restriction was applied to facilitate multiple regression analysis of the data. Thus the numbers involved for each institution generally are slightly smaller for the current report than they were for the previous report. For all groups except two, the students used in the current study comprise over 90 percent of the students in the previous study. Thus the restriction in numbers of students involved for each institution probably has not caused any important selective bias in the groups being studied.

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* Milton, Roy C. UMSTAT Computer Program Manual. Numerical Analysis Center, University of Minnesota, 1962.

The Relationship Between Test Scores and First Year Grades

Different methods can be used to demonstrate the relationship between scores and grades. In a report to be published soon, a series of prediction or expectancy tables are used to show the relationships among the data. In the present report the method used for demonstrating the extent of relationship among the variables will be the coefficient of correlation.

Tables 1, 2, and 3 show the correlation coefficients for men, women, and the sexes combined for each college. For each type of college the highest, lowest and median coefficients are shown. Multiple correlations are also shown for each college. The multiple correlation coefficient expresses the extent of relationship between the best linear combination of the predictor measures and GPA, taking into account the correlation that each measure has with GPA and the correlation each measure has with every other measure.

Factors Affecting the Size and Reliability of the Correlation Coefficients

When the number of cases (N) is small the correlation coefficient needs to be large before it can be said to be significantly different from zero (no correlation). However, in several of the institutions with N's 50 or less, the coefficients obtained in the current study between the predictor variables and the criterion are quite similar in magnitude to those obtained on the same variables in the 1959 study. As the descriptive statistics (means and standard deviations) for GPA, HSR, MSAT, and CET for the two studies do not indicate any significant changes in the characteristics of entering freshmen in these institutions over the two year period involved, we appear to be dealing with a quite stable set of correlation coefficients even though the N's for a number of institutions are small. The stable pattern of correlations found for the two studies supports the decision to use the data from both studies in the expectancy tables.

When the range of a predictor variable is highly restricted this tends to lower the correlation coefficient. HSR used to predict grades for both men and women for college 2 of the liberal arts colleges illustrates this effect. For this college the mean HSR is over 90 and the standard deviation is about 12, whereas for all the liberal arts colleges the mean and standard deviation are approximately 75 and 21, respectively. Thus, it is not surprising that the correlation between HSR and GPA for this college is relatively low.

Some colleges may place more weight on HSR when selecting students, others more weight on MSAT, and still others more on English achievement. Such differential use of these measures for selecting students will in turn influence the extent of variability of freshmen scores and the size of the correlation coefficients obtained.

Another factor having an important bearing on the size and reliability of the correlation coefficient is the nature of the predicted variable (the

criterion), in this case the students' average grades. GPA, like all other measures, has a degree of unreliability. The degree of unreliability of the predicted variable limits the extent to which any predictors can be correlated with it.

All of these factors cited work together in influencing the correlations obtained.

Results

Sex Differences - The correlation coefficients obtained for women tend to be higher than those for men. This has been true in the two previous Minnesota College State-Wide Testing Program correlation studies. However, the differences in the correlations for the sexes are functions of the predictive measure used and the type of institution. In the current study comparisons of the coefficients for the sexes can be made for 31 institutions. When one looks at single predictors, HSR and GPA correlation coefficients are higher for women in 17 out of 31 comparisons; for MSAT and GPA 23 out of 31 comparisons; and for CET and GPA, 22 out of 31 comparisons. Looking at type of institution we find 100 percent of the State College comparisons favor women and on all three measures (HSR, MSAT, and CET). In the University colleges correlation coefficients for women are generally higher than for men. Not counting women in the Institute of Technology as a separate group, there are six University colleges for which comparisons can be made. With three variables there are 18 sex comparisons possible and 14 of these show higher coefficients for women. Little difference in the coefficients between the sexes is found in the Liberal Arts College groups. Of 24 possible comparisons (eight colleges and three variables) women have higher coefficients in 13 of the 24 comparisons. For the correlation between HSR and GPA, Liberal Arts College men have higher coefficients in five out of eight comparisons.

If we look at the multiple correlation coefficients using all three variables (HSR, MSAT, and CET) the University and State College groups show women with higher multiple coefficients than men in 10 of 11 comparisons, while the Liberal Arts and Junior Colleges show men with higher multiple coefficients in 12 of 20 comparisons.

Differences Among the Variables - High school rank, as in previous studies, shows the highest correlation with grades. This is even more striking for men than it is for women. We have 35 such comparisons possible for men and 36 for women. The HSR correlation coefficient is highest 31 out of 35 times for men, and 25 out of 35 times for women. MSAT is highest three times for men and eight times for women, and CET is highest once for men and three times for women. As with sex differences, the results are dependent on the type of institution. Of the 11 times that MSAT shows a higher correlation with grades than either HSR or CET, 10 come from the coefficients for the Liberal Arts Colleges and University colleges.

The Multiple Correlation Coefficients - In most instances, the multiple correlation coefficients using all three variables (HSR, MSAT, CET) and using just HSR and MSAT are substantially larger than any coefficient for a single variable. Coefficients obtained using only HSR and MSAT are consistantly very close to those obtained using all three variables.

Differences Among Institutions - Looking at the median coefficients and range of the coefficients by type of college, grades earned in the State Colleges are those most predictable from SWTP data. Next most predictable are grades earned in the Junior Colleges, followed by those the private liberal arts colleges. Least predictable are grades obtained in the University colleges. The differences among institutions of the same type, however, are remarkably large.

The Problems of Prediction

We have established that HSR and the State-Wide Program test scores correlate significantly with the first year grades. We have also seen that using two or three predictors gives us a multiple correlation coefficient which is significantly larger than any of the single variable correlation coefficients. In using and interpreting these measures as they relate to college success, it is possible to develop expectancy tables or establish regression formulae. Whether one uses the State-Wide Program measures to enter expectancy tables or to calculate predicted GPA, the user must remember that errors of measurement are involved. HSR and test scores are not not infallible and interpretation, either from a table or a regression formula, must be made with appropriate caution.

Multiple Regression Analysis - The problem of combining two or more variables to predict a single criterion, such as we are doing here using State-Wide test scores as predictors and first year GPA as the criterion, is a problem of multiple regression analysis. This technique takes into account the amount of correlation between each predictor variable and the criterion, as well as the amount of correlation among the predictors themselves and permits assigning weights to the predictors to produce a predicted GPA based on a combination of the predictors. Generally, the higher the correlation between a predictor and the criterion, the greater the statistical weight of that predictor. Exceptions occur because of the intercorrelations of the predictors.

For the sake of brevity the various sets of statistical weights have not been included.* For most groups in the current study, a combination of HSR and the MSAT score can be used to predict GPA as effectively as a combination of three variables for all practical purposes. (See the last two columns of multiple correlation coefficients in Tables 1, 2, and 3.) Taking into account the different correlations between the predictors and the criterion for the various college groups, it is apparent that each institution must have its own prediction formula or its own expectancy tables. Where the institution is coeducational regression formulae and expectancy tables developed separately for males and females are desirable.

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* Persons in the participating colleges who wish to obtain more information about this analysis, or to obtain actual prediction formulae, should contact the authors.

Comparison with Previous Studies - A similar study of Minnesota colleges was done for entering freshmen of 1954 and of 1959. Comparisons between the current 1961 freshmen and the 1959 freshmen groups are most significant as all the variables studied were the same in these two studies. In general the correlation coefficients do not deviate markedly for the same institutions across these two years. For the University colleges, the 1961 coefficients are somewhat lower.

Summary

1. Though women generally show higher correlation coefficients between GPA and the three predictor variables being studied, the extent to which this occurs is not independent of the variables themselves nor of the type of institution. Of the predictor variables, HSR shows the least amount of difference between the sexes. Of the institutions, the State colleges and the University colleges show the most marked difference between the sexes in favor of women.

2. Of the three predictors studied, high school rank generally has the highest correlation coefficients with GPA. Where HSR doesn't have the highest coefficient, MSAT does, and this occurs most often in the Liberal Arts colleges and the colleges of the University.

3. The multiple correlation coefficients using two or three predictors for an institution are significantly larger than any of the zero order coefficients. Generally, a combination of just HSR and MSAT can be used to predict GPA about as well as HSR, MSAT, and CET.

4. Large differences in the correlation coefficients exist between types of colleges and among institutions within type of college.

Conclusions

The three variables used in the Minnesota College State-Wide Testing Program show from fair to very good correlations with first year grades. The consistency of the results of this study and the 1959 study and the size of the coefficients obtained, particularly the magnitude of the multiple correlation coefficients, indicate that these data furnish valuable information for counseling, guiding, and selecting students. Having established the significance of these relationships, personnel workers can use either prediction formulae or expectancy tables, bearing in mind, that they are not using infallible data. To facilitate use of these findings the Student Counseling Bureau is publishing a companion study furnishing expectancy tables for freshman grades based on MSAT for most Minnesota colleges.

Table 1

Correlations Between Grade Point Average and Junior Tests and High School Rank for Minnesota Colleges - Men

School Code	N	Zero Order Correlations HSR	MSAT	CET	Multiple Correlations HSR & MSAT	HSR, MSAT & CET
U of Minn						
Ag,F,H Ec	253	.623	.369	.355	.634	.635
Educ	40	.414	.482	.382	.516	.519
GC	742	.305	.246	.295	.392	.414
IT	666	.546	.387	.352	.578	.579
SLA	1375	.392	.299	.270	.445	.445
UMD	479	.577	.451	.432	.608	.612
UMM	133	.461	.291	.334	.472	.481
Four Year Liberal Arts Colleges						
B- 1	146	.532	.395	.310	.574	.576
2	45	.143	.413	.322	.418	.433
3	122	.574	.343	.344	.584	.587
4	121	.677	.528	.543	.699	.704
5	140	.592	.416	.328	.618	.627
6	123	.436	.359	.251	.519	.520
9	227	.593	.363	.307	.609	.609
10	94	.671	.460	.454	.678	.690
11	155	.587	.447	.244	.619	.630
12	380	.546	.424	.299	.578	.579
16	44	.539	.605	.238	.661	.711
Range		.143-.677	.343-.605	.238-.543	.418-.699	.433-.711
Median		.574	.416	.310	.609	.609
Junior Colleges						
C- 3	64	.700	.437	.410	.700	.700
4	50	.653	.340	.436	.653	.682
5	140	.647	.439	.393	.650	.652
6	73	.621	.386	.407	.622	.622
7	172	.458	.187	.268	.461	.464
9	110	.751	.490	.473	.752	.756
10	83	.719	.633	.538	.738	.738
12	5	.862	.704	.966	.886	.995
13	106	.628	.459	.438	.632	.632
14	72	.645	.558	.553	.677	.682
15	47	.545	.384	.432	.567	.575
16	48	.663	.447	.547	.674	.682
Range		.458-.862	.187-.704	.268-.966	.461-.886	.464-.995
Median		.650	.443	.437	.664	.682
State Colleges						
D- 1	213	.583	.403	.409	.589	.591
3	647	.604	.455	.446	.619	.621
4	184	.532	.395	.319	.546	.547
5	513	.600	.469	.523	.623	.638
6	129	.680	.406	.478	.681	.682
Range		.532-.680	.395-.469	.319-.523	.546-.681	.547-.682
Median		.600	.406	.446	.619	.621

Table 2

Correlations Between Grade Point Average and Junior Tests and High School Rank for Minnesota Colleges - Women

School Code	N	Zero Order Correlations HSR	MSAT	CET	Multiple Correlations HSR & MSAT	HSR, MSAT & CET
U of Minn						
Ag,F,H Ec	167	.586	.590	.543	.687	.693
Dent Hy	19	.137	-.190	-.080	.339	.359
Educ	60	.467	.472	.474	.542	.557
GC	300	.390	.260	.253	.446	.450
SLA	1430	.374	.331	.284	.428	.430
UMD	339	.648	.579	.545	.711	.712
UMM	75	.573	.652	.579	.725	.725
Four Year Liberal Arts Colleges						
B- 1	139	.537	.560	.325	.620	.620
2	32	.088	.320	.573	.331	.598
3	143	.399	.449	.317	.527	.528
4	162	.566	.571	.509	.661	.672
5	165	.633	.515	.463	.679	.684
6	138	.420	.320	.273	.480	.489
7	120	.543	.521	.506	.666	.677
8	278	.618	.506	.508	.654	.657
11	162	.559	.398	.353	.598	.602
13	70	.588	.730	.611	.775	.776
14	117	.742	.633	.571	.787	.787
16	48	.552	.445	.528	.569	.593
Range		.088-.742	.320-.730	.273-.611	.331-.787	.489-.787
Median		.555	.510	.507	.637	.638
Junior Colleges						
C- 3	29	.705	.640	.684	.732	.754
4	31	.642	.354	.281	.645	.648
5	112	.558	.521	.473	.596	.597
6	36	.680	.683	.606	.719	.720
7	106	.627	.350	.440	.628	.636
9	95	.711	.666	.577	.749	.760
10	22	.562	.530	.610	.624	.681
12	11	.865	.400	.667	.870	.877
13	72	.546	.423	.427	.554	.556
14	58	.633	.566	.443	.671	.671
15	52	.724	.635	.319	.750	.751
16	34	.517	.495	.389	.563	.563
Range		.517-.865	.350-.683	.281-.684	.554-.870	.556-.877
Median		.638	.526	.458	.662	.676
State Colleges						
D- 1	155	.679	.594	.591	.721	.727
3	596	.687	.505	.521	.702	.704
4	160	.661	.585	.542	.698	.701
5	461	.671	.600	.598	.728	.735
6	113	.750	.716	.671	.790	.800
Range		.661-.750	.505-.716	.521-.671	.698-.790	.701-.800
Median		.679	.594	.591	.721	.727

Table 3

Correlations Between Grade Point Average and Junior Tests and High School Rank for Minnesota Colleges - Men and Women

		Zero Order Correlations			Multiple Correlations	
School Code	N	HSR	MSAT	CET	HSR & MSAT	HSR, MSAT & CET
U of Minn						
Ag,F,H Ec	420	.633	.460	.455	.662	.665
Educ	100	.451	.484	.443	.534	.540
GC	1042	.325	.249	.270	.403	.415
SLA	2805	.403	.319	.306	.453	.455
UMD	818	.611	.511	.482	.655	.657
UMM	208	.541	.428	.467	.581	.590
Four Year Liberal Arts Colleges						
B- 1	285	.549	.474	.343	.604	.605
2	77	.202	.441	.455	.452	.505
3	265	.511	.404	.352	.562	.563
4	283	.629	.553	.531	.681	.689
5	305	.617	.439	.383	.651	.651
6	261	.492	.391	.371	.560	.563
11	317	.588	.439	.323	.624	.627
16	92	.571	.494	.412	.617	.618
Range		.202-.742	.363-.730	.299-.611	.452-.787	.505-.787
Median		.588	.460	.412	.624	.627
Junior Colleges						
C- 3	93	.708	.530	.538	.715	.716
4	81	.677	.373	.455	.678	.686
5	252	.653	.487	.491	.661	.661
6	109	.859	.466	.516	.659	.662
7	278	.555	.279	.381	.556	.559
9	205	.749	.580	.545	.759	.766
10	105	.706	.615	.562	.728	.729
12	16	.937	.590	.837	.937	.946
13	178	.608	.442	.465	.612	.614
14	130	.652	.501	.533	.667	.676
15	99	.577	.502	.366	.630	.631
16	82	.641	.472	.531	.655	.658
Range		.555-.937	.279-.615	.366-.837	.556-.937	.559-.946
Median		.656	.494	.524	.664	.669
State Colleges						
D- 1	368	.646	.497	.511	.662	.664
3	1243	.679	.503	.534	.691	.695
4	344	.626	.518	.476	.650	.651
5	974	.645	.549	.577	.683	.690
6	242	.710	.568	.575	.726	.727
Range		.626-.710	.497-.568	.476-.577	.650-.726	.651-.727
Median		.646	.518	.534	.683	.690

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EXPECTANCY TABLES FOR FRESHMEN ENTERING MINNESOTA COLLEGES 2ND EDITION

by

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The tables in this report show the chances in 100 that a student has of obtaining a First Year Grade Point Average of D or higher, C or higher, and B or higher in each of several Minnesota colleges.

High School Rank and Minnesota Scholastic Aptitude Test score are used separately as the predictor variables.

The tables represent a combination of results for freshmen entering Minnesota colleges in 1959 and 1961. These freshmen were tested as juniors in the State-Wide College Testing Program during 1958-60.

CONTENTS

Introduction

In the spring of 1961 Office of the Dean of Students Research Bulletin Volume 3, Number 2 entitled "Expectancy Tables for Freshmen Entering Minnesota Colleges" was published and distributed through the Minnesota State-Wide Testing Programs. That was the first time in the history of the State-Wide Testing Program that validity information in that form had been made generally available to the high schools and colleges of the state. High school and college people over the past two years have found these tables useful in working with college bound youth and this led to the decision to revise, improve, and extend the tables.

The information provided in this report extends the thirty odd years of research information provided through the Minnesota State-Wide Testing Program aimed at increasing the meaningful use of test results in Minnesota. This research report, like those which have preceded it, has been possible only through the continuing cooperation of Minnesota high schools and Minnesota colleges in making basic data available.

The tables in this report are similar to the earlier tables in most respects. The format is the same. For each group there are two tables for predicting first year college grade point average, one based on high school percentile ranks (HSR) and one on scores from the Minnesota Scholastic Aptitude Test (MSAT). The predictor variable for each tables is divided by quintiles into five levels. At each level the expectancies (chances in 100) of a prospective student earning a first year grade point average of B or higher, C or higher, and D or higher are shown and the approximate size of the group on which they are based is given.

The new tables differ from their predecessors primarily in the number of students on which they are based. The earlier tables were based on one year's entering freshmen and the present tables are based on the scores and grades of freshmen from two years. This increase in numbers has made possible the addition of tables for some colleges not included in the last report and the provision of separate tables for males and females for most institutions.

Development

The scores and grades of freshmen entering Minnesota colleges in the fall of 1959 and the fall of 1961 who had taken the MSAT when they were high school juniors were used to develop these tables. Since the MSAT was introduced into the State-Wide Testing Program in 1957-58 the tables are based on students from the high school graduating classes of 1959, 1960, and 1961 who earned freshman grades in 1959-60 or 1961-62 in Minnesota colleges.

The development of the tables was started when each college furnished the names of their entering freshmen in the fall of 1959 and the fall of 1961. Each freshman who had taken part in the Minnesota State-Wide Testing Program in 1958 or later was identified and his State-Wide test scores determined. At the end of his freshman year the college made available his grade

point average for that year. Grade point averages were based on grades earned during the student's freshman year, excluding grades of incomplete. A detailed description of the procedure used in computing grade average is given in the report of the correlational study of these data (Research Bulletin, Volume 5, Number 1).

Two major aspects of the problem of prediction must receive attention in the development and use of expectancy tables. The first is the extent of the relationship between the predictor(s) and the criterion. Obviously if the correlation coefficient between a predictor and the criterion is not different from zero (no correlation), there is no point in using the predictors or developing expectancy tables. The correlation coefficients between HSR and GPA and between MSAT and GPA for all colleges in the study were large enough to warrant the development of expectancy tables and are presented in Research Bulletin, Volume 5, Number 1. When the correlation coefficients are substantial in size, this is reflected in expectancy table entries which change sharply and systematically across the row entries or down the column entries.

A second important consideration is the degree to which those people for whom we wish to make predictions (the potential college student) are adequately represented by the college students whose grades and scores were used to develop the expectancy tables. To make any statement about a potential student, we must fall back on information obtained on people similar to him on variables related to success in a specfic college. In every college, from one year to the next there is a certain amount of fluctuation in the ability level and academic achievement of freshmen classes. Combining data from two entering freshmen classes somewhat balances out such fluctuation. This increases the likelihood that the students for whom we predict are adequately represented by the students on whom we developed the expectancy tables. The extent to which there are trends, rather than random fluctuations, in freshmen classes diminishes the value of combining data across two or more years. Evidence on this point can be found in the Biennial Surveys of Scholastic Aptitude (Research Bulletins Volume 3, Number 1 and Volume 4, Number 2). There does <u>not</u> appear to be any large systematic change over the past few years in the high school achievement and measured academic aptitude of incoming college freshmen to make one question the representativeness of these expectancy tables.

No two students are exactly alike on all the variables relevant to college success. Since no previous student at the college to which an individual may apply provides an exact pattern as a basis on which to predict his success, we must use the level of success of many former freshmen as a guide. To compensate for specific characteristics of individuals, figures based on large numbers of students are desirable.

The stability of any one row of probability figures is primarily determined by the number of students on which that row of figures is based. The "Size of Group" used to establish the probability figures can be used as an index of the stability of the figures. A row of expectancies for each different score (single HSR or single MSAT raw score), though perhaps more helpful in one sense, would necessarily be based on such a small number of students that the probability figures would be unstable. By grouping the scores, greater stability is obtained. This compromise, in addition to providing

greater stability of the probability figures, also reinforces the dictum that test scores should not be interpreted as single point measures. This reasoning led to the use of just five groupings for each predictor and just three criterion categories--B or higher, C or higher, D or higher.

Interpretation

For each college group one table is based on HSR as the predictor and another on MSAT scores. Neither is a perfect predictor of success for any college. The probability figures obtained from the two tables for any one student will in most cases be different. Three reasons explain this: 1) the two measures represent different types of information; HSR's indicate academic achievement in high school and scores on the MSAT show performance on a test of scholastic aptitude. The correlation between these two indices is only moderate. 2) The percentile ranks used with the two measures are computed in different ways; the student's HSR is based on a comparison with only the classmates in his own high school and the MSAT percentile rank is based on a comparison with the scores of students from the entire state who were tested as juniors and subsequently entered Minnesota colleges. 3) Colleges use predictors in different ways in selecting their freshmen. These differences emphasize that while the expectancy tables provide valuable information to help students make post-high school plans. The information from neither table alone nor the combined information from the two tables is sufficient for making post-high school plans.

The school counselor is the person best able to help students use the information provided in these tables. If the information is properly interpreted, pupils and parents should be able to understand it. The counselor must help the student recognize the limitations of the information and avoid over-generalizations or misconceptions about its meaning. The counselor should help his students integrate the information from these tables with other information. For example, the college for which the probability of obtaining an average of B or higher is largest is not necessarily the student's best choice. The courses offered in the subject in which the student wants to major, financial requirements, and the many other considerations involved in college selection must be used along with the information from the tables. The counselor, however, should help the student seriously re-evaluate the choice of a college in which he would have little likelihood of success. The section entitled "How to Select a College", page 149 in Counseling and the Use of Tests, Revised (R. F. Berdie, W. L. Layton, E. O. Swanson, T. Hagenah, and J. C. Merwin, University of Minnesota Student Counseling Bureau, 1962) may be useful to the counselor.

To demonstrate how the probability information for specific colleges can be obtained from the tables we will now consider several specific students.

Ingred

Ingred has an HSR of 87 and an MSAT raw score of 46 which places her at the 71st percentile. To obtain Ingred's probability of various levels of success at Augsburg, we turn to Table 14 which is based on female students who were freshmen at Augsburg in the fall of 1959 or the fall of 1961. Ingred's HSR of 87 places her in the top group for the HSR prediction table. We note from the top row of the table that based on this information her expected chances for a "D or higher" average her freshman year are 99 out of 100*, her chances of a "C or higher" average are 85 out of 100, and her chances of a "B or higher" average are 29 out of 100. Since Ingred's MSAT score falls between the 60th and 79th percentiles, the appropriate figures to use from the MSAT table are those in the second row from the top. Here we find that based on this predictor and the groups used to establish the table her chances are 99 out of 100 that she would earn a freshman grade point average of "D or higher", 77 out of 100 that she would earn at least a "C" average her freshman year and 16 out of 100 that she would be at least a "B" average student.

Roger

Roger has a HSR of 55 and a raw score of 32 on the MSAT. He is thinking about applying for admission to Eveleth Junior College. Turning to the table based on students from Eveleth Junior College (Table 39) we first note that the expectancy figures are based on males and females combined for this college. We also note that the number of students on whom the figures are based is between 20 and 50. Roger's HSR of 55 falls between 40 and 59, so the middle row of expectancy figures are appropriate. Based on the performance of previous freshmen with HSR's between 40 and 59 we find that Roger's chances of being at least a "D" average student are 87 out of 100 and his chances of being at least a "C" average student are 68 out of 100. In the "B or higher" cell in this row we find no figure, simply a dash. This indicates that none of the 20 to 50 Eveleth freshmen with HSR's of 40-59 whose grades were used to develop this table earned an average of B or higher in their freshman year. This should not be interpreted to mean that it is impossible (probability of 0) for Roger to earn at least a "B" average if he should enter Eveleth.

Roger's MSAT score of 32 gives him a percentile rank of 34. Thus, we use the second row of expectancy figures on the MSAT table. According to this table his chances out of 100 of obtaining at least a "D", "C", and "B" average at Eveleth his freshman year are 94, 46, and 9 respectively.

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*All students whose records were used to establish this row of expectancy figures earned at least a "D" average. However, since there is never complete assurance that a future student will or will not earn a particular grade, expectancies of 100 and 0 do not appear on these tables.

Locating the expectancy figures in the appropriate table is, of course, only the first step in their use in counseling with students about post-high school plans. Two additional examples wil illustrate further considerations.

Ruth

Ruth was considering applying for admission to the College of St. Benedict and went to the counselor to discuss this. The counselor noted from Ruth's State-Wide Testing Program results that her HSR at the end of her junior year had been 45 and her MSAT percentile rank was 55. The counselor turned to Table 25 which contains the College of St. Benedict expectancy figures. He showed Ruth that based on her HSR her chances of being at least a "B" average student were not very high (3 out of 100), her chances of being at least a "C" average freshman were a little better than 50-50 (56 out of 100) and that there was a good chance that she could be at least a "D" average freshman at this college. The counselor then took Ruth's MSAT percentile rank of 55 and showed her that based on this score it appeared that the chances of her being at least a "B" average student looked a little better (13 out of 100) and the chances of her being at least a "C" student were about 3 out of 4.

Ruth found the latter set of probabilities more encouraging, but since the two sets of probability figures were different she asked which set was "right" for her. The counselor pointed out that there is no "right" set of probability figures for her. He helped her see that the probability figures from the HSR table simply show the grade averages that other girls with HSR's similar to hers had earned in their freshman year at the College of St. Benedict. He explained the basis of the probabilities on the MSAT table in a similar manner. He pointed out that these measures are just two pieces of information about her ability to succed in this college and that the tables provide information about the grades of previous freshmen who were similar to her on these measures. Based on the experience of those freshmen it would appear that the chances were considerably better than 50-50 that she would be able to do at least "C" level work her first year at this college and that she might find herself needing to put forth a considerable amount of additional effort to maintain a "B" average.

Eloise

Eloise came to her school counselor saying she thought she would like to attend either Moorhead State College or Carleton. She and the counselor discussed courses of study, requirements for admission, expenses, and activities, and then Eloise raised the question of likelihood of success at each of these colleges. To help answer this question, the counselor turned to the expectancy tables.

Eloise had an HSR of 58 and an MSAT raw score of 70 which placed her at the 99th percentile on college freshman norms. The counselor noted that Eloise's HSR fell in the middle group on the HSR tables while her MSAT score placed her in the top group. Turning to the tables for these two schools, the counselor indicated the parts of the tables for these groups.

	D or Higher Average	C or Higher Average	B or Higher Average	Size of Group
Carleton				
HSR	99	75	-	Less than 10
MSAT	99	89	24	Over 100
Moorhead				
HSR	91	32	2	20-50
MSAT	99	94	48	50-100

He explained to Eloise that the numbers indicated the chances in 100 that she would earn a grade point average of at least D, C, and B, respectively.

In helping Eloise understand these figures the counselor pointed out that the HSR figures for Carleton are based on less than 10 people and might not be a very good indication of her likelihood of success. The counselor showed Eloise that according to the HSR part of the Moorhead table her chances of being a least a "C" average student were not high (32 out of 100). The counselor and Eloise knew that illness had kept her from earning high grades in high school. The illness that had caused her to miss so much school was over and she was making excellent grades her senior year. The counselor suggested that they consider the figures from the MSAT tables. The predictions here were that Eloise would be able to do at least "C" work and possibly "B" work, or better, at either college, with some indication that she might earn slightly higher grades at Moorhead.

Using the information from the tables in conjunction with other available information about Eloise's goal for attending college, probable causes of her high school record, and admission requirements, Eloise or her counselor may decide they ought to look into any one of a number of possible considerations, some of which may involve the use of the expectancy tables for other Minnesota colleges.

Counselors should recognize that the personal meaning of the probability figures in these tables will vary for different students. For a student who wants very much to attend a certain college a 50-50 chance of being at least a "C" student may be encouraging. For the student who is looking for more assurance, a 50-50 chance of being at least a "B" student may be seen as too large a gamble. The decision to make application for a specific college must, of course, rest with the student whose aspirations, motivation and willingness to assume various levels of risk will temper the proability figures.

There is nothing in these tables that can be used legitimately as a basis for informing any student that he cannot achieve a given grade level in any specific college nor for informing him that he will achieve at least at a specified level. These tables provide counselors and their students with a summary of the grade-getting experiences of previous Minnesota high school graduates who have attended Minnesota Colleges. That such information can be misunderstood or misinterpreted cannot be too strongly emphasized.

The person in the school who works with students on post-high school plans in a professional manner will study these tables until he understands both the value of the information provided and its limitations. The person who cannot find or take time for such study of these tables should refrain from their use.

Table 1 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	UNIVERSITY OF MINNESOTA COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS SEX: MALE SIZE OF TOTAL GROUP: Over 500

Table 1a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	97	82	27	Over 100
60-79	91	40	5	Over 100
40-59	74	17	1	Over 100
20-39	76	10	-	Between 50 and 100
-19	89	22	-	Less Than 10

Table 1b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	95	68	30	Between 50 and 100
Raw Score 42-50 Percentile 60-79	87	49	13	Between 50 and 100
Raw Score 34-41 Percentile 40-59	90	53	9	Over 100
Raw Score 27-33 Percentile 20-39	85	32	1	Over 100
Raw Score 1-26 Percentile -19	79	16	-	Over 100

Table 2 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	UNIVERSITY OF MINNESOTA COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS SEX: FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 2a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	86	24	Over 100
60-79	95	49	6	Between 50 and 100
40-59	98	17	-	Between 20 and 50
20-39	88	31	-	Between 10 and 20
-19	99	-	-	Less Than 10

Table 2b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	90	38	Over 100
Raw Score 42-50 Percentile 60-79	98	82	6	Between 50 and 100
Raw Score 34-41 Percentile 40-59	97	48	6	Between 50 and 100
Raw Score 27-33 Percentile 20-39	93	38	4	Between 50 and 100
Raw Score 1-26 Percentile -19	94	23	-	Between 50 and 100

Table 3 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	UNIVERSITY OF MINNESOTA COLLEGE OF EDUCATION SEX: MALE AND FEMALE SIZE OF TOTAL GROUP: Between 300 and 500

Table 3a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	97	70	15	Over 100
60-79	92	46	-	Over 100
40-59	88	29	1	Between 50 and 100
20-39	75	-	-	Less Than 10
-19	-	-	-	0

Table 3b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	93	83	20	Between 50 and 100
Raw Score 42-50 Percentile 60-79	98	64	2	Between 50 and 100
Raw Score 34-41 Percentile 40-59	93	50	1	Over 100
Raw Score 27-33 Percentile 20-39	93	36	3	Between 50 and 100
Raw Score 1-26 Percentile -19	86	24	1	Between 50 and 100

Table 4 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	UNIVERSITY OF MINNESOTA GENERAL COLLEGE SEX: MALE SIZE OF TOTAL GROUP: Over 500

Table 4a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	90	60	10	Between 10 and 20
60-79	99	61	9	Between 50 and 100
40-59	95	52	7	Over 100
20-39	91	43	5	Over 100
-19	79	27	1	Over 100

Table 4b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	57	21	Between 10 and 20
Raw Score 42-50 Percentile 60-79	94	47	9	Between 20 and 50
Raw Score 34-41 Percentile 40-59	97	50	5	Over 100
Raw Score 27-33 Percentile 20-39	92	49	5	Over 100
Raw Score 1-26 Percentile -19	87	36	4	Over 100

Table 5 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	UNIVERSITY OF MINNESOTA GENERAL COLLEGE SEX: FEMALE SIZE OF TOTAL GROUP: Between 300 and 500

Table 5a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	99	40	Between 10 and 20
60-79	99	69	6	Between 20 and 50
40-59	93	48	2	Over 100
20-39	93	38	1	Over 100
-19	77	25	-	Over 100

Table 5b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	80	40	Less Than 10
Raw Score 42-50 Percentile 60-79	99	79	7	Between 10 and 20
Raw Score 34-41 Percentile 40-59	92	54	2	Between 50 and 100
Raw Score 27-33 Percentile 20-39	95	48	2	Over 100
Raw Score 1-26 Percentile -19	87	33	1	Over 100

Table 6 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	UNIVERSITY OF MINNESOTA INSTITUTE OF TECHNOLOGY SEX: MALE AND FEMALE SIZE OF TOTAL GROUP: Over 500

Table 6a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	95	64	17	Over 100
60-79	76	28	12	Over 100
40-59	71	15	-	Over 100
20-39	71	24	-	Between 20 and 50
-19	99	-	-	Less Than 10

Table 6b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	93	64	19	Over 100
Raw Score 42-50 Percentile 60-79	86	48	9	Over 100
Raw Score 34-41 Percentile 40-59	82	34	2	Over 100
Raw Score 27-33 Percentile 20-39	76	23	1	Over 100
Raw Score 1-26 Percentile -19	81	17	2	Between 20 and 50

Table 7 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	UNIVERSITY OF MINNESOTA COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS SEX: MALE SIZE OF TOTAL GROUP: Over 500

Table 7a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	95	65	21	Over 100
60-79	88	41	6	Over 100
40-59	85	29	3	Over 100
20-39	75	24	2	Over 100
-19	61	16	-	Between 20 and 50

Table 7b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	95	62	21	Over 100
Raw Score 42-50 Percentile 60-79	91	44	8	Over 100
Raw Score 34-41 Percentile 40-59	85	34	5	Over 100
Raw Score 27-33 Percentile 20-39	87	35	5	Over 100
Raw Score 1-26 Percentile -19	90	39	-	Between 50 and 100

Table 8 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	UNIVERSITY OF MINNESOTA COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS SEX: FEMALE SIZE OF TOTAL GROUP: Over 500

Table 8a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	97	73	21	Over 100
60-79	91	50	6	Over 100
40-59	83	34	3	Over 100
20-39	84	29	4	Between 50 and 100
-19	67	11	-	Less Than 10

Table 8b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	97	76	24	Over 100
Raw Score 42-50 Percentile 60-79	94	58	10	Over 100
Raw Score 34-41 Percentile 40-59	91	51	7	Over 100
Raw Score 27-33 Percentile 20-39	86	36	5	Over 100
Raw Score 1-26 Percentile -19	95	48	1	Between 50 and 100

Table 9 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	UNIVERSITY OF MINNESOTA AT DULUTH SEX: MALE SIZE OF TOTAL GROUP: Over 500

Table 9a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	73	20	Over 100
60-79	96	48	3	Over 100
40-59	89	25	-	Over 100
20-39	80	24	1	Over 100
-19	67	12	-	Between 50 and 100

Table 9b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	97	72	23	Over 100
Raw Score 42-50 Percentile 60-79	99	49	5	Over 100
Raw Score 34-41 Percentile 40-59	95	45	3	Over 100
Raw Score 27-33 Percentile 20-39	87	33	2	Over 100
Raw Score 1-26 Percentile -19	83	25	1	Over 100

Table 10 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	UNIVERSITY OF MINNESOTA AT DULUTH SEX: FEMALE SIZE OF TOTAL GROUP: Over 500

Table 10a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	84	24	Over 100
60-79	99	50	4	Over 100
40-59	95	33	-	Between 50 and 100
20-39	84	16	-	Between 20 and 50
-19	54	15	8	Between 10 and 20

Table 10b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	83	31	Over 100
Raw Score 42-50 Percentile 60-79	99	72	12	Over 100
Raw Score 34-41 Percentile 40-59	99	62	7	Over 100
Raw Score 27-33 Percentile 20-39	95	42	3	Over 100
Raw Score 1-26 Percentile -19	91	26	1	Between 50 and 100

Table 11 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	UNIVERSITY OF MINNESOTA AT MORRIS SEX: MALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 11a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	97	60	13	Between 20 and 50
60-79	93	47	2	Between 20 and 50
40-59	76	21	-	Between 20 and 50
20-39	54	38	-	Between 10 and 20
-19	71	57	14	Less Than 10

Table 11b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	67	17	Between 10 and 20
Raw Score 42-50 Percentile 60-79	91	59	-	Between 20 and 50
Raw Score 34-41 Percentile 40-59	88	43	7	Between 20 and 50
Raw Score 27-33 Percentile 20-39	76	28	-	Between 20 and 50
Raw Score 1-26 Percentile -19	69	23	-	Between 20 and 50

Table 12 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	UNIVERSITY OF MINNESOTA AT MORRIS SEX: FEMALE SIZE OF TOTAL GROUP: Between 50 and 100

Table 12a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	98	85	22	Between 20 and 50
60-79	99	48	-	Between 20 and 50
40-59	99	23	-	Between 10 and 20
20-39	-	-	-	-
-19	-	-	-	-

Table 12b
Predictions Based on MSAT

MSAT Quintile	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	92	54	Between 10 and 20
Raw Score 42-50 Percentile 60-79	99	91	-	Between 10 and 20
Raw Score 34-41 Percentile 40-59	96	60	4	Between 20 and 50
Raw Score 27-33 Percentile 20-39	99	56	6	Between 10 and 20
Raw Score 1-26 Percentile -19	99	20	-	Between 10 and 20

Table 13 Expectancy Tables for First Year Grade Point Average Based on Freshman Entering College the Fall of 1959 and the Fall of 1961	AUGSBURG COLLEGE SEX: MALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 13a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	98	82	26	Between 50 and 100
60-79	94	42	2	Between 50 and 100
40-59	84	20	-	Between 50 and 100
20-39	74	17	1	Between 20 and 50
-19	99	14	-	Less than 10

Table 13b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	95	80	29	Between 50 and 100
Raw Score 42-50 Percentile 60-79	91	51	7	Between 50 and 100
Raw Score 34-41 Percentile 40-59	91	41	4	Between 50 and 100
Raw Score 27-33 Percentile 20-39	84	26	-	Between 50 and 100
Raw Score 1-26 Percentile -19	95	11	-	Between 10 and 20

Table 14 Expectancy Tables for First Year Grade Point Average Based on Freshman Entering College the Fall of 1959 and the Fall of 1961	AUGSBURG COLLEGE SEX: FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 14a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	85	29	Over 100
60-79	97	49	1	Between 50 and 100
40-59	91	33	2	Between 20 and 50
20-39	99	33	-	Less Than 10
-19	-	-	-	-

Table 14b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	94	46	Between 50 and 100
Raw Score 42-50 Percentile 60-79	99	77	16	Between 50 and 100
Raw Score 34-41 Percentile 40-59	99	55	3	Between 50 and 100
Raw Score 27-33 Percentile 20-39	93	49	5	Between 20 and 50
Raw Score 1-26 Percentile -19	93	33	4	Between 20 and 50

Table 15 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	BETHEL COLLEGE SEX: MALE AND FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 15a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	79	26	Between 50 and 100
60-79	92	50	4	Between 50 and 100
40-59	88	29	6	Between 20 and 50
20-39	57	43	-	Less Than 10
-19	-	-	-	Less Than 10

Table 15b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	86	31	Between 20 and 50
Raw Score 42-50 Percentile 60-79	97	78	16	Between 20 and 50
Raw Score 34-41 Percentile 40-59	88	39	3	Between 20 and 50
Raw Score 27-33 Percentile 20-39	88	36	-	Between 20 and 50
Raw Score 1-26 Percentile -19	63	25	-	Less Than 10

Table 16 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	CARLETON COLLEGE SEX: MALE AND FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 16a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	91	26	Over 100
60-79	99	58	-	Between 20 and 50
40-59	99	75	-	Less than 10
20-39	99	25	25	Less than 10
-19	-	-	-	0

Table 16b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	89	24	Over 100
Raw Score 42-50 Percentile 60-79	99	57	-	Between 10 and 20
Raw Score 34-41 Percentile 40-59	99	99	-	Less than 10
Raw Score 27-33 Percentile 20-39	99	99	50	Less than 10
Raw Score 1-26 Percentile -19	99	-	-	Less than 10

Table 17 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	CONCORDIA COLLEGE SEX: MALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 17a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	85	41	Between 50 and 100
60-79	97	57	3	Between 50 and 100
40-59	93	35	-	Between 20 and 50
20-39	95	24	-	Between 20 and 50
-19	99	-	-	Less than 10

Table 17b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	83	42	Between 50 and 100
Raw Score 42-50 Percentile 60-79	99	58	12	Between 50 and 100
Raw Score 34-41 Percentile 40-59	96	49	12	Between 20 and 50
Raw Score 27-33 Percentile 20-39	90	45	7	Between 20 and 50
Raw Score 1-26 Percentile -19	96	67	4	Between 20 and 50

Table 18 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	CONCORDIA COLLEGE SEX: FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 18a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	90	37	Over 100
60-79	96	61	8	Between 50 and 100
40-59	93	31	-	Between 20 and 50
20-39	80	-	-	Less Than 10
-19	-	-	-	0

Table 18b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	93	49	Between 50 and 100
Raw Score 42-50 Percentile 60-79	99	77	17	Between 50 and 100
Raw Score 34-41 Percentile 40-59	99	77	20	Between 50 and 100
Raw Score 27-33 Percentile 20-39	92	49	6	Between 50 and 100
Raw Score 1-26 Percentile -19	89	37	4	Between 20 and 50

Table 19 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	GUSTAVUS ADOLPHUS COLLEGE SEX: MALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 19a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	85	24	Over 100
60-79	96	44	4	Over 100
40-59	86	28	-	Between 20 and 50
20-39	93	20	-	Between 10 and 20
-19	67	-	-	Less Than 10

Table 19b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	96	73	26	Between 50 and 100
Raw Score 42-50 Percentile 60-79	96	60	10	Between 50 and 100
Raw Score 34-41 Percentile 40-59	95	47	3	Between 50 and 100
Raw Score 27-33 Percentile 20-39	98	46	6	Between 20 and 50
Raw Score 1-26 Percentile -19	80	47	-	Between 10 and 20

Table 20 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	GUSTAVUS ADOLPHUS COLLEGE SEX: FEMALE SIZE OF TOTAL GROUP: Between 300 and 500

Table 20a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	86	26	Over 100
60-79	96	59	5	Between 50 and 100
40-59	94	24	-	Between 20 and 50
20-39	99	17	-	Less than 10
-19	-	-	-	0

Table 20b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	88	36	Over 100
Raw Score 42-50 Percentile 60-79	99	80	13	Between 50 and 100
Raw Score 34-41 Percentile 40-59	96	53	8	Between 50 and 100
Raw Score 27-33 Percentile 20-39	98	60	4	Between 20 and 50
Raw Score 1-26 Percentile -19	89	32	-	Between 10 and 20

Table 21 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	HAMLINE UNIVERSITY SEX: MALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 21a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	78	30	Over 100
60-79	95	37	1	Between 50 and 100
40-59	79	15	2	Between 50 and 100
20-39	64	9	-	Between 10 and 20
-19	-	-	-	Less Than 10

Table 21b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	94	63	28	Between 50 and 100
Raw Score 42-50 Percentile 60-79	97	65	12	Between 50 and 100
Raw Score 34-41 Percentile 40-59	87	35	4	Between 50 and 100
Raw Score 27-33 Percentile 20-39	84	25	3	Between 20 and 50
Raw Score 1-26 Percentile -19	91	-	-	Between 10 and 20

Table 22 Expectancy Tables for First Year Grade Point Average Based on Freshman Entering College the Fall of 1959 and the Fall of 1961	HAMLINE UNIVERSITY SEX: FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 22a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	84	31	Over 100
60-79	95	56	2	Between 50 and 100
40-59	82	32	-	Between 20 and 50
20-39	60	-	-	Less Than 10
-19	-	-	-	Less Than 10

Table 22b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	98	88	41	Over 100
Raw Score 42-50 Percentile 60-79	99	72	15	Between 50 and 100
Raw Score 34-41 Percentile 40-59	94	54	6	Between 50 and 100
Raw Score 27-33 Percentile 20-39	90	56	-	Between 20 and 50
Raw Score 1-26 Percentile -19	82	35	-	Between 10 and 20

Table 23 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	MACALESTER COLLEGE SEX: MALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 23a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	97	82	23	Over 100
60-79	99	40	1	Between 50 and 100
40-59	97	33	-	Between 20 and 50
20-39	99	40	-	Less Than 10
-19	99	67	-	Less Than 10

Table 23b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	98	74	25	Over 100
Raw Score 42-50 Percentile 60-79	99	56	4	Between 50 and 100
Raw Score 34-41 Percentile 40-59	98	51	4	Between 50 and 100
Raw Score 27-33 Percentile 20-39	99	55	-	Between 20 and 50
Raw Score 1-26 Percentile -19	99	33	-	Less Than 10

Table 24 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	MACALESTER COLLEGE SEX: FEMALE SIZE OF TOTAL GROUP: Between 300 and 500

Table 24a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	91	33	Over 100
60-79	99	58	3	Between 20 and 50
40-59	93	29	-	Between 10 and 20
20-39	99	67	-	Less Than 10
-19	-	-	-	0

Table 24b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	90	39	Over 100
Raw Score 42-50 Percentile 60-79	99	77	11	Between 50 and 100
Raw Score 34-41 Percentile 40-59	99	82	12	Between 20 and 50
Raw Score 27-33 Percentile 20-39	99	50	5	Between 20 and 50
Raw Score 1-26 Percentile -19	99	99	-	Less Than 10

Table 25 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	COLLEGE OF ST. BENEDICT SEX: FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 25a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	98	48	Over 100
60-79	99	79	-	Between 50 and 100
40-59	97	56	3	Between 20 and 50
20-39	44	22	-	Less Than 10
-19	-	-	-	0

Table 25b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	97	39	Between 50 and 100
Raw Score 42-50 Percentile 60-79	99	94	16	Between 50 and 100
Raw Score 34-41 Percentile 40-59	99	75	13	Between 50 and 100
Raw Score 27-33 Percentile 20-39	99	68	6	Between 20 and 50
Raw Score 1-26 Percentile -19	95	63	-	Between 10 and 20

Table 26 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering Colleges the Fall of 1959 and the Fall of 1961	COLLEGE OF ST. CATHERINE SEX: FEMALE SIZE OF TOTAL GROUP: Over 500

Table 26a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	92	41	Over 100
60-79	98	75	8	Over 100
40-59	97	57	5	Between 50 and 100
20-39	88	47	6	Between 20 and 50
-19	99	40	20	Less Than 10

Table 26b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	87	39	Over 100
Raw Score 42-50 Percentile 60-79	98	83	17	Over 100
Raw Score 34-41 Percentile 40-59	98	77	13	Over 100
Raw Score 27-33 Percentile 20-39	94	51	8	Between 50 and 100
Raw Score 1-26 Percentile -19	91	45	5	Between 20 and 50

Table 27 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	ST. JOHN'S UNIVERSITY SEX: MALE SIZE OF TOTAL GROUP: Between 300 and 500

Table 27a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	90	35	Over 100
60-79	99	64	6	Over 100
40-59	95	44	2	Between 50 and 100
20-39	90	52	-	Between 20 and 50
-19	99	43	-	Less than 10

Table 27b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	88	32	Over 100
Raw Score 42-50 Percentile 60-79	99	78	19	Over 100
Raw Score 34-41 Percentile 40-59	99	60	8	Between 50 and 100
Raw Score 27-33 Percentile 20-39	98	51	7	Between 50 and 100
Raw Score 1-26 Percentile -19	96	48	-	Between 20 and 50

Table 28 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	ST. MARY'S COLLEGE SEX: MALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 28a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	98	91	42	Between 50 and 100
60-79	98	75	2	Between 20 and 50
40-59	93	34	-	Between 20 and 50
20-39	83	39	-	Between 10 and 20
-19	86	14	-	Less than 10

Table 28b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	86	35	Between 50 and 100
Raw Score 42-50 Percentile 60-79	97	72	14	Between 20 and 50
Raw Score 34-41 Percentile 40-59	91	63	6	Between 20 and 50
Raw Score 27-33 Percentile 20-39	93	56	7	Between 20 and 50
Raw Score 1-26 Percentile -19	90	38	-	Between 20 and 50

Table 29 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	ST. OLAF COLLEGE SEX: MALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 29a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	77	16	Over 100
60-79	99	54	7	Between 50 and 100
40-59	91	27	-	Between 20 and 50
20-39	67	11	-	Less than 10
-19	99	-	-	Less than 10

Table 29b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	76	20	Between 50 and 100
Raw Score 42-50 Percentile 60-79	97	56	7	Between 50 and 100
Raw Score 34-41 Percentile 40-59	93	43	2	Between 50 and 100
Raw Score 27-33 Percentile 20-39	99	71	5	Between 20 and 50
Raw Score 1-26 Percentile -19	99	14	-	Less than 10

Table 30 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	ST. OLAF COLLEGE SEX: FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 30a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	87	23	Over 100
60-79	96	43	-	Between 20 and 50
40-59	99	17	-	Between 10 and 20
20-39	99	-	-	Less than 10
-19	-	-	-	0

Table 30b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	91	33	Over 100
Raw Score 42-50 Percentile 60-79	99	69	5	Between 50 and 100
Raw Score 34-41 Percentile 40-59	99	67	4	Between 20 and 50
Raw Score 27-33 Percentile 20-39	95	29	5	Between 20 and 50
Raw Score 1-26 Percentile -19	67	67	-	Less than 10

Table 31 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	COLLEGE OF ST. SCHOLASTICA SEX: FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 31a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	89	47	Between 50 and 100
60-79	99	79	16	Between 20 and 50
40-59	99	75	10	Between 10 and 20
20-39	99	67	-	Less than 10
-19	99	33	-	Less than 10

Table 31b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	90	60	Between 50 and 100
Raw Score 42-50 Percentile 60-79	99	90	21	Between 20 and 50
Raw Score 34-41 Percentile 40-59	99	83	17	Between 20 and 50
Raw Score 27-33 Percentile 20-39	99	69	-	Between 10 and 20
Raw Score 1-26 Percentile -19	99	50	-	Between 10 and 20

Table 32 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	COLLEGE OF ST. THOMAS SEX: MALE SIZE OF TOTAL GROUP: Over 500

Table 32a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	96	75	26	Over 100
60-79	92	51	5	Over 100
40-59	90	30	3	Over 100
20-39	78	23	-	Over 100
-19	67	11	-	Between 50 and 100

Table 32b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	97	70	27	Over 100
Raw Score 42-50 Percentile 60-79	91	52	8	Over 100
Raw Score 34-41 Percentile 40-59	87	44	3	Over 100
Raw Score 27-33 Percentile 20-39	82	23	1	Over 100
Raw Score 1-26 Percentile -19	84	33	3	Between 50 and 100

Table 33 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	AUSTIN JUNIOR COLLEGE SEX: MALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 33a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	98	80	33	Between 20 and 50
60-79	96	48	2	Between 50 and 100
40-59	78	17	2	Between 50 and 100
20-39	58	17	3	Between 20 and 50
-19	63	13	-	Between 10 and 20

Table 33b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	95	79	37	Between 10 and 20
Raw Score 42-50 Percentile 60-79	97	89	12	Between 20 and 50
Raw Score 34-41 Percentile 40-59	81	51	7	Between 20 and 50
Raw Score 27-33 Percentile 20-39	75	22	3	Between 50 and 100
Raw Score 1-26 Percentile -19	76	14	-	Between 20 and 50

Table 34 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	AUSTIN JUNIOR COLLEGE SEX: FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 34a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	96	35	Between 20 and 50
60-79	98	77	7	Between 20 and 50
40-59	99	48	4	Between 20 and 50
20-39	90	20	-	Between 10 and 20
-19	67	-	-	Less than 10

Table 34b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	95	50	Between 20 and 50
Raw Score 42-50 Percentile 60-79	99	86	10	Between 20 and 50
Raw Score 34-41 Percentile 40-59	97	80	7	Between 20 and 50
Raw Score 27-33 Percentile 20-39	97	55	14	Between 20 and 50
Raw Score 1-26 Percentile -19	96	52	4	Between 20 and 50

Table 35 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	BETHANY LUTHERAN COLLEGE MANKATO SEX: MALE AND FEMALE SIZE OF TOTAL GROUP: Between 20 and 50

Table 35a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	99	70	Between 10 and 20
60-79	99	63	-	Less than 10
40-59	99	63	-	Less than 10
20-39	99	33	-	Less than 10
-19	25	-	-	Less than 10

Table 35b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	80	60	Less than 10
Raw Score 42-50 Percentile 60-79	99	88	38	Less than 10
Raw Score 34-41 Percentile 40-59	80	60	-	Less than 10
Raw Score 27-33 Percentile 20-39	99	57	-	Less than 10
Raw Score 1-26 Percentile -19	75	38	-	Less than 10

Table 36 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	BRAINERD JUNIOR COLLEGE SEX: MALE AND FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 36a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	89	53	Between 50 and 100
60-79	99	65	10	Between 50 and 100
40-59	98	41	2	Between 50 and 100
20-39	96	29	4	Between 20 and 50
-19	57	14	-	Between 10 and 20

Table 36b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	90	43	Between 20 and 50
Raw Score 42-50 Percentile 60-79	99	67	30	Between 20 and 50
Raw Score 34-41 Percentile 40-59	95	68	25	Between 20 and 50
Raw Score 27-33 Percentile 20-39	99	41	5	Between 20 and 50
Raw Score 1-26 Percentile -19	87	41	4	Between 50 and 100

Table 37 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	CONCORDIA COLLEGE ST. PAUL SEX: MALE AND FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 37a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	98	40	Between 50 and 100
60-79	99	71	10	Between 20 and 50
40-59	99	48	-	Between 20 and 50
20-39	99	44	-	Between 10 and 20
-19	99	80	20	Less than 10

Table 37b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	94	48	Between 20 and 50
Raw Score 42-50 Percentile 60-79	99	97	27	Between 20 and 50
Raw Score 34-41 Percentile 40-59	99	71	14	Between 20 and 50
Raw Score 27-33 Percentile 20-39	97	67	3	Between 20 and 50
Raw Score 1-26 Percentile -19	99	50	-	Between 20 and 50

Table 38 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	ELY JUNIOR COLLEGE SEX: MALE AND FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 38a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	97	31	Between 20 and 50
60-79	99	75	6	Between 20 and 50
40-59	97	60	6	Between 20 and 50
20-39	92	28	-	Between 20 and 50
-19	81	0	-	Between 10 and 20

Table 38b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	93	30	Between 20 and 50
Raw Score 42-50 Percentile 60-79	96	75	4	Between 20 and 50
Raw Score 34-41 Percentile 40-59	94	48	6	Between 20 and 50
Raw Score 27-33 Percentile 20-39	94	47	6	Between 20 and 50
Raw Score 1-26 Percentile -19	94	40	3	Between 20 and 50

Table 39 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	EVELETH JUNIOR COLLEGE SEX: MALE AND FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 39a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	97	94	52	Between 20 and 50
60-79	97	71	14	Between 20 and 50
40-59	87	68	-	Between 20 and 50
20-39	68	21	-	Between 20 and 50
-19	60	10	-	Between 10 and 20

Table 39b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	82	36	Between 10 and 20
Raw Score 42-50 Percentile 60-79	88	79	38	Between 20 and 50
Raw Score 34-41 Percentile 40-59	91	65	17	Between 20 and 50
Raw Score 27-33 Percentile 20-39	94	46	9	Between 20 and 50
Raw Score 1-26 Percentile -19	74	40	2	Between 20 and 50

Table 40 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1961	FERGUS FALLS JUNIOR COLLEGE SEX: MALE AND FEMALE SIZE OF TOTAL GROUP: Between 50 and 100

Table 40a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	95	24	Between 20 and 50
60-79	99	72	17	Between 10 and 20
40-59	99	43	4	Between 20 and 50
20-39	94	18	6	Between 10 and 20
-19	88	25	-	Less than 10

Table 40b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	90	30	Between 20 and 50
Raw Score 42-50 Percentile 60-79	99	75	17	Between 10 and 20
Raw Score 34-41 Percentile 40-59	99	67	7	Between 10 and 20
Raw Score 27-33 Percentile 20-39	94	56	13	Between 10 and 20
Raw Score 1-26 Percentile -19	97	28	3	Between 20 and 50

Table 41 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	HIBBING JUNIOR COLLEGE SEX: MALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 41a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	98	93	44	Between 50 and 100
60-79	95	56	3	Between 50 and 100
40-59	90	48	-	Between 50 and 100
20-39	83	24	-	Between 20 and 50
-19	50	12	-	Between 20 and 50

Table 41b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	94	79	39	Between 20 and 50
Raw Score 42-50 Percentile 60-79	97	71	20	Between 20 and 50
Raw Score 34-41 Percentile 40-59	94	54	9	Between 20 and 50
Raw Score 27-33 Percentile 20-39	90	44	-	Between 50 and 100
Raw Score 1-26 Percentile -19	71	36	4	Between 50 and 100

Table 42 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	HIBBING JUNIOR COLLEGE SEX: FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 42a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	97	54	Between 50 and 100
60-79	99	84	13	Between 50 and 100
40-59	99	62	2	Between 20 and 50
20-39	93	64	-	Between 20 and 50
-19	71	14	-	Less than 10

Table 42b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	93	62	Between 20 and 50
Raw Score 42-50 Percentile 60-79	99	87	43	Between 20 and 50
Raw Score 34-41 Percentile 40-59	98	90	19	Between 20 and 50
Raw Score 27-33 Percentile 20-39	96	71	6	Between 50 and 100
Raw Score 1-26 Percentile -19	98	62	4	Between 20 and 50

Table 43 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	ITASCA JUNIOR COLLEGE SEX: MALE AND FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 43a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	90	34	Between 20 and 50
60-79	95	70	2	Between 20 and 50
40-59	96	51	4	Between 20 and 50
20-39	92	27	-	Between 20 and 50
-19	75	10	-	Between 20 and 50

Table 43b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	81	25	Between 20 and 50
Raw Score 42-50 Percentile 60-79	96	77	15	Between 20 and 50
Raw Score 34-41 Percentile 40-59	91	52	9	Between 20 and 50
Raw Score 27-33 Percentile 20-39	94	42	4	Between 20 and 50
Raw Score 1-26 Percentile -19	91	38	-	Between 20 and 50

Table 44 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	ROCHESTER JUNIOR COLLEGE SEX: MALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 44a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	93	71	14	Between 20 and 50
60-79	96	47	1	Between 50 and 100
40-59	95	53	1	Between 50 and 100
20-39	93	32	2	Between 50 and 100
-19	80	10	-	Between 20 and 50

Table 44b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	93	61	7	Between 20 and 50
Raw Score 42-50 Percentile 60-79	90	56	6	Between 20 and 50
Raw Score 34-41 Percentile 40-59	93	39	6	Between 50 and 100
Raw Score 27-33 Percentile 20-39	95	41	-	Between 50 and 100
Raw Score 1-26 Percentile -19	93	38	2	Between 50 and 100

Table 45 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	ROCHESTER JUNIOR COLLEGE SEX: FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 45a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	82	32	Between 50 and 100
60-79	98	62	6	Between 50 and 100
40-59	97	26	-	Between 20 and 50
20-39	84	32	-	Between 10 and 20
-19	99	-	-	Less than 10

Table 45b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	73	32	Between 50 and 100
Raw Score 42-50 Percentile 60-79	97	63	13	Between 20 and 50
Raw Score 34-41 Percentile 40-59	95	54	5	Between 20 and 50
Raw Score 27-33 Percentile 20-39	94	53	6	Between 20 and 50
Raw Score 1-26 Percentile -19	96	42	12	Between 20 and 50

Table 46 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	VIRGINIA JUNIOR COLLEGE SEX: MALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 46a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	98	90	46	Between 20 and 50
60-79	99	76	6	Between 10 and 20
40-59	98	50	2	Between 20 and 50
20-39	96	21	2	Between 10 and 20
-19	63	4	-	Less than 10

Table 46b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	86	43	Between 20 and 50
Raw Score 42-50 Percentile 60-79	99	67	17	Between 20 and 50
Raw Score 34-41 Percentile 40-59	92	65	10	Between 50 and 100
Raw Score 27-33 Percentile 20-39	93	42	2	Between 20 and 50
Raw Score 1-26 Percentile -19	87	19	-	Between 20 and 50

Table 47 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	VIRGINIA JUNIOR COLLEGE SEX: FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 47a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	93	49	Between 50 and 100
60-79	99	81	11	Between 20 and 50
40-59	99	55	-	Between 20 and 50
20-39	99	36	-	Between 10 and 20
-19	67	-	-	Less than 10

Table 47b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	97	59	Between 20 and 50
Raw Score 42-50 Percentile 60-79	99	78	25	Between 20 and 50
Raw Score 34-41 Percentile 40-59	99	69	3	Between 20 and 50
Raw Score 27-33 Percentile 20-39	97	55	-	Between 20 and 50
Raw Score 1-26 Percentile -19	95	45	-	Between 20 and 50

Table 48 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	WORTHINGTON JUNIOR COLLEGE SEX: MALE AND FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 48a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	93	30	Between 20 and 50
60-79	99	69	2	Between 50 and 100
40-59	96	53	2	Between 20 and 50
20-39	97	28	-	Between 20 and 50
-19	93	-	-	Between 10 and 20

Table 48b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	95	82	32	Between 20 and 50
Raw Score 42-50 Percentile 60-79	99	79	13	Between 20 and 50
Raw Score 34-41 Percentile 40-59	98	76	7	Between 20 and 50
Raw Score 27-33 Percentile 20-39	98	63	3	Between 20 and 50
Raw Score 1-26 Percentile -19	98	34	2	Between 50 and 100

Table 49 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	BEMIDJI STATE COLLEGE SEX: MALE SIZE OF TOTAL GROUP: Between 300 and 500

Table 49a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	98	85	28	Between 50 and 100
60-79	96	57	4	Between 50 and 100
40-59	94	29	-	Between 50 and 100
20-39	91	29	-	Between 50 and 100
-19	71	16	-	Between 20 and 50

Table 49b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	69	20	Between 20 and 50
Raw Score 42-50 Percentile 60-79	98	65	20	Between 20 and 50
Raw Score 34-41 Percentile 40-59	96	44	4	Between 50 and 100
Raw Score 27-33 Percentile 20-39	96	52	3	Between 50 and 100
Raw Score 1-26 Percentile -19	84	26	-	Over 100

Table 50 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	BEMIDJI STATE COLLEGE SEX: FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 50a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	88	20	Over 100
60-79	99	63	-	Between 50 and 100
40-59	92	32	3	Between 20 and 50
20-39	89	22	-	Between 10 and 20
-19	99	-	-	Less than 10

Table 50b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	94	36	Between 20 and 50
Raw Score 42-50 Percentile 60-79	99	89	9	Between 50 and 100
Raw Score 34-41 Percentile 40-59	99	78	9	Between 20 and 50
Raw Score 27-33 Percentile 20-39	99	59	2	Between 50 and 100
Raw Score 1-26 Percentile -19	91	25	2	Between 50 and 100

Table 51 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	MANKATO STATE COLLEGE SEX: MALE SIZE OF TOTAL GROUP: Over 500

Table 51a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshmen obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	93	33	Over 100
60-79	99	65	6	Over 100
40-59	93	49	2	Over 100
20-39	87	30	1	Over 100
-19	63	5	-	Over 100

Table 51b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	97	81	26	Over 100
Raw Score 42-50 Percentile 60-79	96	67	12	Over 100
Raw Score 34-41 Percentile 40-59	94	60	7	Over 100
Raw Score 27-33 Percentile 20-39	92	42	3	Over 100
Raw Score 1-26 Percentile -19	80	27	-	Over 100

Table 52 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	MANKATO STATE COLLEGE SEX: FEMALE SIZE OF TOTAL GROUP: Over 500

Table 51a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	95	39	Over 100
60-79	98	78	5	Over 100
40-59	98	52	1	Over 100
20-39	87	28	1	Over 100
-19	82	9	-	Between 20 and 50

Table 51b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	92	46	Over 100
Raw Score 42-50 Percentile 60-79	98	87	23	Over 100
Raw Score 34-41 Percentile 40-59	99	79	15	Over 100
Raw Score 27-33 Percentile 20-39	97	64	4	Over 100
Raw Score 1-26 Percentile -19	91	44	3	Over 100

Table 53 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	MOORHEAD STATE COLLEGE SEX: MALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 51a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	86	29	Between 20 and 50
60-79	99	65	8	Between 50 and 100
40-59	93	58	1	Between 50 and 100
20-39	92	28	-	Between 50 and 100
-19	59	9	-	Between 20 and 50

Table 51b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	86	33	Between 20 and 50
Raw Score 42-50 Percentile 60-79	99	75	8	Between 20 and 50
Raw Score 34-41 Percentile 40-59	98	65	7	Between 50 and 100
Raw Score 27-33 Percentile 20-39	91	47	2	Between 50 and 100
Raw Score 1-26 Percentile -19	84	25	-	Between 50 and 100

Table 54 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	MOORHEAD STATE COLLEGE SEX: FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 54a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	93	36	Over 100
60-79	99	80	6	Between 50 and 100
40-59	91	32	2	Between 20 and 50
20-39	90	35	-	Between 20 and 50
-19	43	14	-	Less than 10

Table 54b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	94	48	Between 50 and 100
Raw Score 42-50 Percentile 60-79	99	88	29	Between 20 and 50
Raw Score 34-41 Percentile 40-59	99	84	13	Between 50 and 100
Raw Score 27-33 Percentile 20-39	97	65	7	Between 50 and 100
Raw Score 1-26 Percentile -19	87	37	3	Between 50 and 100

Table 55 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	ST. CLOUD STATE COLLEGE SEX: MALE SIZE OF TOTAL GROUP: Over 500

Table 55a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	83	25	Over 100
60-79	96	56	3	Over 100
40-59	85	35	3	Over 100
20-39	76	23	-	Over 100
-19	59	8	-	Between 50 and 100

Table 55b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	98	78	24	Between 50 and 100
Raw Score 42-50 Percentile 60-79	96	69	12	Over 100
Raw Score 34-41 Percentile 40-59	92	50	5	Over 100
Raw Score 27-33 Percentile 20-39	84	34	3	Over 100
Raw Score 1-26 Percentile -19	73	22	1	Over 100

Table 56 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	ST. CLOUD STATE COLLEGE SEX: FEMALE SIZE OF TOTAL GROUP: Over 500

Table 56a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	88	29	Over 100
60-79	95	47	3	Over 100
40-59	88	22	-	Over 100
20-39	74	15	-	Between 50 and 100
-19	46	-	-	Between 10 and 20

Table 56b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	90	41	Over 100
Raw Score 42-50 Percentile 60-79	99	84	18	Over 100
Raw Score 34-41 Percentile 40-59	97	56	7	Over 100
Raw Score 27-33 Percentile 20-39	87	35	4	Over 100
Raw Score 1-26 Percentile -19	83	24	-	Over 100

Table 57 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	WINONA STATE COLLEGE SEX: MALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 57a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	99	34	Between 20 and 50
60-79	99	84	7	Between 20 and 50
40-59	95	53	-	Between 50 and 100
20-39	95	41	3	Between 20 and 50
-19	75	13	-	Between 20 and 50

Table 57b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	88	25	Between 10 and 20
Raw Score 42-50 Percentile 60-79	96	76	16	Between 20 and 50
Raw Score 34-41 Percentile 40-59	95	63	7	Between 20 and 50
Raw Score 27-33 Percentile 20-39	98	57	-	Between 20 and 50
Raw Score 1-26 Percentile -19	88	45	4	Between 50 and 100

Table 58 Expectancy Tables for First Year Grade Point Average Based on Freshmen Entering College the Fall of 1959 and the Fall of 1961	WINONA STATE COLLEGE SEX: FEMALE SIZE OF TOTAL GROUP: Between 100 and 300

Table 58a
Predictions Based on HSR

High School Rank Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
80-	99	93	41	Between 50 and 100
60-79	99	79	11	Between 50 and 100
40-59	97	53	-	Between 20 and 50
20-39	82	14	-	Between 20 and 50
-19	71	14	-	Less than 10

Table 58b
Predictions Based on MSAT

MSAT Quintile Group	Chances in 100 of a freshman obtaining an average grade of:			Size of Group
	D or Higher	C or Higher	B or Higher	
Raw Score 51-78 Percentile 80-	99	96	65	Between 20 and 50
Raw Score 42-50 Percentile 60-79	99	95	41	Between 20 and 50
Raw Score 34-41 Percentile 40-59	99	80	7	Between 20 and 50
Raw Score 27-33 Percentile 20-39	99	58	-	Between 20 and 50
Raw Score 1-26 Percentile -19	84	27	-	Between 50 and 100

Theda Hagenah

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COLLEGE FRESHMEN'S ATTITUDES TOWARD WORKING WIVES

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CONTENTS

ABSTRACT

A marriage role questionnaire was administered to 4283 entering freshman students. Preference for time of marriage and employment was ascertained. Independence of attitudes from classification by sex, dating and marital status, college of enrollment, and socio-economic status was tested by Chi-square technique. Degree of relationship between own attitudes, perceived attitudes of others and cultural norms was measured by Phi coefficient. Hypothesized differences by dating and marital status, college of enrollment, and socio-economic status were found. Greater similarity was found between own beliefs and cultural norms than between own beliefs and those perceived to be held by others. Traditional-nurturant roles were preferred over equalitarian-self-fulfillment ones.

Woman's role has changed markedly during the last half century. Women of today have many responsibilities in their lives; they are mothers, homemakers, citizens, members of social organizations, and, increasingly wage earners. Toward all of these responsibilities, each woman has developed attitudes about which responsibilities are proper and acceptable for her and how she wants to fulfill them. Her husband also has developed attitudes, opinions, and beliefs toward her responsibilities. These attitudes define the role she selects to play and the role her husband hopes she will play as she adjusts and adapts to the demands of her life situation.

A most striking change in the lives of women today is that so many of them have become wage earners. The term wage earner may imply that women who work must work for economic reasons, but as it is used here it implies broader meaning, for a woman may work because she is bright or because she knows that she needs the social stimulation of a job to keep her mental health.

The striking increase in the numbers of women in gainful employment outside of the home has been described as a revolution in Womanpower (1957), a publication of the National Manpower Council.

> "A revolution in women's employment has occurred in the course of the present century. Today, one third of all of the women in the United States, age fourteen and over, are in the labor force in any given month, and well over two-fifths--some twenty-eight million--work in the course of a year. Three out of every ten married women are now working, and nearly two out of every five mothers with children of school age are in the labor force."

Women have attitudes toward the changing role of women in society, and from these evolve the roles they hope and strive to play. For the psychologist, these beliefs and resulting roles are related to needs and conflicts. In any period of transition and change of roles, some women will have conflicts about their own abilities and interests, whether they should serve only as an accessory and aid to their husbands and children, whether they should seek their own careers, or whether they can do both.

The research concerned with the employment of married women suggests much concern with needs, attitudes, and roles of married women who are employed. Hatch and Hatch (1958) reviewed 35 articles in three magazines designed to serve the interests of working women--Mademoiselle, Glamour, Charm--to discover to what extent these articles presented a constructive approach to recognition and solution of problems of the married women with regular paid employment. They were concerned with conflicts resulting from the

obligations to the job, home, and children. They interpreted these articles in terms of a rationale of "objects of striving" which fulfill needs rather than in terms of a rationale of playing a role. Among the objects of strivings they described were physical security, sexual satisfaction, expression of hostility, expression of love, securing of love, securing of recognition, expression of spontaneity or creativity, and securing membership in a definite group. They suggested the age of a woman may determine how she seeks to fulfill these needs, stating that "marriage may appear to the woman of 22 as the best way of attaining security, love and recognition. A few years later a job may appear to be a more promising avenue to security, recognition, and expression of creativity." They continued, "whereas objects of striving associated with the attainment of recognition, creative expression, and security were formerly identified with marriage and home, they may now be linked with paid employment outside the home." Winch (1958) also stressed needs and their complementariness in marriage, and suggested such complements as succorance-nurturance and dominance-submissiveness. The etiology of the roles of husband and wife may be found in the needs each is seeking to fulfill, particularly as Winch suggested when the needs complement those of the partner.

More frequently, however, researchers concerned with the employment of married women used a rationale related to role rather than need in seeking an interpretation of their findings. The two are intertwined, but probably fewer assumptions are made in using identification of role than in using need, for role is a description of behavior. Although the roles were given various titles, most writers agreed on a continuum from traditionalism or authoritarianism to equalitarianism as a range for describing adjustment in today's marriages.

Motz (1950), in a study of the effect of status on conceptions and playing of husband-wife roles, used the terms conventional and companionate to describe the roles in marriage. In the conventional role, the husband is the bread winner with his prestige and authority dependent on his work, and the wife is responsible for the physical care of home and children. For her, education is nice but not very useful. In the companionate role, the personality needs of husband and wife are emphasized; there is greater equality in economic, household, parental, and social responsibilities; and education and employment are considered valuable for the personal growth of man and wife. Motz found that for the majority of her subjects, a group of married students at the University of Indiana, the appropriate role for the man was companionate and for the wife conventional. Conventional definitions of husband-wife roles were espoused by more women than men with lower middle class backgrounds. She also found discrepancies between role conception and role playing.

Authoritarian and equalitarian were the terms used by Sanford (1958) to describe the continuum of adjustment of husband and wife. In his studies of Vassar women, who were upper-middle and middle class women, he found a trend toward a return to traditional feminine roles with accent on

preparation for feminine roles. Although almost all the women he studied had plans to work, few intended to prepare themselves for highly responsible positions or for activities that were particularly challenging or highly rewarding. He suggested that it is difficult for a woman to be highly feminine and at the same time highly educated.

In a study particularly pertinent to the research reported here because of the age of the subjects, Dunn (1960) studied the extent to which adolescent expectations reflect equalitarian or traditional conceptions of marriage roles. She developed an instrument in which the items were split to measure equalitarian and traditional attitudes in seven areas: homemaking, employment, education, personal characteristics, social participation, care of children, and authority. Her subjects were 436 high school seniors, 238 girls and 198 boys, ranging in age from 16 to 21 years. She concluded that the trend was toward a companionship-equalitarian type of marriage, although these students still accepted the traditional role of the wife as a homemaker and the husband as a breadwinner.

Glenn (1959) interviewed 247 small southern town married women and asked them to identify justifiable reasons for working. She found these women believed it was all right for married women without children to work if they wished. They believed a woman should contribute to family goals and did not favor employment for personal reasons, such as use of special skills, experience, and competence. Neither did they believe a woman should work to establish financial independence from her husband. Women with children should seek employment only when circumstances are such that it becomes necessary. Although Steinmann (1958) was concerned primarily with the need for communication and was not concerned necessarily with employment, her findings are of interest. She used an attitude inventory revolving around the feminine role that distinguished between the traditional or other-oriented woman and the liberal or self-oriented woman. The former fulfills herself through others and the latter seeks fulfillment in life by actualizing her own potentialities. The findings (153 subjects) indicated that the feminine role is made up of equal amounts of other- and self-oriented elements.

Hartley (1959) summarized this well in commenting on the results of lengthy interviews with forty working mothers. She said, "Most of the working mothers we interviewed consider their work as an aspect of their nurturant function. It is another way in which they can serve their families. They do not substitute work for family obligations--they add it to the traditional roster of womanly duties and see it as another way of helping their husbands and providing for the needs of their children. Their husbands are still seen as the major and responsible breadwinners..."

In the study reported here, University of Minnesota freshmen were asked about their attitudes toward the occupational motivations of married women.

These attitudes were explored to define the role women students themselves hope to play and the role that the men students hope their wives will play. An interpretation of a college woman's willingness to work after marriage as an indication of her desire for the equalitarian rather than the traditional role in marriage could be fallacious. A woman may wish to work to provide luxuries for her children or to help her husband complete his education but not to fulfill her own abilities and interests. The economic reasons for working may stem from needs to fulfill a nurturant or feminine role and may lead to a traditional rather than equalitarian marriage. These students also were asked to indicate whether they thought a given reason for the employment of married women would be accepted by most women and make a value judgment whether it should be accepted. Relationships between these reasons were analyzed to gain some understanding of cultural trends.

These attitudes and beliefs are important to college administrators who are concerned with the education of women. It seems unlikely that a woman who wishes to work after marriage only as she needs to supplement the family income and not to fulfill abilities and interests will have much interest in undertaking a professional curriculum in college that is time consuming and rigorous and which leads to heavy professional responsibility after training. She will be attracted to employment which requires skills that can be quickly acquired and which does not demand continuous professional responsibility. She will likely be more strongly motivated to devote her time to her home and work only to implement her nurturant role. College educators may find that the needs of most women are best met by the liberal arts supplemented by sub-professional vocational training.

PLAN OF THE STUDY

A questionnaire was designed to measure the attitudes of entering University students toward the occupational motivations of married women in order to provide answers to the following questions.

1. Do men and women freshmen plan to marry at different times?

2. Are the preferences of the men for the employment of their future wives different from the preferences of the women for employment when they are married?

3. Do men and women find the same reasons acceptable for women's employment after marriage?

4. Do men and women agree about the decisions concerning the wife's employment, home responsibilities, and marital adjustment?

5. Are the above attitudes related to marital and dating status, college of enrollment, and socio-economic status?

6. Are the reasons for women working that college freshmen find acceptable the same as the reasons they believe others will accept?

7. Are the reasons for women working that college freshmen accept the same as they believe they should accept?

During the winter, 1959, a preliminary questionnaire was developed to measure the attitudes of entering college freshmen toward the motivations of married women, and was administered to students entering the University of Minnesota in the spring, 1959. It also was given to a group of married women who were not students but some of whom were employed. Suggestions were obtained from both of these groups for revising the questionnaire to increase the likelihood of adequately covering the reasons why women work. Separate but analogous forms were prepared for men and women.

The final questionnaire was composed of three parts[1]. In order to relate beliefs to certain personal characteristics, information was requested on sex, age, dating and marital status, length of marriage, urban or rural residence, education of father, education of mother, religious affiliation, father's occupation, mother's employment status and mother's occupation. In the second part of the questionnaire, the entering freshmen were asked to indicate when they wanted to be married, the men whether they wanted their wives to work, and the women whether they wanted to work after marriage. Finally, the students were asked which reasons for women's working after marriage they accepted, which reasons they believed most women accepted, and which reasons they thought they should accept. They also were asked how the decision should be made whether a wife works, whether responsibilities should be shared in the home if the wife works, and the effect of the wife's employment on marriage.

The subjects were freshmen entering the University of Minnesota fall quarter, 1959, 2,729 men and 1,554 women. This represented 94 per cent of incoming freshmen during that quarter, excluding entering nursing students. Questionnaires were not secured from 277 freshmen of the total class of 4,558 entering freshmen for various reasons[2].

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[1]Copies of the questionnaire can be obtained from the authors, as can tables showing the per cent of each group responding to each item.

[2]Frequency distributions describing the sample from personal data in the questionnaire are available in the Student Counseling Bureau.

Almost twice as many men as women entered the University in the fall, 1959. The women were significantly younger than the men, with 94 per cent of the women and 84 per cent of the men 19 years of age or younger.

Contrary to popular opinion, few college freshmen upon entrance to the University were married, engaged, or pinned. Four per cent of the men, one per cent of the women, or three per cent of the total were married, and only two per cent of the total were engaged or pinned. Although the sexes did not differ regarding marital and dating status, the most common behavior for both sexes was to date but not to go steady. Ten per cent of the total sample did not date at all. Because attitudes toward the employment of married women might be related to marital and dating status, chi-square tests were completed using this classification. The four sub-groups used among the men were married, engaged or pinned and going steady, dating but not going steady, and not dating. The married sub-group was omitted for tests on responses of the women because of small numbers.

Attitudes may vary among students by college of enrollment. Women who attend colleges offering vocational training may have different attitudes toward working after marriage than those who attend a liberal arts college. Similarly, attitudes of men in a liberal arts college may differ from those of men in colleges with vocational emphasis. The sub-groups used in the chi-square test of this hypothesis for both men and women were 1) Agriculture, Forestry, Home Economics, and Veterinary Medicine; 2) Education; 3) Science, Literature, and the Arts; and 4) General College. In addition, enrollment in the Institute of Technology was used for men. Because of small numbers, enrollment in Dental Hygiene and Mortuary Science were not used.

Although attitudinal differences may be related to urban-rural residence, parental education, and religious affiliation, none of these tests were made. Approximately 70 per cent of entering freshmen were of urban residence. The modal level of education for both the fathers and mothers of these entering freshmen was high school graduation. Lutheran, 35 per cent, and Catholic, 24 per cent, were the most common religious affiliations.

To determine whether differences in attitudes were related to differences in social class, students were asked for their father's occupation and instructed to describe as accurately as possible the duties or work performed. Each questionnaire was reviewed and the occupations of the fathers and mothers were coded, using the Dictionary of Occupational Titles (DOT, 1949).

For purposes of this study, occupation was used as an indicator of the more general concept of socio-economic status. Warner (1949) found that occupation correlated .91 with social class and was the single best

indicator of social class. Ten sub-groups corresponding to the major groups of the DOT were used in the test of the relationship between socio-economic levels and attitudes[3].

Although data on the employment status of the mothers and their occupations if employed full-time were collected, the relationship between mothers' occupations and attitudes was not investigated.

RESULTS

Preferences--Time of Marriage and Employment after Marriage

Time of Marriage

Freshmen who entered the University of Minnesota in the fall, 1959, were asked to indicate their preferences for time of marriage. The rationale for asking for this information was to gain some understanding of what these entering college freshmen considered an appropriate time for marriage, or whether they had considered the question at all. It would seem that those who prefer early marriages would have given more thought to the employment of their wives than would those who planned to delay their marriages.

Table 1 Relevant Here[4]

Twenty-nine per cent of the total, 40 per cent of the men, and nine per cent of the women had never given much thought to the time they would like to be married. One per cent, 43 individuals, did not plan to marry. Probably neither of these groups had given much consideration to employment of wives after marriage.

Fourteen per cent of all the freshmen would like to be married while in college, and of this group the majority, 11 per cent of the tital, preferred that the wife remain in school and graduate. Three per cent indicated that they would like to be married in college even if it would mean that the wife had to quit school. Twenty-four per cent of the men and 55 per cent of the women preferred to be married a year or two after graduation from college. The time when college women should marry was viewed differently by freshmen men and women, and the differences are significant at the .001 level.

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[3]A more extensive analysis of these data is reported in an article entitled, "Occupations of Fathers and Mothers of Entering University of Minnesota Freshmen, Fall, 1959." Personnel Guidance Journal, 1962, 40, 622-627.

[4]Relevant tables may be obtained by writing to the Student Counseling Bureau.

Employment after Marriage

The women were asked to indicate their preferences for employment after marriage, item 22, and, analogously, the men were asked to respond with respect to the employment of their wives. Forty-three per cent of the

Table 2 Relevant Here

freshmen indicated they had no exact plans in mind and would wait to see what happens. Nearly one-half of the men and over one-third of the women apparently had no strong convictions about whether married women should work, but planned to adjust to the problem when it arose. Over one-fifth of the men did not want their wives to hold full-time jobs, while only six per cent of the women indicated that they did not want to hold a full-time job after marriage. Twenty-two per cent of the men were willing to have their wives work part-time or full-time until the first child is born, compared to 33 per cent of the women. Seven per cent of the women preferred to return to full-time work after they have had children, but only one per cent of the men preferred this. In general, the proportion of women who preferred to work after marriage was larger than the proportion of men who wanted their wives to work.

The men differed from the women (.001) with respect to their preferences for employment of women after marriage. In general, the women were more interested in working than the men were in having their wives work.

Few of the students, one per cent of the total, were planning that they or their wives would work full-time indefinitely. Another three per cent of the total, representing seven per cent of the women and one per cent of the men, preferred full-time work until there were children with return to a full-time job when it is feasible. Women, planning for continued full-time employment, might be concerned about training for jobs that are compatible with their abilities and interests. For other women planning for temporary or part-time employment, training with respect to their interests and abilities would be of minor concern. In general, few college freshmen women in this study have plans for continuous, full-time employment, an attitude that undoubtedly influences their educational plans and vocational choices. These attitudes are reinforced by freshmen men.

In summary, most of the entering freshmen indicated that they preferred not to marry until after college and many had given little thought to whether a married woman should work. For these reasons, questions could be raised as to how much thought these students had given to the attitudes evaluated in this study. This lack of personal concern or perspective by many of the students should be kept in mind in the interpretation of the findings.

Why Married Women Work

This part of the study was based on the last 44 items, 23-66, of the questionnaire. Thirty-nine items were concerned with the reasons married women have for working, three were concerned with making the decision whether the wife works, one with sharing of responsibilities for the home and children if the wife works, and one with the effect of the wife's employment on marital adjustment. Only selected items will be discussed here.

The reasons college students accept for the employment of women will have some impact on the role they expect these women to play, the nurturant-traditional role or the equalitarian-self-fulfillment one.

Traditional-Nurturant Role

Table 3 Relevant Here

The next items were concerned with nurturant-traditional motives. While some disagreement existed between men and women in regard to these motives, the sexes markedly agreed, 92 per cent of the men and 96 per cent of the women, that women do not hold jobs after they are married because they are needed in the home if there are pre-school children (50).[5] Both men and women believed that women hold jobs after they are married so that they can buy more things for home and family (39). Significantly more of the women, 68 per cent, believed this than do men, 61 per cent. Sixty-three per cent of both sexes agreed that women hold jobs after they are married so their husbands can complete their education (35). While this is a recent development and in this sense was not strictly traditional, the nurturant motivation was quite apparent. The reason women do not hold jobs after they are married because it would make their husbands feel "less of a man," (56) was rejected. Only 25 per cent of the men and 29 per cent of the women believed this to be so, and there was no significant difference between the sexes. Strong support, though not equally so for both sexes, was given to the traditional point of view, women do not hold jobs after they are married because men are responsible for the financial care of their families (57). Sixty-eight per cent of the men answered in the affirmative, but only 52 per cent of the women, a significant difference. However, three-fourths of both sexes agreed that women work after marriage to meet financial responsibilities (23). Of all the motivations for a married woman's going to work, this one was most acceptable.

In summary, these attitudes generally supported the nurturant-traditional role, but there was some evidence that men inclined more in this direction than women.

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[5]The numbers in parenthesis refer to the number of the questionnaire item to which the statement corresponds.

Equalitarian-Self-Fulfillment Role

Table 4 Relevant Here

The first three items of this table are concerned with the fulfillment of abilities and interests. Forty-one per cent of the women in comparison to 32 per cent of the men, a significant difference, believed women hold jobs after they are married because they owe it to themselves to make use of their abilities (40).

In contrast, fewer of both men and women, 24 per cent each, believed women hold jobs after they are married because staying at home does not allow sufficient challenge of talents (art, music, writing, etc.) (49). Thus, the majority of these college freshmen did not believe that homemaking inhibits the expression of creative talent. Only about one-fourth of the sample, 24 per cent of the men and 23 per cent of the women, accepted the belief that women hold jobs after they are married because housework does not provide an opportunity for the expression of intellectual interests (29). Men and women did not differ significantly in their beliefs that a woman's intellectual need will not be stifled by the menial aspects of housework. This attitude was given further impetus by the denial that women hold jobs after they are married because housework and care of children are too routine (47). The sexes differed significantly; only 16 per cent of the men and 12 per cent of the women answered in the affirmative. More acceptable to women was the idea that women hold jobs after they are married to provide an opportunity to work with others who have similar interests (27). Fifty-five per cent of the women believed this while only 41 per cent of the men did, differing significantly. Both men and women rejected the reason that women hold jobs after they are married so that they can have a life of their own (42). Fewer of the women, 78 per cent, rejected this reason than the men, 85 per cent.

Unlike the small numbers of men and women who believed women should fulfill their abilities and talents through gainful employment, a great number wanted women to work in order to use their training. The socio-economic origins of these students may be such that they value getting an economic return from money spent on their education. Fifty-one per cent of both sexes believed women should work after they are married to get some financial return from money spent on advanced training (34). Further, they wanted to try out their training. Sixty-one per cent of the women believed women should work after marriage because they want to try out what they have been trained for. A significantly smaller proportion of men, 48 per cent, agreed with this.

Lastly, there was agreement between the sexes that women do not hold jobs after they are married because they could not handle both responsibilities, the home and the job (54). Sixty-five per cent of the men and 57 per cent of the women believed this to be true and this was a significant difference. A majority seemed confident that they are able to master both responsibilities.

The motivation for self-fulfillment is a complex one. It includes needs to satisfy creative and intellectual abilities, to be with others of similar interests, and to make use of one's training. Further, there is a very practical desire to secure financial return from money spent on training. To have a life of one's own may be the motivation underlying all of these attitudes. But, to the majority of these students, self-fulfilling needs were not strong. Rather, these women preferred to play the traditional-nurturant role, ministering to the needs of their children and husbands and aiding in their self-fulfillment. The men, even more so, agreed and wanted their wives to play this role.

Other Motives

Table 5 Relevant Here

Other reasons investigated include motives of social responsibility and democratic functioning in the home. The last item of the questionnaire asked students to make a prediction about marital adjustment.

Both sexes agreed that the decision whether a wife works should be made by husband and wife together (62). Eighty-eight per cent of the men and 94 per cent of the women held this to be true, with a significant, although small, difference between the sexes. Again men and women both believed that responsibilities for the care of the house and children should be shared by husband and wife (65). Seventy-nine per cent of the men and 82 per cent of the women with no significant difference between them affirmed this democratic concept. A majority, 66 per cent of men and 63 per cent of women, believed that difficulties are likely to arise in marital adjustment when the wife works (66).

Both sexes denied that women hold jobs after they are married to meet an obligation to society to use their training (32). Only 31 per cent of the men and 38 per cent of the women answered this in the affirmative, differing significantly on this despite their common rejection of this reason.

The employment of the married woman was seen as a problem potential no matter what the motivation to work or the mutuality of the decision process has been. The tendency to think of household functioning democratically and to see decision-making as a joint enterprise can be interpreted as a modern approach in the practical aspects of marriage, in a marriage that has, however, many traditional features, as has been clear from the preceeding evidence.

College of Enrollment

Since students do not enter the University of Minnesota at large but enroll in specific colleges because of ability and educational and vocational goals, responses to items in the questionnaire might differ from college to college. In other words, college of enrollment may reflect role concepts.

These chi-square differences will be related to the traditional-equalitarian continuum. Although responses on 37 of the 44 items differed significantly according to college of enrollment, only those items are reported which are related to role concept.

Men's responses varied less according to college of enrollment than did women's. On three of the items, 49, 42, and 50, the responses did not vary by college of enrollment for either sex. Both men and women in all

Table 6 Relevant Here

colleges rejected the belief that women hold jobs after they are married because staying at home does not allow sufficient challenge of talents (49), and women hold jobs after they are married so they can have a life of their own (42). Similarly, the belief that women do not hold jobs after they are married because they are needed if there are pre-school children (50) was strongly accepted.

On only four items did men's responses vary according to college of enrollment. Interestingly, three of these are found in the traditional-nurturant category and more specifically deal with perceptions of husband's role; women do not hold jobs after they are married because men are responsible for the financial care of their families (57); women hold jobs after they are married so that husbands can complete their education (35); and women do not hold jobs after they are married because it would make their husbands feel "less of a man," (56). The fourth item, responsibilities for the care of the house and children should be shared by husband and wife (65) points to a democratic management of the home and role of the husband. Responses to items 57 and 65 varied for both men and women by college of enrollment.

The women varied by college on more items than did the men; seven related to the self-fulfillment role, three related to the traditional role, and four related to other motives. These results pointed to the variability among women and indicated that the need for self-fulfillment was related to college of enrollment or possible vocational commitment.

The college in which women chose to enroll reflected the role they wish to play. Women who enrolled in home economics, for example, had stronger career motivation than women who chose a liberal education. Women in both the General College and the College of Science, Literature, and the Arts may be planning to have careers, but these colleges also have women enrolled who desire a liberal or general education. These differences

in motivation among women may have accounted for the greater variability by college of enrollment in the responses of women when compared to men.

An interpretation contradictory to the above is that a woman interested in a liberal arts education is less traditional in her thinking than the woman who is practical in her career orientation. The latter may train for a career to increase her family's and her security. The liberal art's woman through her commitment to a broad education may know and accept that the role of women is changing and she may want to be a part of this. A choice of college may well represent a different role perception.

Dating and Marital Status

Students attending colleges and universities are at an age when they are dating, going steady, engaged, or married. Though roughly 20 per cent of the total student population was married, only three per cent of this incoming freshman class studied was married, four per cent of the men and one per cent of the women. The authors hypothesized that attitudes would vary with dating and marital status and differences might be related to stages of the social-sexual development of the student. Students who were married would have different attitudes from those who were engaged and going steady and more likely from those who were not dating at all. The latter may have given little attention to the question of whether married women should work.

Responses of both men and women students to six of the 44 items were related to dating and marital status. In addition, responses of men to 12 other items and responses of women to three other items were not independent of this classification. The items were arranged in the following order: first, differences occurring in both sexes; second, differences among men only; and third, differences among women only.

Table 7 Relevant Here

The first five items are concerned with self-fulfillment. For example, they deal with the expression of intellectual interests, the use of abilities, and expression of creative talent. Perhaps those students who were married or who were contemplating marriage soon would be more accepting of the self-fulfillment of women. However, the analysis of the data did not allow this conclusion. A similar interpretation could be attached to women hold jobs after they are married because housework and care of children are too routine (47).

The next twelve items are those in which there are significant differences among men when they were classified by dating and marital status. For many of these items the reasons for these differences are obscure, but they might be related to the stage of the student's social-sexual develop-

ment. Because more of the men were married than were the women, differences did occur on women hold jobs after they are married so husbands can complete their education (35). Maybe under the duress of financial responsibility, men found it easier to accept this reason for married women's working. Also fewer of the men were dating than women. Attitudes might be related to the degree to which men understand women. The student who is not dating in contrast to the one who is engaged will be less perceptive of women's needs. Whatever the underlying reasons, marital and dating status among men caused differences in response to more items than it does among women.

Women differed on only three items (60, 59, and 61). Two of these deal with the care of the home. The direct relationship between a specific state of dating and courtship and the responses was not a part of this analysis.

In summary, students with different marital and dating status had different attitudes. As in all psychological attributes, these differences may be developmental. This raises the question of how attitudes toward the traditional and equalitarian roles of women would change as the individual passes through the social-sexual stages of his development, dating, marriage, and early and later parenthood.

Socio-Economic Status

In contrast to marital and dating status and college of enrollment, attitudes varied little when students were classified by social class. On only twelve items were there significant differences related to class, one item for both men and women, nine for men alone, and two for women alone. Socio-economic status was defined in terms of the father's occupation. Men students came from lower socio-economic groups than did women.

Table 8 Relevant Here

Among men, six of the items of ten items were concerned with economic motives. For example, women hold jobs after they are married to buy more things for home and family (39) suggested a very practical motive for married women's working. Similarly, women hold jobs after they are married to insure their job security in case of their husband's death or illness (37), is again practical.

None of these are concerned with the fulfillment of women through the training of her abilities and interests. Rather, responses varied with social class when the items were concerned with working to meet financial responsibilities, to get financial return for money spent on advanced training, to insure job security in case of their husband's illness or death. Most attitudinal studies report a relationship between beliefs and socio-economic status, but this trend was not apparent in this study.

Own Beliefs in Relation to Perceived Beliefs About Others and Cultural Norms

Role expectations, while generated by overall cultural changes, remain subject to individual differences. Whether roles are constitutional--women are born to play a helpful role in caring for others (Deutsch, 1944) --or whether they are learned from cultural values, is controversial. If values are learned, over a period of time cultural shifts may cause the emergence of new values. This portion of the study was concerned with the way in which these students view the attitudes and beliefs of others.

Men and women students were asked to respond to each of the reasons discussed in this study in three ways: whether they would accept the reason for married women's working, whether most men and women would accept it, and whether it was a culturally acceptable reason. To assess the relationships among the responses, two sets of phi coefficients were obtained: one between the students own acceptance or rejection of each reason for the employment of married women and whether they believed most women would accept it; and, the other between their own acceptance or rejection of the reason and whether they believed it should be an acceptable reason for married women's working.

The extent of the relationship between the reasons the students themselves accept for the employment of married women and those they think others accept would indicate the motivations they assign to others in relation to their own. The extent of the relationship between the reasons the students accept and those they believe should be the reasons for a married women's working will give clues to the extent to which they accept cultural values as they see them. This "should" in the statement represents a cultural value. A low relationship between these two responses might reveal a need for independence in setting one's own values. On the other hand, lack of acceptance of cultural pressures might cause guilt and accompanying anxiety. More important for the purposes of this study, low relationships may suggest a trend, a change in values, a willingness for these college students to say that they know how they should feel, but that they don't feel that way.

If the relationship between their own reasons and the reasons of most women was smaller than that between their own reasons and what these reasons should be, two interpretations would be possible. Either many of these students saw others as willing to diverge from cultural values more than they do, or they lacked understanding of others, had poor ability to identify with others, or had a need to set themselves apart from the essential humanism of others. They were willing to ascribe less desirable motivations to others than they accepted for themselves.

Table 9 Relevant Here

Women stay home to care for pre-school children (50) was one of the least controversial items in the questionnaire. The phi coefficient between their own beliefs and what they thought were the beliefs of others was .98, indicating that they believe most women would agree that they should not work if there were pre-school children in the home.

Did these students feel that a woman can fulfill herself, her abilities and interests in the home? Generally they did. They were practical for the most part; if a woman has advanced training, the majority, although a slight one, believed she should get some financial return from her training (34). Further, they felt little obligation to work.

Many individuals believed that one of the most important sources of loss of training in this country occurs among women. For both men and women the modal response to women hold jobs after they are married to meet an obligation to society to use their training (32) was false. Among women a zero relationship was found between the way they feel and the way they think they should feel. For the men this relationship was only .14. Apparently both men and women believed that one has a responsibility to society to work after training, but at least at this time they are willing to ignore this responsibility.

Three items were concerned with the fulfillment of abilities and special aptitudes: women hold jobs after they are married because housework provides inadequate opportunity for the expression of intellectual interests (29); women hold jobs after they are married because staying at home does not allow sufficient challenge of talents (art, music, writing, etc.) (49); and, women hold jobs after they are married because they owe it to themselves to make use of their abilities (40). To all of these, the modal response was false, and on the first two, the women, even more than the men, believed this is the way they should feel. This was not true for item 40. Fifty-two per cent of the women responded false to this item, but there was no relationship, phi = .05, of these responses to the way they think they should feel. If they have learned that they should make use of their abilities, they apparently wished to ignore this and elected not to work in spite of this teaching, learning, or internalization of cultural values.

The majority of these college freshmen women were not concerned about fulfilling their abilities, but were concerned about satisfying their interests. Apparently this was more acceptable. Women hold jobs after they are married to enjoy working in their field of specialization (28) was accepted by 54 per cent of the men and 73 per cent of the women and they believed this is the way they should feel. The majority of men responded "false" and the majority of women "true" to women hold jobs after they are married to provide an opportunity to work with others who have similar interests (27). But, there was no relationship among men to the way they do feel and the way they think they should feel, and for women the relationship was not strong. A somewhat similar pattern of responses existed for women hold jobs after they are married because they want to try out what they have been specifically trained for (24).

The traditional point of view and the belief that women will find fulfillment of their lives through marriage is exemplified in women hold jobs after they are married so they can have a life of their own (42). Seventy-eight per cent of the men and eighty-five per cent of the women said false, and there was a strong relationship in this to the way they believe they should feel, but the relationship between their own response and those attributed to others was not as strong. In general, this total block of items reinforces the belief that most entering students were traditionally oriented. They believed that women do not need to work to fulfill their aptitudes and special talents, that they should not work so they can have a life of their own, and that they should not work to earn extra money to spend on themselves (33). They did agree, but not overwhelmingly so, that they might work to satisfy their interests. In other words, the men believed women should be selfless and women agreed they should be too.

What reasons were acceptable to these students for married women's working? Those of a nurturant quality were. Three items, (35, 23, and 39) illustrated this. Women hold jobs after they are married so their husbands can complete their education (35) was accepted by 63 per cent of both men and women. Seventy-six per cent of men and seventy-seven per cent of the women believed women hold jobs after they are married to meet financial responsibilities (23). Students showed little ambivalence about this item. In general, these students believed as they think they should and they believed others, in general, think as they do. Working so as to buy more things for the home and family (39) was accepted by 61 per cent of the men and 68 per cent of the women. The correlational results raised a question as to the acceptance of this motivation. The relationship between students' own acceptance of this reason and their belief about its acceptance of most women was higher than that between their own beliefs and those they think they should hold. Students rejected the desire to own things, but they acknowledged they have the desire. Working to provide children with special training such as music lessons (38) was not as important or acceptable to these students, since the modal response for men was false, 56 per cent, and that for women was true, 49 per cent. The phi coefficients for both comparisons were low, although significant.

Except for the responses of the men on the latter item, on all four of these items the modal response was true. To these entering freshmen, entering a large midwestern university and representing all strata of our society, the acceptable role for a married woman was to serve others, to work to put her husband through school, to pay bills, to buy things for the family. The majority rejected having married women work because they owe it to themselves to make use of their abilities or because the home provides inadequate opportunity for the expression of intellectual interests.

Were husbands also cast in the traditional role? Although the modal response to men are responsible for the financial care of their families (57) for both sexes was true, men responded true more often than did women, 68 per cent as compared to 52 per cent. The men believed this is what they should believe, phi = .47, more so than the women, phi = .13. These students did not believe that wives would make their husbands feel less of a man if they work (56). These students also had a strong conviction that women should not work to prove they are equal to men in ability (43). They had no desire to compete. Seventy-six per cent of the men and eighty-eight per cent of the women responded false to women hold jobs after they are married to prove they are equal to men in ability (43). The relationship of their own responses to what they believe they should be was much greater than the relationship of their own responses to what they believe most women believe. This is an example of students seeing others as being more accepting of reasons for working than they are.

In summary, the results indicated that entering college freshmen in a large midwestern university most frequently accepted the traditional-nurturant role for women. The more the item was related to this traditional role, the more the students saw it as a belief they should accept. They also believed the husband is responsible for the financial support of the family, again a traditional role, although women were less accepting of this belief than were men.

If the relationship between the students' own responses and those they believe most women would make are examined, in all but one of the correlations for men (24) there was a significant relationship, and in all but two for women (24 and 33). On several items (49, 42, and 43) this relationship was smaller than that between their own reasons and what they should be. This can lead to a number of interpretations. It may have reflected a hostility toward others in that they see others as willing to accept less desirable motives for married women's working than they would accept. It may have denoted a need to hold themselves apart from others and to deny their frailities and their essential humanism.

Was there any evidence of trends indicating a breaking away from cultural values? In most instances there was a strong relationship between the reasons the students accept and those they think they should accept. Two items were of interest, women hold jobs after they are married to meet an obligation to society to use their training (32), and women hold jobs after they are married because they owe it to themselves to make use of their abilities (40). The modal response to both these items by both sexes was false. For the men, how they feel and how they say they should feel were significantly related. This was not true for the women. If cultural values indicate that women should work after marriage to fulfill their abilities and training, these women apparently preferred not to.

Women believed more frequently than did the men that it is acceptable for women to work in order to try out their training and work with others who have similar interests.

Little evidence suggested a cultural change. The majority of these women believed their place is in the home. They seemed to want it that way and agreed to venture out only when they can earn money to increase the comfort and well being of their families.

This has been largely a discussion of the modal response. Many college women and men have attitudes that are not traditional. These women may seek fulfillment not only of their need to marry, but also of their need to fulfill their academic capacities and their vocational, intellectual, and creative interests.

Summary

The purpose of this research was to examine the attitudes of entering University freshmen toward the employment of married women. More specifically, the concern was with the attitudes toward equalitarian-self-fulfillment or traditional-nurturant roles in marriage as revealed by attitudes toward reasons for the employment of married women. The reasons a woman accepts for holding a job after marriage and the reasons a man accepts for his wife's holding a job after marriage help define the roles they hope to play in marriage. Sex difference and independence of attitudes from classification by marital and dating status, college of enrollment, and socio-economic status were tested by chi-square technique. Students also responded to these items as they believed most women would respond and as they believed they should respond. In addition, characteristics of the entering freshmen were studied and also preferences for time of marriage and employment after marriage.

A questionnaire was administered to 4283 freshmen entering the University of Minnesota in the fall quarter, 1959. Students were asked for their sex, age, religious affiliation, and parental education and occupation. Forty-four questions were designed to obtain data about the personal beliefs mentioned above.

Findings

1. These freshmen typically were 19 years of age or younger, dating but did not go steady, came of largely urban background, had fathers who for the most part had completed high school but one-third of whom had some college, and had mothers who generally had completed high school but roughly one-fourth of whom had some college. Half of the fathers were employed in professional, managerial, and sales occupations, 39 per cent in skilled trades, farm, service, and clerical occupations, and about nine per cent in semi-skilled and unskilled occupations. A majority of the mothers were not employed.

2. Nearly one-half of the men had not given much thought to when they would like to be married, but about one-fourth preferred, if they were to marry a college girl, to be married a year or two after graduation from college. Slightly over half of the women preferred a similar time for marriage, a significant difference.

3. Nearly one half of these freshmen indicated that they had no exact plan in mind about the wife's employment after marriage. Over one-fifth of the men did not want their wives to work full-time, while only six per cent of the women did not want to work full-time. Again men and women differed significantly as to preference for various degrees of employment, part-time or full-time.

4. Both men and women were more accepting of those reasons for the employment of married women which reveal preferences for traditional-nurturant rather than equalitarian-self-fulfilling roles in marriage.

The men were seen in the traditional role of the breadwinner in the family and the women in that of homemaking and caring for children.

If women hold jobs after marriage, it should be to implement their nurturant and feminine roles. Helping to pay bills, buying things for the home, and helping her husband through school were seen as acceptable reasons for working.

Working for fulfillment of interests and abilities, or the more liberal or equalitarian view, was not as acceptable.

Equalitarian attitudes were expressed toward decision making and sharing of responsibilities in the care of the house and children if the wife works.

Responses varied with the classification of these students by college of enrollment, dating and marital status, and socio-economic status. Differences related to college of enrollment might have been due to variance in role concept of women because the college in which a woman enrolled may reflect her commitment to a career. However, the woman in liberal arts might also desire an equalitarian-self-fulfilling role but would find satisfaction for this without seeking a job. These conflicting interpretations prevent any definite conclusions.

Responses varied when students were classified according to dating and marital status. It was hypothesized that the differences might be due to social-sexual development. Socio-economic differences appeared on those items concerned with practical and economic reasons for women working.

Most believed what they thought they should and to a lesser degree saw most women as having beliefs like theirs. They generally saw the traditional role for women as the accepted cultural value. Many, par-

ticularly among the women, expressed a willingness to depart from the expected cultural role in their desire to fulfill their abilities, interests, and training through work.

Conclusions

At the very beginning of their college education, fresh out of the protected years of high school, freshmen men and women seemingly have not given much thought to the problems raised in this study. The questions asked of them were perhaps not as real to them at this point in their lives as they might be later. For this reason alone, it would be interesting to measure changes in their attitudes which occur throughout their college careers. Even more important would be a measure of change in attitudes ten or fifteen years after college graduation.

As the students have projected themselves into the future, it was clear that they, as students at a midwestern state university, coming from a population which is largely urban, were still steeped in traditional thinking. From a study of these attitudes, it appeared unlikely that the majority of young college women were interested in training for careers. If they work, and it appears they would prefer not to, they prefer to work to implement their traditional-nurturant role. Counselors, working with young women, should expect such attitudes. If the contributions of bright and able women are important, efforts to change these attitudes among both men and women are the first step, but changing attitudes is always difficult. Are there other alternatives?

Women's lives today break into two segments. They marry and have their children early, and generally by the time they are in their middle thirties they have fulfilled much of their responsibility in their homes. Statistics show that large numbers are returning to the labor market at this age. Increasingly, educators are recommending that the education of women be adapted to the realities of their lives. During their early years, just prior to their marriages, they might assimilate the cultural heritage of our society in their college training. Training in specific skills, for those who wish to seek employment later, might be secured when they are ready for employment. Findings in this study indicate that some such plan would meet the needs of the majority of the students studied here.

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EXPECTANCY TABLES FOR UNIVERSITY OF MINNESOTA COLLEGES AND INSTITUTES BASED ON ACT REPORTS

by

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The tables in this report show the chances in 100 that a student has of obtaining a First Year Grade Point Average of C or higher and B or higher in each of several University of Minnesota colleges.

Standard scores from the American College Testing Program (ACT) and four high school grades which appear on the ACT report are used jointly as predictor variables.

CONTENTS

Introduction

When a high school student makes application to take the tests of the American College Testing Program (ACT) he reports the last two grades earned before grade 12 in English, Mathematics, Social Studies, and Natural Science. When he has taken the tests and they have been scored, these grades and the standard scores from the tests are reported to his high school on a label:

NAME OF STUDENT	ENG.	MATH	SOC. S.	N. SCI.	ENG.	MATH	SOC. S.	N. SCI.	ENG.	MATH	SOC. STUD.	NAT. SCI.	COMP.
	HIGH SCHOOL GRADES								STANDARD SCORES				

ACT THE AMERICAN COLLEGE TESTING PROGRAM PRESSCORE ®

This is the label suggested for the student or his parents. The first set of grades is the last grades earned in each of the four areas prior to entering twelfth grade, the second set is those earned just before the first set, and the "Standard Scores" his scores on the tests of the ACT Battery.

The tables on the next few pages show the chances in 100 of a student making a B or higher and C or higher freshman average in the various divisions of the University of Minnesota based on the last semester grade earned in English, Mathematics, Social Studies, and Natural Science by the end of his junior year, (first set of reported high school grades on the label) and the standard scores for the four ACT sub-tests.

Expectancy tables for first year Grade Point Average (GPA) based on ACT reports have been developed separately for nine University groups; males in the College of Liberal Arts, females in the College of Liberal Arts, males in the General College, females in the General College, males in the Institute of Technology, males and females in the College of Agriculture, Forestry and Home Economics, males and females on the Morris campus, males on the Duluth campus and females on the Duluth campus. Separate tables for obtaining the appropriate "Prediction Index" and expectancies are provided for each of these groups.

These tables provide information about the grade-getting success of students with various combinations of high school grades and ACT scores. The high school grades and ACT scores from the ACT report for a high school senior can be used to enter the tables and find the various levels of freshman grades earned by people with a similar Prediction Index. Even a cursory examination of any one of the tables makes it obvious that all students entering a division of the University with the same Prediction Index do not earn the same freshman grade point average. Students should be aware of this fact.

The counselor must take the responsibility for seeing that a student recognizes the meaning and the limitations of the expectancies provided by these tables prior to using them in educational decision making. The student should understand that the tables simply provide a convenient summary of the freshman averages earned by people similar to him on these measures. He must fully appreciate the fact that the tables do not show what his freshman grade average will be if he enters the unit of the University under consideration and that they do not show which unit he should enter. Some students have the mistaken idea that they should only consider entering the college where they have the highest probability of earning a C or higher average. This approach can lead to an unsatisfactory

and unsuccessful venture into college work. Only when the expectancies are taken for the comparisons they provide and are used in joint consideration with a student's interests, aspirations, and other information relevant to college selection can they be useful to him in making educational decisions.

Use of the Tables

To provide useful and meaningful information for students considering application to one of the units of the University, every one of the following steps must be completed accurately:

1. The tables for the Prediction Index and expectancies used must be carefully identified as appropriate for the sex of the student and the University unit under consideration.

2. The four digits corresponding to the first set of high school grades (left most on the label) must be located in Table a on the left of the page. These are the grades reported by the student on his ACT application as the last semester grades earned in these four subject areas prior to entering twelfth grade.

3. The four digits corresponding to the four ACT sub-scores must be found in Table b on the left side of the page (the fifth ACT Standard Score under "COMP" is the composite score and is not used in these calculations).

4. The eight digits obtained in steps 2 and 3 must be added to obtain the Prediction Index.

5. The expectancies corresponding to the Prediction Index can then be read from Table c on the right of the page.

An example illustrating these steps appears with each set of tables. Here we will consider just two examples with the intent that these examples and those that appear with the tables will be carefully studied prior to any attempt to use the expectancies.

Examples

Example A: The ACT report for Bill was:

ENG.	MATH	SOC. S.	N. SCI.	ENG.	MATH	SOC. S.	N. SCI.	ENG.	MATH	SOC. STUD.	NAT. SCI.	COMP.
B	B	A	B	A	C	B	C	31	25	32	28	29
HIGH SCHOOL GRADES								STANDARD SCORES				

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Bill was considering application to either CLA or IT. To help Bill use his ACT report to estimate his probable success in CLA and IT, the counselor turned first to the tables for "College of Liberal Arts--Males." From Table 1a he found that the contributions of Bill's grades to the Prediction Index were

8 for his B in English
3 for his B in Mathematics
7 for his A in Social Studies
and 3 for his B in Natural Science

From Table 1b the counselor found that the contributions of his ACT scores were

11 for his standard score of 31 on the English test
4 for his standard score of 25 on the Mathematics test
11 for his standard score of 32 on the Social Studies test
and 5 for his standard score of 28 on the Natural Science test.

Bill's Prediction Index for CLA was

$$(8 + 3 + 7 + 3) + (11 + 4 + 11 + 5) = 52$$

Entering Table 1c with an Index of 52 the counselor found that Bill's chances of earning a C or higher freshman average in CLA were 79 out of 100 and of getting a B or higher average 21 out of 100.

The counselor then turned to the page with the tables for "Institute of Technology". From Table 5a the contributions of Bill's grades to the Prediction Index for IT were found to be

6 for his B in English
5 for his B in Mathematics
6 for his A in Social Studies
and 7 for his B in Natural Science

From Table 5b the IT Prediction Index contribution corresponding to his ACT scores were

6 for his standard score of 31 on the English test
9 for his standard score of 25 on the Mathematics test
7 for his standard score of 32 on the Social Studies test
and 8 for his standard score of 28 on the Natural Science test.

Bill's Prediction Index for IT was

$$(6 + 5 + 6 + 7) + (6 + 9 + 7 + 8) = 54$$

Entering Table 5c with Bill's IT Prediction Index of 54 the counselor found that expectancies were given for 53 and 55 but not for 54. He noted that for a C or higher average the values were 62 for an Index of 53 and 68 for an Index of 55 while for a B or higher average they were 11 and 14 respectively. He concluded that based on the ACT report Bill's chances were about 65 out of 100 of earning a C or higher average in IT and somewhat better than 10 out of 100 of earning an average of B or higher. He told Bill that based on these tables the chances were about one out of three that he would have less than a C average at the end of one year in IT.

The counselor then explained to Bill that it appeared that people with ability similar to that reflected in his ACT report tended to earn slightly higher grades in CLA than in IT. He added that this did not mean that CLA was necessarily the better choice and went on to look at other factors which were relevant to the decision Bill was trying to make.

Example B: The ACT report for Helen was

ENG.	MATH	SOC. S.	N. SCI.	ENG.	MATH	SOC. S.	N. SCI.	ENG.	MATH	SOC. STUD.	NAT. SCI.	COMP.
B	C	C	C	C	C	B	B	20	16	19	17	18
HIGH SCHOOL GRADES								STANDARD SCORES				

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Helen wanted to go to the University but due to the difficulty she had with some of her high school courses she wanted to consider as much relevant information as she could before deciding whether she wanted her application to be for admission to CLA or to GC. To help her in this consideration the counselor used her ACT report.

Turning to Table 2a for the College of Liberal Arts--Females, the first set of grades on her ACT report corresponded to the following values

English	(B)	- 7
Mathematics	(C)	- 3
Social Studies	(C)	- 5
Natural Science	(C)	- 2

Her ACT Standard Scores corresponded on Table 2b to values of

English	(20)	- 8
Mathematics	(16)	- 3
Social Studies	(19)	- 6
Natural Science	(17)	- 4

Thus her CLA Prediction Index was

$$(7 + 3 + 5 + 2) + (8 + 3 + 6 + 4) = 38$$

Entering Table 2c with this Index of 38 the counselor found her chances of earning a C or higher average in CLA to be 29 out of 100 and of getting a B or higher average in CLA only one out of 100.

The counselor next consulted the ACT Expectancy Tables for "General College--Females". On Table 4a her grades corresponded to values of 4 for her B in English, 1 for her C in Mathematics, 5 for her C in Social Studies and 2 for her C in Natural Science. From Table 4b her ACT Standard scores corresponded to 12 for her 20 on the English test, -1 for her 16 on the Mathematics test, 3 for her 19 on the Social Studies test and 2 for her 17 on the Natural Science test.

Thus her GC Prediction Index was

$$(4 + 1 + 5 + 2) + (12 - 1 + 3 + 2) = 28$$

A Prediction Index of 28 of Table 4c showed her chances of a C or higher average in GC to be 65 out of 100 and of a B or higher average 7 out of 100.

Helen said she had been thinking of applying to the General College but she did not think she fully understood the program available and the possibilities of later transfer to CLA. Turning to the catalogues for these colleges and additional test and non-test information the counselor and Helen went on seeking as complete a picture as they could make of the congruency of what Helen wanted from college, what she might expect to be able to do and the differences in the colleges she was considering.

These expectancy tables, like all others, are not based on measures which tap all of the factors which affect success in college. Anyone using these tables with high school students should be sure that each student fully understands this basic consideration and uses the expectancy figures along with other information in making decisions about college.

University of Minnesota
Expectancy Tables for
First Year GPA
Based On
ACT Prediction Index

To obtain prediction Index:
Add the eight digits which correspond, respectively, to the student's four ACT standard scores and his four grades.

Table 1a

H.S. Grade from ACT Report Form (First set)	Contribution to Prediction Index			
	Eng.	Math.	S.S.	N.S.
A = 4	10	4	7	4
B = 3	8	3	6	3
C = 2	5	2	4	2
D = 1	3	1	2	1

Table 1b

ACT Standard Score	Contribution to Prediction Index			
	Eng.	Math.	S.S.	N.S.
36	12	5	13	6
35	12	5	12	6
34	12	5	12	6
33	11	5	11	6
32	11	5	11	6
31	11	5	11	5
30	10	5	10	5
29	10	4	10	5
28	10	4	10	5
27	9	4	9	5
26	9	4	9	4
25	9	4	9	4
24	8	4	8	4
23	8	3	8	4
22	8	3	8	4
21	7	3	7	4
20	7	3	7	3
19	7	3	7	3
18	6	3	6	3
17	6	3	6	3
16	6	2	6	3
15	5	2	5	3
14	5	2	5	2
13	4	2	5	2
12	4	2	4	2
11	4	2	4	2
10	3	2	3	2
9	3	1	3	2
8	3	1	3	1
7	2	1	2	1
6	2	1	2	1
5	2	1	2	1

Table 1c

Prediction Index	Chances in 100 of a freshman obtaining an average grade of	
	C or higher	B or higher
74	99	83
72	99	79
70	99	74
68	98	69
66	97	63
64	96	56
62	95	50
60	93	44
58	90	37
56	87	31
54	83	26
52	79	21
50	74	17
48	69	13
46	63	10
44	56	7
42	50	5
40	44	4
38	37	3
36	31	2
34	26	1
32	21	1
30	17	1
28	13	--
26	10	--
24	7	--
22	5	--

Example:
A boy has the following ACT report:

ENG.	MATH	SOC. S.	N. SCI.	ENG.	MATH	SOC. S.	N. SCI.	ENG.	MATH	SOC. STUD.	NAT. SCI.	COMP.
A	A	C	A	B	A	C	B	29	30	28	29	29
HIGH SCHOOL GRADES								STANDARD SCORES				

AN COLLEGE TESTING PROGRAM PRESSCORE®

His Prediction Index for CLA is:
(10 + 4 + 4 + 4) + (10 + 5 + 10 + 5) = 52

His chances of a CLA freshman average of C or higher are 79 out of 100 and of B or higher 21 out of 100.

University of Minnesota
Expectancy Tables for First Year GPA Based On ACT Prediction Index

To obtain prediction Index:
Add the eight digits which correspond, respectively, to the student's four ACT standard scores and his four grades.

Table 2a

H.S. Grade from ACT Report Form (First set)	Contribution to Prediction Index			
	Eng.	Math.	S.S.	N.S.
A = 4	9	6	9	4
B = 3	7	4	7	3
C = 2	4	3	5	2
D = 1	2	1	2	1

Table 2b

ACT Standard Score	Contribution to Prediction Index			
	Eng.	Math.	S.S.	N.S
36	15	7	12	8
35	14	6	12	8
34	14	6	11	8
33	14	6	11	8
32	13	6	11	7
31	13	6	10	7
30	12	5	10	7
29	12	5	10	7
28	12	5	9	6
27	11	5	9	6
26	11	5	9	6
25	10	5	8	6
24	10	4	8	6
23	9	4	8	5
22	9	4	7	5
21	9	4	7	5
20	8	4	7	5
19	8	3	6	4
18	7	3	6	4
17	7	3	6	4
16	7	3	5	4
15	6	3	5	3
14	6	3	5	3
13	5	2	4	3
12	5	2	4	3
11	5	2	4	3
10	4	2	3	2
9	4	2	3	2
8	3	1	3	2
7	3	1	2	2
6	2	1	2	1
5	2	1	2	1

Table 2c

Prediction Index	Chances in 100 of a freshman obtaining an average grade of	
	C or higher	B or higher
76	99	87
74	99	82
72	99	77
70	99	71
68	99	65
66	98	57
64	97	50
62	95	43
60	93	35
58	90	29
56	87	23
54	82	18
52	77	13
50	71	10
48	65	7
46	57	5
44	50	3
42	43	2
40	35	1
38	29	1
36	23	--
34	18	--
32	13	--
30	10	--
28	7	--
26	5	--
24	3	--

Example:
A girl has the following ACT report:

ENG.	MATH	SOC. S.	N. SCI.	ENG.	MATH	SOC. S.	N. SCI.	ENG.	MATH	SOC. STUD.	NAT. SCI.	COMP.
B	C	A	B	A	B	B	B	35	25	30	30	30
HIGH SCHOOL GRADES								STANDARD SCORES				

AN COLLEGE TESTING PROGRAM PRESSCORE ®

Her Prediction Index for CLA is:
(7 + 3 + 9 + 3) + (14 + 5 + 10 + 7) = 58

Her chances of a CLA freshman average of C or higher are 90 out of 100, and of B or higher 29 out of 100.

University of Minnesota Expectancy Tables for First Year GPA Based On ACT Prediction Index

To obtain prediction Index:
Add the eight digits which correspond, respectively, to the student's four ACT standard scores and his four grades.

Table 3a

H.S. Grade from ACT Report Form (First set)	Contribution to Prediction Index			
	Eng.	Math.	S.S.	N.S.
A = 4	0	4	8	2
B = 3	0	3	6	2
C = 2	0	2	4	1
D = 1	0	1	2	1

Table 3b

ACT Standard Score	Contribution to Prediction Index			
	Eng.	Math.	S.S.	N.S.
36	1	9	10	10
35	1	9	9	9
34	1	8	9	9
33	1	8	9	9
32	1	8	9	8
31	--	8	8	8
30	--	7	8	8
29	--	7	8	8
28	--	7	8	7
27	--	7	7	7
26	--	6	7	7
25	--	6	7	7
24	--	6	6	6
23	--	6	6	6
22	--	5	6	6
21	--	5	6	6
20	--	5	5	5
19	--	5	5	5
18	--	4	5	5
17	--	4	5	5
16	--	4	4	4
15	--	4	4	4
14	--	3	4	4
13	--	3	3	3
12	--	3	3	3
11	--	3	3	3
10	--	2	3	3
9	--	2	2	2
8	--	2	2	2
7	--	2	2	2
6	--	1	2	2
5	--	1	1	1

Table 3c

Prediction Index	Chances in 100 of a freshman obtaining an average grade of	
	C or higher	B or higher
54	99	84
52	99	79
50	99	74
48	98	69
46	98	63
44	97	57
42	95	50
40	93	43
38	91	37
36	88	31
34	84	26
32	79	21
30	74	16
28	69	12
26	63	9
24	57	7
22	50	5
20	43	3
18	37	2
16	31	2
14	26	1
12	21	1
10	16	--
8	12	--
6	9	--
4	7	--
2	5	--

Example:
A boy has the following ACT report:

ENG.	MATH	SOC. S	N. SCI.	ENG.	MATH	SOC. S	N. SCI.	ENG.	MATH	SOC STUD.	NAT. SCI.	COMP.
B	C	B	C	B	C	C	C	26	20	24	21	23
HIGH SCHOOL GRADES								STANDARD SCORES				

AN COLLEGE TESTING PROGRAM PRESSCORE®

His Prediction Index for GC is:
(0 + 2 + 6 + 1) + (0 + 5 + 6 + 6) = 26

His chances of a GC freshman average of C or higher are 63 out of 100 and of B or higher, 9 out of 100.

University of Minnesota
Expectancy Tables for
First Year GPA
Based On
ACT Prediction Index

To obtain prediction Index:
Add the eight digits which correspond, respectively, to the student's four ACT standard scores and his four grades.

Table 4a

H.S. Grade from ACT Report Form (First set)	Contribution to Prediction Index			
	Eng.	Math.	S.S.	N.S.
A = 4	6	1	10	4
B = 3	4	1	7	3
C = 2	3	1	5	2
D = 1	1	0	2	1

Table 4b

ACT Standard Score	Contribution to Prediction Index			
	Eng.	Math.	S.S.	N.S.
36	21	-1	6	4
35	20	-1	6	4
34	20	-1	6	4
33	19	-1	6	4
32	19	-1	6	4
31	18	-1	5	3
30	18	-1	5	3
29	17	-1	5	3
28	16	-1	5	3
27	16	-1	5	3
26	15	-1	5	3
25	15	-1	4	3
24	14	-1	4	3
23	13	-1	4	3
22	13	-1	4	2
21	12	-1	4	2
20	12	-1	4	2
19	11	-1	3	2
18	11	-1	3	2
17	10	-1	3	2
16	9	-1	3	2
15	9	-1	3	2
14	8	-1	2	2
13	8	--	2	1
12	7	--	2	1
11	6	--	2	1
10	6	--	2	1
9	5	--	2	1
8	5	--	1	1
7	4	--	1	1
6	4	--	1	1
5	3	--	1	1

Table 4c

Prediction Index	Chances in 100 of a freshman obtaining an average grade of	
	C or higher	B or higher
56	99	87
54	99	83
52	99	77
50	99	71
48	99	65
46	98	57
44	97	50
42	96	43
40	93	35
38	91	29
36	87	23
34	83	17
32	77	13
30	71	9
28	65	7
26	57	4
24	50	3
22	43	2
20	35	1
18	29	1
16	23	--
14	17	--
12	13	--
10	9	--
8	7	--
6	4	--
4	3	--

Example:
A girl has the following ACT report:

ENG.	MATH	SOC. S.	N. SCI.	ENG.	MATH	SOC. S.	N. SCI.	ENG.	MATH	SOC. STUD.	NAT. SCI.	COMP
B	A	B	B	C	B	B	B	25	31	27	22	26
HIGH SCHOOL GRADES								STANDARD SCORES				

AN COLLEGE TESTING PROGRAM PRESSCORE®

Her Prediction Index for GC is:
(4 + 1 + 7 + 3) + (15 - 1 + 5 + 2) = 36

Her chances of a GC freshman average of C or higher are 87 out of 100, and of B or higher, 23 out of 100.

University of Minnesota
Expectancy Tables for First Year GPA Based On ACT Prediction Index

To obtain prediction Index:
Add the eight digits which correspond, respectively, to the student's four ACT standard scores and his four grades.

Table 5a

H.S. Grade from ACT Report Form (First set)	Contribution to Prediction Index			
	Eng.	Math.	S.S.	N.S.
A = 4	7	6	6	9
B = 3	6	5	5	7
C = 2	4	3	3	4
D = 1	2	2	2	2

Table 5b

ACT Standard Score	Contribution to Prediction Index			
	Eng.	Math.	S.S.	N.S.
36	8	13	8	10
35	7	13	7	10
34	7	12	7	10
33	7	12	7	9
32	7	12	7	9
31	6	11	7	9
30	6	11	6	8
29	6	11	6	8
28	6	10	6	8
27	6	10	6	8
26	5	9	5	7
25	5	9	5	7
24	5	9	5	7
23	5	8	5	6
22	5	8	5	6
21	4	8	4	6
20	4	7	4	6
19	4	7	4	5
18	4	7	4	5
17	4	6	4	5
16	3	6	3	4
15	3	5	3	4
14	3	5	3	4
13	3	5	3	4
12	3	4	3	3
11	2	4	2	3
10	2	4	2	3
9	2	3	2	3
8	2	3	2	2
7	1	3	1	2
6	1	2	1	2
5	1	2	1	1

Table 5c

Prediction Index	Chances in 100 of a freshman obtaining an average grade of	
	C or higher	B or higher
81	99	82
79	99	78
77	98	73
75	98	68
73	97	62
71	96	56
69	94	50
67	92	44
65	89	38
63	86	32
61	82	27
59	78	22
57	73	18
55	68	14
53	62	11
51	56	8
49	50	6
47	44	4
45	38	3
43	32	2
41	27	2
39	22	1
37	18	1
35	14	--
33	11	--
31	8	--
29	6	--

Example:
A boy has the following ACT report:

ENG.	MATH	SOC. S.	N. SCI.	ENG.	MATH	SOC. S.	N. SCI.	ENG.	MATH	SOC. STUD.	NAT. SCI.	COMP.
C	A	B	A	B	A	B	B	19	34	28	32	28
HIGH SCHOOL GRADES								STANDARD SCORES				

AN COLLEGE TESTING PROGRAM PRESSCORE®

His Prediction Index for IT is:
(4 + 6 + 5 + 9) + (4 + 12 + 6 +9) = 55

His chances of an IT freshman average of C or higher are 68 out of 100, and of B or higher, 14 out of 100.

University of Minnesota Expectancy Tables for First Year GPA Based On ACT Prediction Index

To obtain prediction Index:
Add the eight digits which correspond, respectively, to the student's four ACT standard scores and his four grades.

Table 6a

H.S. Grade from ACT Report Form (First set)	Contribution to Prediction Index			
	Eng.	Math.	S.S.	N.S.
A = 4	8	4	8	7
B = 3	6	3	6	5
C = 2	4	2	4	4
D = 1	2	1	2	2

Table 6b

ACT Standard Score	Contribution to Prediction Index			
	Eng.	Math.	S.S.	N.S.
36	15	9	6	5
35	15	9	6	5
34	14	8	5	5
33	14	8	5	5
32	13	8	5	5
31	13	8	5	4
30	13	7	5	4
29	12	7	5	4
28	12	7	4	4
27	11	7	4	4
26	11	6	4	4
25	10	6	4	4
24	10	6	4	3
23	10	6	4	3
22	9	5	4	3
21	9	5	3	3
20	8	5	3	3
19	8	5	3	3
18	8	4	3	3
17	7	4	3	2
16	7	4	3	2
15	6	4	2	2
14	6	3	2	2
13	5	3	2	2
11	5	3	2	2
12	5	3	2	2
10	4	2	2	1
9	4	2	1	1
8	3	2	1	1
7	3	2	1	1
6	3	1	1	1
5	2	1	1	1

Table 6c

Prediction Index	Chances in 100 of a freshman obtaining an average grade of	
	C or higher	B or higher
69	99	86
67	99	82
65	99	76
63	99	71
61	98	64
59	98	57
57	97	50
55	95	43
53	93	36
51	90	29
49	86	24
47	82	18
45	76	14
43	71	10
41	64	7
39	57	5
37	50	3
35	43	2
33	36	2
31	29	1
29	24	1
27	18	--
25	14	--
23	10	--
21	7	--
19	5	--
17	3	--

Example:
A boy has the following ACT report:

ENG.	MATH	SOC. S.	N. SCI.	ENG.	MATH	SOC. S.	N. SCI.	ENG.	MATH	SOC. STUD.	NAT. SCI.	COMP.
C	B	C	A	D	C	C	A	19	25	20	31	24
HIGH SCHOOL GRADES								STANDARD SCORES				

AN COLLEGE TESTING PROGRAM PRESSCORE®

His Prediction Index for Ag.For.H.E. is:
(4 + 3 + 4 + 7) + (8 + 6 + 3 + 4) = 39

His chances of an Ag.For.H.E. average of C or higher are 57 out of 100, and of B or higher, 5 out of 100.

University of Minnesota Expectancy Tables for First Year GPA Based On ACT Prediction Index

To obtain prediction Index:
Add the eight digits which correspond, respectively, to the student's four ACT standard scores and his four grades.

Table 7a

H.S. Grade from ACT Report Form (First set)	Contribution to Prediction Index			
	Eng.	Math.	S.S.	N.S.
A = 4	5	0	12	10
B = 3	4	0	9	7
C = 2	3	0	6	5
D = 1	1	0	3	2

Table 7b

ACT Standard Score	Contribution to Prediction Index			
	Eng.	Math.	S.S.	N.S.
36	15	4	8	-1
35	15	4	8	-1
34	14	4	8	-1
33	14	4	8	-1
32	14	3	8	-1
31	13	3	7	-1
30	13	3	7	-1
29	12	3	7	-1
28	12	3	7	-1
27	11	3	6	-1
26	11	3	6	-1
25	11	3	6	-1
24	10	3	6	-1
23	10	2	6	-1
22	9	2	5	-1
21	9	2	5	-1
20	8	2	5	-1
19	8	2	4	-1
18	8	2	4	-1
17	7	2	4	-1
16	7	2	4	-1
15	6	2	4	-1
14	6	1	3	-1
13	6	1	3	-1
12	5	1	3	--
11	5	1	3	--
10	4	1	2	--
9	4	1	2	--
8	3	1	2	--
7	3	1	2	--
6	3	1	1	--
5	2	1	1	--

Table 7c

Prediction Index	Chances in 100 of a freshman obtaining an average grade of	
	C or higher	B or higher
64	99	86
62	99	81
60	99	76
58	99	70
56	98	64
54	98	57
52	96	50
50	95	43
48	92	36
46	89	30
44	86	24
42	81	19
40	76	14
38	70	11
36	64	8
34	57	5
32	50	4
30	43	2
28	36	2
26	30	1
24	24	1
22	19	--
20	14	--
18	11	--
16	8	--
14	5	--
12	4	--

Example:
A boy has the following ACT report:

ENG.	MATH	SOC. S.	N. SCI.	ENG.	MATH	SOC. S.	N. SCI.	ENG.	MATH	SOC. STUD.	NAT. SCI.	COMP.
A	C	B	B	B	B	B	C	32	19	35	22	27
HIGH SCHOOL GRADES								STANDARD SCORES				

AN COLLEGE TESTING PROGRAM PRESSCORE ®

His Prediction Index for Morris Campus is:
(5 + 0 + 9 + 7) + (14 + 2 + 8 - 1) = 44

His chances of a Morris Campus average of C or higher are 86 out of 100, and of B or higher, 24 out of 100.

University of Minnesota
Expectancy Tables for First Year GPA Based On ACT Prediction Index

To obtain prediction Index:
Add the eight digits which correspond, respectively, to the student's four ACT standard scores and his four grades.

Table 8a

H.S. Grade from ACT Report Form (First set)	Contribution to Prediction Index			
	Eng.	Math.	S.S.	N.S.
A = 4	6	2	8	3
B = 3	5	2	6	2
C = 2	3	1	4	2
D = 1	2	1	2	1

Table 8b

ACT Standard Score	Contribution to Prediction Index			
	Eng.	Math.	S.S.	N.S.
36	11	6	11	2
35	10	6	11	2
34	10	6	11	2
33	10	6	10	2
32	9	5	10	2
31	9	5	10	2
30	9	5	9	2
29	9	5	9	2
28	8	5	9	1
27	8	5	8	1
26	8	4	8	1
25	7	4	8	1
24	7	4	8	1
23	7	4	7	1
22	6	4	7	1
21	6	4	7	1
20	6	3	6	1
19	6	3	6	1
18	5	3	6	1
17	5	3	5	1
16	5	3	5	1
15	4	3	5	1
14	4	2	4	1
13	4	2	4	1
11	3	2	3	1
12	4	2	4	1
10	3	2	3	1
9	3	2	3	--
8	2	1	3	--
7	2	1	2	--
6	2	1	2	--
5	1	1	2	--

Table 8c

Prediction Index	Chances in 100 of a freshman obtaining an average grade of	
	C or higher	B or higher
62	99	87
60	99	83
58	99	78
56	99	72
54	99	65
52	98	58
50	97	50
48	96	42
46	94	35
44	91	28
42	87	22
40	83	17
38	78	13
36	72	9
34	65	6
32	58	4
30	50	3
28	42	2
26	35	1
24	28	1
22	22	--
20	17	--
18	13	--
16	9	--
14	6	--
12	4	--
10	3	--

Example:
A boy has the following ACT report:

ENG.	MATH	SOC. S.	N. SCI.	ENG.	MATH	SOC. S.	N. SCI.	ENG.	MATH	SOC. STUD	NAT. SCI.	COMP.
C	C	D	C	B	D	D	D	18	20	16	18	18
HIGH SCHOOL GRADES								STANDARD SCORES				

AN COLLEGE TESTING PROGRAM PRESSCORE ®

His Prediction Index for Duluth Campus is:
(3 + 1 + 2 + 2) + (5 + 3 + 5 + 1) = 22

His chances of a Duluth Campus average of C or higher are 22 out of 100, and of B or higher, something less than one out of 100.

University of Minnesota
Expectancy Tables for
First Year GPA
Based On
ACT Prediction Index

To obtain prediction Index:
Add the eight digits which correspond, respectively, to the student's four ACT standard scores and his four grades.

Table 9a

H.S. Grade from ACT Report Form (First set)	Contribution to Prediction Index			
	Eng.	Math.	S.S.	N.S.
A = 4	5	8	6	8
B = 3	4	6	5	6
C = 2	3	4	3	4
D = 1	1	2	2	2

Table 9b

ACT Standard Score	Contribution to Prediction Index			
	Eng.	Math.	S.S.	N.S.
36	23	2	10	8
35	22	2	10	8
34	22	2	9	8
33	21	2	9	7
32	21	2	9	7
31	20	1	9	7
30	19	1	8	7
29	19	1	8	6
28	18	1	8	6
27	17	1	8	6
26	17	1	7	6
25	16	1	7	6
24	15	1	7	5
23	15	1	6	5
22	14	1	6	5
21	13	1	6	5
20	13	1	6	4
19	12	1	5	4
18	12	1	5	4
17	11	1	5	4
16	10	1	4	4
15	10	1	4	3
14	9	1	4	3
13	8	1	4	3
11	7	1	3	2
12	8	1	3	3
10	6	--	3	2
9	6	--	3	2
8	5	--	2	2
7	4	--	2	2
6	4	--	2	1
5	3	--	1	1

Table 9c

Prediction Index	Chances in 100 of a freshman obtain an average grade of	
	C or higher	B or higher
73	99	92
71	99	88
69	99	83
67	99	76
65	99	68
63	99	59
61	99	50
59	98	41
57	97	32
55	95	24
53	92	17
51	88	12
49	83	8
47	76	5
45	68	3
43	59	2
41	50	1
39	41	1
37	32	--
35	24	--
33	17	--
31	12	--
29	8	--
27	5	--
26	3	--
25	2	--
23	1	--

Example:
A girl has the following ACT report:

ENG.	MATH	SOC. S.	N. SCI	ENG.	MATH	SOC. S.	N. SCI.	ENG.	MATH	SOC. STUD.	NAT. SCI.	COMP.
A	B	A	B	A	C	A	A	33	29	32	30	31
HIGH SCHOOL GRADES								STANDARD SCORES				

AN COLLEGE TESTING PROGRAM PRESSCORE ®

Her Prediction Index for Duluth Campus is:
(5 + 6 + 6 + 6) + (21 + 1 + 9 + 7) = 61

Her chances of a Duluth Campus average of C or higher are 99 out of 100, and of B or higher 50 out of 100.

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NORMS FOR THE IOWA TESTS OF EDUCATIONAL DEVELOPMENT, DIFFERENTIAL APTITUDE TESTS AND LORGE THORNDIKE INTELLIGENCE TESTS BASED ON GROUPS WITH SIMILAR DISTRIBUTIONS OF SCORES ON THE MINNESOTA SCHOLASTIC APTITUDE TEST

by

Jack C. Merwin and Ralph F. Berdie
Student Counseling Bureau

CONTENTS

Test norms are essential to the interpretation of test results, and the value of a set of norms is directly related to the characteristics of the group used to establish those norms. The norms for the Differential Aptitude Tests (DAT), Iowa Tests of Educational Development (ITED) and Lorge Thorndike Intelligence Tests (LTIT) presented in this report are based on more specifically defined groups of Minnesota high school students than any previous Minnesota norms for these tests.

Percentile norms now printed on the student report forms for the various tests offered through the Minnesota State-Wide High School Testing Program have been developed in various ways. The norms for the ITED were developed for Grades 9, 10, 11 and 12 separately using the scores of students from the State-Wide Program and other services in a single year. The DAT percentiles reported for 9th graders are based on 9th graders tested through the State-Wide Program in a single year. The DAT norms reported for 8th graders and 10th graders are national norms provided by the publisher. Thus, there is need for some basis of comparability of norm groups across grade levels on the same test and across tests.

Ideally, norms for the various tests offered through the State-Wide Program might be based on the administration of the Lorge Thorndike Intelligence Test to all 7th grade students in the State in one year and the administration of all tests offered at each grade level to these same students as they pass from seventh through twelfth grade. The problems connected with such an approach make it impractical. An alternative is made possible by the availability of scores from the Minnesota Scholastic Aptitude Test (MSAT) which are obtained from 99+ percent of the high school juniors in the State each year.

Procedure

Briefly stated, the procedure followed in developing these norms was to first identify groups of students who had taken the DAT, ITED, or LTIT in a single grade level through the State-Wide High School Testing Program and who as high school juniors had a distribution of MSAT scores with the same shape and mean as the MSAT distribution for all high school juniors. The DAT, ITED and LTIT scores for these groups were then used to establish the norms reported here. Male and female norms for the DAT were established separately for Grades 8, 9 and 10. Norms for the sexes combined were established for students taking the ITED in Grades 9, 10, 11 and 12 and for students taking the LTIT in Grade 8. To more fully explain the procedure used we can consider the steps followed for a single group.

In 1960-61, 6,309 9th grade students in Minnesota took the ITED through the State-Wide High School Testing Program. In 1962-63, 5,198 of these students took the MSAT through the State-Wide College Testing Program. The first step in the procedure was to make a frequency distribution of their MSAT scores. The second step was to randomly remove cases at each MSAT raw score until the frequency at each score was the same proportion of the final total group as the frequency of that score in the junior norm group was of the total junior norm

group. For example, the people in the MSAT junior norm group with a raw score of 9 constituted 0.541 percent of the MSAT junior norm group. To have the 9th grade ITED norms based on students with a similar MSAT distribution, 0.541 percent, or 19 of the 3,511 students whose ITED scores were included in the norming (.00541 x 3,511) needed to have MSAT raw scores of 9. Another example: the number of cases in the MSAT junior norm group with a raw score of 38 constituted 1.708 percent of the MSAT junior norm group. Thus, for the distribution being constructed 60 cases (.01708 x 3,511) were included to obtain the appropriate representation of cases from this raw score. For each MSAT raw score, cases were removed at random until the frequency was the same proportion of the total number, 3,511 in this example, as the frequency for that score in the junior norm distribution is of the junior norm group. For a few scores the frequency was so low that its use directly would severely limit the number of cases that could be used to develop the norms. This occurred only at the extremes of the distributions and was compensated for by additional sampling at adjacent scores.

The next step was to eliminate the ITED scores for everyone whose MSAT score was removed to construct the MSAT distribution. This left 3,511 sets of 9th grade ITED scores for people who as eleventh graders had an MSAT distribution similar in mean and shape to the State-Wide junior norms. It is these ITED scores which were then used to construct the 9th grade ITED norms in this report.

Characteristics

Each set of norms presented here provides a comparison of a student's scores from a test battery with those of a group of students tested in 1960-61 in the Minnesota State-Wide Testing Program who as juniors had MSAT scores with a distribution which matches that for all juniors in the State. For each set of norms reported, all of the tests in a battery are based on the same group of students.

It should be recognized that the time factor constant in this procedure is the administration of DAT, ITED, and LTIT in 1960-61. Thus, there is a variation in the length of time between taking these tests and taking the MSAT for the different grades since the MSAT was taken in the junior year by all of these students. The students whose ITED scores were used to establish the 12th grade norms took the MSAT eight to ten months before they took the ITED tests. On the other hand, the 9th grade males whose DAT scores were used to establish the norms took the MSAT about 2 1/3 years after they took the DAT.

The number of students whose scores could be used to establish the norms had an upper limit of the number in that group who took the particular battery in 1960-61. This was then reduced to the number who took the MSAT as juniors. The final reduction was based on the smallest relative MSAT score frequency and deletion to obtain the desired MSAT distribution. The final number of students used varied from 5,529 for Grade 10 on the ITED to 226 for Grade 10 females on the DAT. The number of students whose scores were used to develop the norms is given in the heading of each table.

In 1961-62 the DAT answer sheet used in the Program was changed from an IBM answer sheet to one which can be scored at the Measurement Research Center at Iowa City, Iowa. Research on scores obtained using the two answer sheets indicated no difference for any of the DAT tests except the Clerical Speed and Accuracy Test. Since students tested in 1960-61 used the IBM answer sheet and there was a significant change for the Clerical Test, no norms for this test are reported here.

When these new norms are compared with those which have been in use, surprisingly small differences appear in most cases. The 9th and 10th grade norms for the ITED are about the same to slightly lower for all tests. For a given standard score on any test the differences are less than six percentile points, with the exception of Test 2, General Background in the Natural Sciences. The percentile corresponding to standard scores near the middle of the range on Test 2 run 6-10 percentile points lower on these norms. A 9th grade student with a standard score of 13 on Test 2 would have a percentile rank of 44 on these norms compared to 51 on the norms now reported. For Grades 11 and 12 these ITED norms are similar to slightly (7 or less percentile points) more difficult for Tests 2 and 4, and somewhat easier for the other tests with differences of 6-12 percentile points on Tests 3, 8 and 9 for 12th grade. A 12th grade student with a standard score of 20 on Test 8 would have a percentile rank of 67 on these norms, 9 percentile points higher than would have been printed on his report form. Thus, on these tests 12th graders' scores may have percentile ranks which are 6-12 percentile points higher using these norms.

For all tests of the DAT battery these percentile norms tend to be slightly, but not significantly (less than 6 percentile points), higher for males. For females, they give percentile ranks which are 6-10 percentile points higher for some Verbal, Numerical, and Verbal plus Numerical scores. On these scales, using the norms reported here would mean a percentile rank 6-10 points higher for some students.

Like the DAT, these LTIT norms for 8th grade students run slightly higher than norms currently reported through the Program. The largest difference is 7 percentile points with the great majority of corresponding percentile equivalents from the two sets of norms differing by 5 or less.

The small differences between the norms now in use and these norms indicate that the norms now in use are based on students who, as juniors, were fairly representative of juniors across the State in general academic ability. These norms, however, are based on similarly defined norm groups for the ITED, DAT, and LTIT at each of several grade levels -- students tested in 1960-61 who had MSAT scores as juniors which were representative of MSAT scores for all juniors in the State.

Norms for the Lorge Thorndike Intelligence Tests (Level 4, Form A)
Based on Students Tested in 1960-61 Who As Juniors Had a
Distribution of Minnesota Scholastic Aptitude Test Scores
Congruent With the State-Wide Junior Norms
Males and Females - Grade 8
N = 2,320

	RAW SCORE				RAW SCORE		
Percentile	Verbal	Non-Verbal	Total	Percentile	Verbal	Non-Verbal	Total
100				50	51		
99	75-83	68-76	137-156	49		48	98
98	73-74	66-67	135-136	48			
97	72	65	133-134	47	50		97
96	71	64	132	46			
95	70		130-131	45		47	96
94	69	63	129	44	49		
93		62	128	43			95
92	68		126-127	42	48	46	
91	67	61	125	41			94
90			124	40			93
89	66	60		39	47	45	
88			123	38			92
87	65	59	122	37			91
86			121	36	46		
85	64		120	35		44	90
84		58	119	34	45		
83	63			33			89
82			118	32		43	88
81	62	57	117	31	44		87
80				30			86
79			116	29	43	42	
78	61	56	115	28			85
77				27	42		84
76			114	26		41	83
75	60	55		25			
74			113	24	41	40	82
73			112	23			81
72	59			22	40	39	80
71		54	111	21			79
70	58		110	20	39	38	78
69				19			
68		53	109	18	38		77
67	57			17		37	75-76
66			108	16	37	36	74
65	56		107	15			
64		52		14	36	35	72-73
63			106	13		34	71
62	55			12	35	33	70
61		51	105	11	34	32	69
60				10	33	31	67-68
59	54		104	9			66
58			103	8	32	30	65
57		50		7	31	29	63-64
56	53		102	6	30	28	61-62
55				5	29	26-27	59-60
54			101	4	27-28	25	56-58
53	52	49	100	3	24-26	23-24	51-55
52				2	22-23	21-22	46-50
51			99	1	-- 21	-- 20	-- 45
ZERO ORDER CORRELATION WITH MSAT					.758	.566	.727

Norms for the Differential Aptitude Test (Form A)
Based on Students Tested in 1960-61 Who As Juniors Had a
Distribution of Minnesota Scholastic Aptitude Test Scores
Congruent With the State-Wide Junior Norms
Males - Grade 8
N = 332

	RAW SCORE							RAW SCORE					
Percentile	Verb. Reas.	Num. Abil.	Abs. Reas.	Space Rel.	Mech. Reas.	V + N	Percentile	Verb. Reas.	Num. Abil.	Abs. Reas.	Space Rel.	Mech. Reas.	V + N
100							50		14		33		
99	33-40	30-35	43-48	79-89	55-59	60-69	49				32	31	27
98	32		42	78	53-54	57-59	48			26	31		
97	30-31	29	41	73-77	51-52	55-56	47	14				30	
96	29		40	72	50	54	46				30		
95		28				53	45		13		29		26
94	28	27	39	70-71	49		44			25	28	29	
93		26		69	48	52	43						
92	27		38	68		51	42				27		25
91		25		67	47	50	41	13					
90	26		37	66		49	40		12	24	25-26	28	
89	25			65			39				24		
88		24	36	64	46	48	38				23	27	24
87						46-47	37		11				
86	24			63	45		36			23	22		
85			35	61-62		45	35				21	26	23
84	23	23		60			34	12			20		
83					44	44	33		10	22	19		
82			34	59			32					25	22
81	22			58			31				18		
80		22			43	43	30			21		24	
79				57	42	42	29	11			17	23	21
78	21		33	56		41	28		9				
77					41		27			20	16		
76	20	21		54-55		40	26						20
75				53	40		25			19		22	
74			32			39	24	10	8		15		
73		20		51-52	39		23						19
72	19			50		38	22			18	14	21	
71							21		7	17	13		18
70		19	31	49	38	37	20	9		16		20	
69				48			19			15	12		
68				47			18		6	14		19	17
67	18			46	37	36	17			13	11		
66		18		45			16			12		18	16
65						35	15	8	5	11			15
64			30	44	36		14			10	10	17	14
63				43		34	13			9	9		
62	17	17		42			12			8	8		13
61						33	11	7	4	7		16	
60				41	35		10			6	7		12
59				40		32	9			5	6	15	
58		16	29				8		3	4			11
57	16			39			7	6		3	4-5	14	
56				38	34	31	6			1-2	1-3	13	10
55				37		30	5		2			11-12	
54		15	28		33		4	5	1			9-10	9
53				36		29	3	4				8	7-8
52	15			35		28	2	3				5-7	5-6
51			27	34	32		1	1-2				-- 4	-- 4
PRODUCT MOMEMT CORRELATION WITH MSAT								.78	.64	.57	.47	.36	.78

Norms for the Differential Aptitude Test (Form A)
Based on Students Tested in 1960-61 Who As Juniors Had a
Distribution of Minnesota Scholastic Aptitude Test Scores
Congruent With the State-Wide Junior Norms
Females - Grade 8
N = 288

Percentile	RAW SCORE Verb. Reas.	Num. Abil.	Abs. Reas.	Space Rel.	Mech. Reas.	V + N	Percentile	RAW SCORE Verb. Reas.	Num. Abil.	Abs. Reas.	Space Rel.	Mech. Reas.	V + N
100							50	15		26	30	20	
99	33-46	29-34	43-49	74-83	43-48	59-80	49						28
98	32	28	41-42	72-73	40-42	57-58	48		13		29		
97		27		70-71	39	56	47						
96	31	26	40	69		54-55	46			25	28		27
95	30	25		67-68	38	53	45	14				19	
94			39	65-66	37	52	44				27		
93	29				36	51	43		12	24	26		26
92		24		64	35	50	42					18	
91	28		38	61-63	34	49	41				25		25
90				60		48	40			23		17	
89	27	23		58-59	33		39	13			24		
88				57		47	38		11		23		24
87	26		37		32	46	37			22	22	16	
86	25	22	36	56			36						
85				55	31	45	35			21	21		
84	24			54		44	34						23
83				53	30		33	12			20	15	
82	23	21	35	52		43	32		10	20			
81					29		31				19		22
80				51		42	30						
79				50		41	29			19	18	14	
78	22	20	34	49	28	40	28	11					21
77						39	27				17		
76				48	27	38	26		9	18			
75	21			47			25				16		
74			33	46			24					13	
73		19				37	23			17	15		20
72				45	26		22	10					
71			32	44		36	21				14	12	
70	20			43			20		8	16		11	19
69		18					19				13		
68			31	42	25	35	18	9			12	10	18
67				41			17			15			
66	19	17		40	24		16				11	9	
65			30			34	15		7	14	10		17
64				39			14			13	9	8	
63	18	16					13	8	6	11-12	8		16
62				38		33	12			10			
61			29	37	23		11		5	9	7	7	15
60	17	15					10			7-8			14
59				36		32	9		4	3-6	6	6	13
58			28				8	7		2	5		12
57				35			7			1			11
56	16				22		6		3		4	5	10
55				34		31	5	6			3		9
54		14	27	33		30	4		2		2	4	
53				32	21		3	5	1		1	2-3	8
52				31		29	2	4				1	7
51							1	-- 3					-- 6
PRODUCT MOMENT CORRELATION WITH MSAT								.76	.61	.57	.51	.48	.76

Norms for the Differential Aptitude Test (Form A)
Based on Students Tested in 1960-61 Who As Juniors Had a
Distribution of Minnesota Scholastic Aptitude Test Scores
Congruent With the State-Wide Junior Norms
Males - Grade 9
N = 5,329

Percentile	RAW SCORE Verb. Reas.	Num. Abil.	Abs. Reas.	Space Rel.	Mech. Reas.	V + N	Percentile	RAW SCORE Verb. Reas.	Num. Abil.	Abs. Reas.	Space Rel.	Mech. Reas.	V + N
100							50	17		29	40	37	
99	39-47	35-40	44-49	84-96	58-68	70-84	49				39		33
98	36-38	34		82-83	56-57	67-69	48		16				
97	35	33	43	80-81	55	65-66	47				38	36	32
96	34	32	42	78-79	54	63-64	46			28	37		
95	33	31		77	53	62	45	16			36		31
94	32		41	76		60-61	44		15		34-35	35	
93		30		74-75	52	59	43						
92	31		40	73		58	42			27	33		30
91	30	29		72	51	57	41				32		
90				71	50	56	40	15				34	
89	29	28	39	70		55	39		14	26	31		29
88				69	49	54	38				30		
87	28			68		53	37					33	28
86		27	38	67			36	14			29		
85	27			66	48	52	35		13	25	28	32	27
84		26		65	47	51	34						
83			37	64		50	33				27		
82	26			63			32			24	26		26
81		25		62		49	31	13	12		25	31	
80	25			61	46	48	30				24		25
79			36	60			29			23	23	30	
78						47	28		11				24
77	24	24		59	45		27	12		22	22	29	
76				58		46	26				21		
75			35				25			21	20		23
74	23	23		57	44	45	24		10			28	
73				56		44	23	11		20	19		22
72							22				18	27	
71				55		43	21			19			21
70	22	22	34	54	43		20		9	18	17	26	
69						42	19	10			16		20
68				53			18			17	15	25	
67	21	21		52	42	41	17		8	16			19
66			33				16			15	14	24	18
65				51		40	15	9			13		
64				50	41		14		7	14		23	17
63	20	20				39	13			12-13	12	22	
62			32	49			12	8	6	11	11	21	16
61				48			11			10	10		15
60				47	40	38	10			8-9	9	20	
59	19	19	31				9	7	5	7	8	19	14
58				46		37	8			5-6	7	18	13
57				45	39		7	6	4	4	6	17	12
56				44		36	6			3	5	16	11
55		18	30	43			5		3	1-2	4	14-15	10
54	18				38	35	4	5	2		2-3	13	9
53				42			3	4	1		1	10-12	7-8
52				41		34	2					7-9	5-6
51		17					1	-- 3				-- 6	-- 4
PRODUCT MOMENT CORRELATION WITH MSAT								.76	.63	.51	.47	.40	.76

Norms for the Differential Aptitude Test (Form A) Based on Students Tested in 1960-61 Who As Juniors Had a Distribution of Minnesota Scholastic Aptitude Test Scores Congruent With the State-Wide Junior Norms

Females - Grade 9

N = 4,980

Percentile	RAW SCORE Verb. Reas.	Num. Abil.	Abs. Reas.	Space Rel.	Mech Reas.	V + N	Percentile	RAW SCORE Verb. Reas.	Num. Abil.	Abs. Reas.	Space Rel.	Mech. Reas.	V + N
100							50			29	36	24	
99	39-45	34-39	45-49	80-94	46-60	69-81	49		17		35		
98	37-38	33	44	77-79	44-45	67-68	48						34
97	36	32	43	75-76	43	65-66	47				34	23	
96	35	31	42	73-74	42	62-64	46	17		28			
95	34			72	41	61	45		16		33		33
94	33	30	41	70-71		60	44						
93	32			69	40	59	43				32		32
92	31	29	40	68	39	57-58	42			27	31	22	
91				67	38	56	41	16					
90	30	28		65-66		55	40		15		30		31
89			39	64			39			26	29	21	
88	29	27		63	37	54	38						
87				62	36	53	37				28		30
86	28	26				52	36	15				20	
85			38	61	35		35		14	25	27		
84	27			60		51	34				26		29
83			37	59		50	33						
82		25		58	34		32			24	25	19	28
81	26			57		49	31	14					
80			36	56			30		13		24		
79		24			33	48	29			23	23	18	27
78	25			55			28						
77				54		47	27				22	17	26
76					32	46	26	13	12	22	21		
75	24	23	35	53			25						25
74				52			24			21	20	16	
73					31	45	23		11		19		
72		22		51			22			20			24
71	23		34	50	30	44	21	12			18	15	
70							20				17		23
69				49		43	19		10	19	16	14	
68	22	21		48	29		18			18			22
67						42	17	11		17	15		
66			33	47			16		9	16	14	13	21
65				46		41	15			15			20
64	21			45	28		14	10		14	13	12	
63		20				40	13		8	13	12		19
62			32	44			12			12		11	
61					27	39	11	9	7	11	11		18
60	20			43			10			9-10	10	10	17
59			31	42			9		6	8	9	9	16
58		19			26	38	8	8		6-7	8	8	
57				41			7		5	4-5	7		15
56	19			40		37	6	7		3	5-6	7	14
55							5		4	1-2	4	6	12-13
54		18	30	39	25		4	6	3		2-3	4-5	11
53				38		36	3		2		1	3	9-10
52				37			2	4-5	1			2	7-8
51	18					35	1	-- 3				1	-- 6
PRODUCT MOMEMT CORRELATION WITH MSAT								.77	.61	.55	.48	.47	.76

Norms for the Differential Aptitude Test (Form A)
Based on Students Tested in 1960-61 Who As Juniors Had a
Distribution of Minnesota Scholastic Aptitude Test Scores
Congruent With the State-Wide Junior Norms
Males - Grade 10
N = 437

	RAW SCORE							RAW SCORE					
Percentile	Verb. Reas.	Num. Abil.	Abs. Reas.	Space Rel.	Mech. Reas.	V + N	Percentile	Verb. Reas.	Num. Abil.	Abs. Reas.	Space Rel.	Mech. Reas.	V + N
100							50		20		46	39	
99	42-45	37-39	45-47	89-96	61-66	76-84	49						
98	41	36		87-88	59-60	74-75	48	20			45		40
97	39-40			85-86	58	72-73	47			31		38	39
96	38	35	44	82-84	57	71	46		19		44		38
95	37			81		70	45	19			43		
94		34	43	80	56	68-69	44				42		37
93	36	33		79	54-55	67	43					37	
92	35		42	77-78	53	66	42		18	30	41		36
91		32				65	41	18			40		
90	34			76	52	64	40		17			36	
89		31	41			63	39				39		35
88	33			74-75	51		38		16				
87				73		62	37	17		29	37-38		34
86						61	36					35	
85	32	30	40	72	50		35		15		36		33
84				70-71		60	34						
83	31			69			33	16		28	35		
82				68		59	32				34		32
81	30	29		67	49	58	31		14		33	34	
80			39	66	48	57	30				32		31
79				65			29	15		27	30-31	33	30
78	29			64		56	28				29		
77		28			47		27		13		28		29
76			38	63		55	26	14		26	27	32	28
75						54	25				26		
74	28	27		62	46		24		12		25		27
73			37			53	23			25	24	31	
72				61			22	13			23		
71	27	26			45	52	21		11	24	21-22	30	26
70			36				20						25
69	26			60		51	19			23	20		
68		25					18	12		22	19	29	24
67	25			59			17		10		18		23
66			35		44	50	16			21	17	28	
65				58		49	15			20	16		22
64	24	24		57			14	11	9			27	21
63				56		48	13			18-19	15		
62				55		47	12				14	26	20
61		23			43		11	10		17	13		
60			34	54		46	10	9	8	16	12	25	19
59	23			53	42	45	9			15	11	23-24	
58							8	8	7	13-14	8-10	22	18
57		22		52	41	44	7		6	12	7	21	17
56				51			6		5	10-11	5-6	20	16
55	22		33			43	5	7	4	8-9	3-4	19	15
54		21		50			4	6	3	-- 7	1-2	18	13-14
53				49	40	42	3	5				17	11-12
52	21						2	4	1-2			11-16	9-10
51			32	47-48		41	1	-- 3				-- 10	-- 8
PRODUCT MOMENT CORRELATION WITH MSAT								.81	.69	.52	.43	.35	.81

Norms for the Differential Aptitude Test (Form A) Based on Students Tested in 1960-61 Who As Juniors Had a Distribution of Minnesota Scholastic Aptitude Test Scores Congruent With the State-Wide Junior Norms

Females - Grade 10

N = 226

Percentile	Verb. Reas.	Num. Abil.	Abs. Reas.	Space Rel.	Mech. Reas.	V + N	Percentile	Verb. Reas.	Num. Abil.	Abs. Reas.	Space Rel.	Mech. Reas.	V + N
100							50	20	19		37		
99	43-45	35-38	45-48	82-92	49-56	75-83	49				36		38
98	42	34		80-81	47-48	73-74	48						
97	41	33	44	79	46	72	47			30			37
96	40			78	45	71	46	19			35		
95	39	32		76-77	44	68-70	45		18	29		25	
94	38		43	75		66-67	44				34		36
93	37	31		73-74	43	65	43						
92	36		42	71-72	42	64	42	18	17	28	33		35
91	35			69-70		63	41					24	
90	34	30		67-68	41	61-62	40				32		
89	33			66		60	39	17			31	23	34
88	32		41	64-65	39-40	59	38		16	27	30		
87		29		63		58	37				29		
86	31			62	38	57	36				28		33
85		28	40	61		56	35	16	15			22	
84	30						34			26	27		
83		27		60		55	33						32
82	29			59	37		32					21	
81		26	39	58		54	31			25	26		31
80	28			57	36		30					20	
79					35	53	29	15		24	25		30
78			38	56		52	28		14				
77	27	25					27				24	19	29
76				55	34	51	26			23			28
75			37	54		50	25	14			23		
74	26			53		49	24		13	22	21-22	18	27
73		24					23				20		
72				52	33	48	22	13		21	19	17	
71			36				21		12				26
70	25			51	32	47	20		11		18		
69		23					19			20		16	
68				50		46	18	12		18-19	17	15	25
67			35	49			17		10	16-17	16		
66	24				31		16			15		14	24
65		22					15	11					
64				48	30		14		8-9	14	15		23
63				46-47		45	13	10					22
62	23		34				12		7	13	14	13	21
61				45	29		11			11-12	13		
60		21		44		44	10	9	6	10			20
59				43			9				12	12	19
58			33	42	28	43	8			7-9	11		18
57	22			41			7	8		5-6	10	11	17
56					27	42	6		5	3-4	9		16
55		20	32	40		41	5	7		-- 2	7-8	10	15
54				39			4		4		5-6		12-14
53	21					40	3	6	3		2-4	9	10-11
52				38			2	5	1-2		1	7-8	9
51			31		26	39	1	-- 4				-- 6	-- 8
PRODUCT MOMENT CORRELATION WITH MSAT								.83	.64	.59	.51	.56	.82

Percentile Norms For Iowa Tests of Educational Development
Standard Scores (Form 3) Based on Students Tested in 1960-61 Who As
Juniors Had a Distribution of Minnesota Scholastic Aptitude Test
Scores Congruent With the State-Wide Test Norms
Males and Females - Grade 9
N = 3,511

Standard Score	Percent of Ninth Grade Students Falling Below Given Standard Scores									
	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6	Test 7	Test 8	Test C	Test 9
25		99			99	99				99
24	99	97		99	98	98	99	99	99	98
23	97	96	99	98	98	97	98	98	98	96
22	96	93	98	97	96	96	97	97	96	95
21	95	90	96	95	94	94	96	96	95	93
20	92	86	95	92	93	93	94	94	92	92
19	89	82	90	88	89	90	92	91	88	89
18	86	77	88	86	85	87	88	87	85	86
17	80	72	82	81	79	82	84	82	81	81
16	75	64	76	76	74	76	79	77	75	75
15	68	59	68	73	70	70	75	70	68	68
14	61	51	61	65	64	62	69	63	61	65
13	52	44	52	56	56	55	60	57	53	55
12	42	38	43	47	48	46	54	48	44	46
11	35	32	35	42	42	41	47	39	38	39
10	29	25	28	31	35	33	41	33	31	31
9	22	20	21	24	25	27	34	26	26	27
8	18	14	16	20	18	19	27	19	20	19
7	13	11	11	15	11	15	19	13	15	14
6	9	7	7	11	5	12	14	9	11	8
5	7	5	5	9	3	9	10	6	8	6
4	5	3	3	7	3	6	7	5	6	5
3	3	2	2	5	2	5	5	3	4	2
2	2	1	1	4	1	4	4	2	3	1
1	1			2		1	1	1	2	
PRODUCT MOMENT CORRELATION WITH MSAT	.70	.69	.70	.66	.72	.66	.72	.78	.81	.72

Percentile Norms For Iowa Tests of Educational Development
Standard Scores (Form 3) Based on Students Tested in 1960-61 Who As
Juniors Had a Distribution of Minnesota Scholastic Aptitude Test
Scores Congruent With the State-Wide Test Norms
Males and Females - Grade 10
N = 5,527

Standard Score	Percent of Tenth Grade Students Falling Below Given Standard Scores									
	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6	Test 7	Test 8	Test C	Test 9
27		99		99	99	99			99	99
26	99	97		98	98	98	99	99	98	98
25	98	96	99	97	97	96	98	98	97	96
24	96	94	98	96	95	94	97	96	95	95
23	94	89	96	94	93	92	95	94	93	92
22	92	88	94	92	91	90	94	92	91	89
21	89	81	90	89	88	87	91	89	87	86
20	85	75	87	85	85	84	89	85	83	83
19	81	71	81	80	80	81	85	80	78	79
18	77	64	77	77	74	75	79	74	72	74
17	70	57	71	71	68	70	74	67	66	68
16	64	51	64	64	63	64	69	60	61	60
15	55	45	55	61	58	57	62	53	54	53
14	47	39	47	53	52	49	57	44	45	49
13	39	32	39	45	45	43	48	40	39	41
12	30	26	31	36	38	35	41	32	31	33
11	23	22	25	33	33	32	35	24	25	27
10	19	17	20	25	27	26	29	20	20	20
9	14	14	15	18	20	19	23	15	16	17
8	11	10	11	14	14	13	17	11	12	11
7	8	7	8	11	9	10	13	7	8	9
6	5	5	5	8	4	8	9	5	6	6
5	4	3	3	7	3	6	7	4	3	5
4	3	2	2	5	3	5	5	3	3	3
3	2	1	2	4	2	3	4	3	2	2
2	1		1	3	1	2	3	2	2	1
1				2		1	2	2	1	
PRODUCT MOMENT CORRELATION WITH MSAT	.66	.62	.71	.66	.73	.70	.72	.81	.81	.73

Percentile Norms For Iowa Tests of Educational Development
Standard Scores (Form 3) Based on Students Tested in 1960-61 Who As
Juniors Had a Distribution of Minnesota Scholastic Aptitude Test
Scores Congruent With the State-Wide Test Norms
Males and Females - Grade 11
N = 3,683

Standard Score	Percent of Eleventh Grade Students Falling Below Given Standard Scores									
	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6	Test 7	Test 8	Test C	Test 9
31									99	
30						99			98	
29	99			99	99	98		99	97	99
28	97	99		97	98	97	99	98	96	98
27	96	98	99	97	96	96	98	97	96	95
26	94	95	98	95	94	94	96	95	95	93
25	92	92	96	93	92	91	94	93	92	89
24	89	88	94	91	89	88	92	90	89	86
23	85	84	91	89	86	85	89	87	85	81
22	82	78	87	86	82	81	87	84	82	78
21	79	73	82	81	79	78	84	80	77	73
20	72	65	78	76	76	75	80	75	72	70
19	68	60	71	70	70	70	76	69	65	64
18	63	53	65	67	63	65	69	61	58	58
17	54	48	58	60	56	57	63	54	52	52
16	48	40	51	53	50	51	56	47	45	45
15	40	35	42	50	46	45	50	40	39	39
14	34	29	36	44	40	38	45	34	33	35
13	28	24	29	36	32	33	36	29	27	28
12	21	20	22	29	27	26	31	24	21	21
11	17	16	18	26	22	22	26	19	18	18
10	13	12	14	19	18	17	21	15	13	13
9	10	10	10	14	13	13	17	11	11	11
8	8	7	8	12	10	9	13	8	8	7
7	6	6	6	9	6	7	9	6	6	6
6	4	4	4	7	3	6	7	4	4	4
5	3	3	3	6	2	4	5	3	3	3
4	3	3	2	5	1	3	3	2	3	2
3	2	2	2	3		2	3	1	2	1
2	1	2	2	3		2	2		2	
1		1	1	1		1	1		1	
PRODUCT MOMENT CORRELATION WITH MSAT										
	.69	.65	.73	.67	.75	.73	.75	.81	.83	.74

Percentile Norms For Iowa Tests of Educational Development
Standard Scores (Form 3) Based on Students Tested in 1960-61 Who As
Juniors Had a Distribution of Minnesota Scholastic Aptitude Test
Scores Congruent With the State-Wide Test Norms
Males and Females - Grade 12
N - 1,560

Standard Score	Percent of Twelfth Grade Students Falling Below Given Standard Scores									
	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6	Test 7	Test 8	Test C	Test 9
33				99					99	
32				98					98	
31	99			97		99			97	
30	98			96	99	98		99	96	99
29	97	99		95	98	96		98	94	97
28	95	97	99	93	96	94	99	97	93	96
27	93	94	98	92	93	93	97	96	90	93
26	90	90	96	90	89	90	94	94	88	90
25	86	86	94	87	86	85	92	91	85	85
24	82	80	91	85	83	81	88	87	81	83
23	77	75	86	81	79	76	84	82	76	76
22	74	68	81	78	74	72	81	78	71	72
21	69	62	74	73	70	68	76	73	66	66
20	61	56	68	68	67	64	71	67	61	63
19	57	51	60	63	61	60	66	60	55	57
18	52	45	56	59	55	55	59	54	48	51
17	44	41	49	53	48	48	53	46	43	45
16	39	34	43	45	43	42	47	40	38	37
15	32	30	34	43	39	37	41	34	32	32
14	26	24	29	36	34	30	36	28	26	28
13	22	19	24	31	28	25	28	25	22	23
12	16	16	20	25	24	21	24	20	17	18
11	12	14	16	22	19	18	21	15	14	14
10	10	12	13	16	15	15	18	12	11	11
9	7	10	11	12	11	12	14	8	9	9
8	6	7	9	10	9	9	12	7	7	7
7	5	6	7	8	6	7	8	5	5	5
6	4	4	5	6	3	6	7	4	5	2
5	3	3	4	5	2	4	5	3	3	2
4	3	3	4	5	1	3	3	2	2	1
3	2	2	3	3		3	3	1	1	
2	2	2	3	2		2	2			
1	1	1	1	1		1	1			
PRODUCT MOMENT CORRELATION WITH MSAT	.69	.67	.66	.65	.74	.73	.73	.79	.80	.73

UNIVERSITY OF MINNESOTA

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A SURVEY OF SCHOLASTIC APTITUDE IN MINNESOTA COLLEGES

by

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This report is based on freshmen entering all Minnesota Colleges in the fall of 1963 who were tested as juniors in the 1959-63 State-Wide College Testing Program.

CONTENTS

INTRODUCTION

This survey encompasses data on tens of thousands of juniors and thousands of entering college freshmen and stands as testimony to long continued cooperative efforts of Minnesota high schools and colleges. It is based on 1963 entering freshmen to Minnesota colleges graduated from Minnesota high schools during the period 1959-1963 who had been tested during their junior year of high school.

When one considers that this is the sixth such survey in the ten-year period of junior testing (1954-1963); or if one considers that this is the twentieth survey since 1938 and that data are available since 1930 for some colleges, one can only be struck with the monumental cooperative effort of Minnesota high schools and colleges to identify and make educational provisions for Minnesota youth.

HISTORIC TURNING POINT

In more than one sense the Survey of 1963 Entering Freshmen to Minnesota Colleges marks a historic turning point. For one, it marks a decade of data based on college freshmen originally tested as high school juniors. Freshmen included in the 1954 report were the first tested as juniors. Prior to that year, high school seniors had been tested in this program. Secondly, it marks the end of 30 years of use of the Cooperative English Tests. One form or another of these English achievement tests has been in use since 1934.

But in a third sense this Survey is not only historic, but also timely. It represents the last of the "small" high school graduating classes covering the last entering freshmen class of the "pre-deluge" era. The 1964 group of Minnesota high school seniors represented a 20 percent increase over the number of 1963 seniors. Thus, this Survey will establish an important point of comparison to be used against data established for Minnesota high school seniors and college freshmen of 1964 and beyond. The next Survey will be based on 1965 Minnesota college freshmen and will permit the first state-wide look at the effect of the mounting number of high school graduates on both the number and quality of college entrants.

COMPLETENESS OF DATA

The bulk of the 1963 college freshmen covered in this report had been tested as high school juniors in the school year 1961-62. During that year 45,488 juniors were tested in the 570 high schools of the state. Of these high schools, 566 (99 percent) participated in the State-Wide Junior Testing Program. Data are thus available on over 99 percent of all juniors that year as the four schools not participating had very small enrollments. Data were obtained for eight colleges of the University, 17 liberal arts colleges, five state colleges and 12 junior colleges - 42 colleges in all. This represents all certified colleges in Minnesota that year.

The data below show how the number of entering freshmen for the current report (1963) compares to the number covered in the last Survey (1961 entering freshmen).

	Entering Freshmen for All Minnesota Colleges	
	1961	1963
Total Number of Entering Freshmen	19,806	20,301
Total Number of Freshmen from Minnesota High Schools	NA*	17,022
Number of These Graduating from Minnesota High Schools During 1959-1961**	15,446	
Number of These Graduating from Minnesota High Schools During 1959-1963**		16,442

*NA - Not Available

**The 1961 report covers three years of high school graduation (1959-1961); the 1963 report, five years (1959-1963).

The difference from 1961 to 1963 is not accounted for by the difference in the base number of years involved. The data actually reflect a slightly higher percent of 1963 high school graduates going on to college. There were fewer high school seniors in 1963 than in 1961. If we look at the figures for the corresponding years when these high school graduates were tested as juniors we find that 47,480 of the 1960 juniors (1961 seniors) were tested with MSAT whereas 45,488 of the 1962 juniors (1963 seniors) were tested with MSAT. Another figure to keep in mind here is that 62,455 of the 1964 juniors (1965 seniors) were tested with MSAT. As emphasized above, 1963 represents the last of the "small" high school graduating classes. The 1965 Survey will permit us to study what effect the burgeoning number of high school graduates has had on the number and quality of students attending college.

Three items of information about each student are available in the State-Wide Testing Program. These are the student's high school percentile rank (HSR), a measure of past achievement based on high school grades obtained through the junior year of high school and comparing him to students in his own class; his score on the Minnesota Scholastic Aptitude Test (MSAT), a measure of general scholastic aptitude; and his score on the Cooperative English Test (CET), a measure of competency in English. Means and standard deviations for each of these three variables are computed and reported by sex, by individual college, by type of college, for all colleges combined and for juniors of 1961-62 who furnished the bulk of the 1963 Minnesota college freshmen. Tables 1-3 show how complete these figures are for each group studied. Table 4 shows completeness of these measures for the total populations studied.

THE RESULTS

The data are presented in three different ways: The means and standard deviations are presented for each group as defined above (Tables 5-10); graphs comparing several selected groups on means, and ranges of HSR, MSAT and English test scores (Figures 1-3) are provided; and a break down by level

of HSR and MSAT scores shows the composition of 1963 Minnesota college freshmen by these levels (Tables 11-16). The tables giving means and standard deviations and the graphs for means and ranges have been used since these Surveys began in 1938. The analysis of college freshmen by HSR and MSAT level was first reported for the 1959 entering freshmen.

Tables 5-10, presenting the means and standard deviations by sex, college, type of college, total freshmen group and 1961-62 juniors tested in the State-Wide Program are self-explanatory. The student populations show large variability between sexes, across colleges, and across college groups on the three measures studied. For all freshmen studied the mean HSR was 64.58 (Table 5). However, the mean HSR for the major college groups ranges from 55.03 to 75.68. Similar marked variations are shown for MSAT and CET means. The means of individual colleges within a type of college also show considerable variation. For the liberal arts colleges, men and women combined, the total group HSR mean is 75.68, while HSR means for the colleges of this group range from 62.66 to 96.45. Similar marked fluctuations of the MSAT and CET means also appear. The state colleges are the least variable. The HSR mean for all state college freshmen is 57.97. For the five state colleges individually we find the HSR means range from 55.69 to 61.03. The standard deviations, when considered along with the mean scores, indicate that most colleges are getting both high and low ability students.

Figures 1-3 help illustrate this. A figure is presented for selected groups of colleges for each of the variables, HSR, MSAT, and CET. The wide portion of each bar represents the range of scores for approximately the middle two-thirds of the combined male and female group. The indentation shows the mean score for each group. The total range for each group can extend from the first to the 100th percentile (see scale at bottom of each figure).

To illustrate the appropriate interpretation of these graphs we can consider the bar in each figure for the Minnesota high school juniors group (top bar in each graph). In Figure 1 the mean HSR is about 50 with the middle two-thirds of the distribution ranging from an HSR of 22 to 79. Figure 2 shows that this group has a mean MSAT of 33 and the middle two-thirds of the scores range from an MSAT of 18 to an MSAT of 47. As shown in Figure 3, the CET mean is 131 and the middle two-thirds of the scores range from a CET of 90 to a CET of 173. For Figures 2 and 3, reference to the percentile rank scale at the bottom of each graph will locate each group in terms of a norm group of college freshmen previously tested as high school juniors. Thus, the high school junior group in Figure 2 has a MSAT percentile rank range from about 5 to 73 and in Figure 3, a percentile rank range of 4 to 82.

In Tables 11-16 we see the distribution of Minnesota high school graduates entering difference colleges in terms of ability and achievement level. In Table 11 the 15,800 entering freshmen to Minnesota colleges the fall of 1963 are divided as closely as possible into 20 groups of five percent each on the basis of their MSAT scores. Row 1 of this table includes only MSAT raw scores of 65-78. The 809 students in this group all fall at or above the 97th percentile rank. Forty five percent of them enrolled in some brach of the University of Minnesota, 44 percent in the liberal arts colleges, seven percent in the state colleges, and four percent in the junior colleges. The last five columns show a cumulated percent from high to low for each of the four college groups and the total group. Table 12 repeats this analysis for HSR. Tables 13 and 14 present data for the University of Minnesota broken down into respective colleges. Tables 15-16 repeat the analysis used in Tables 11 and 12 but in greater detail and based on approximately the upper ten percent of the students, Table 15 for MSAT and Table 16 for HSR.

Tables 11-16, along with tables of means and standard deviations and Figures 1-3 emphasize that every college group is getting both some of the very able and the less able Minnesota high school graduates. The high ability students are clustered more heavily in the University's College of Liberal Arts and Institute of Technology and in the private liberal arts colleges while the less able students are concentrated more heavily in the University's General College, the state colleges, and the junior colleges. It is encouraging to see that in the total educational picture for Minnesota that every college group is still affording channels for students with low indices of academic promise (lower third HSR and MSAT scores). It will be of great interest to see how this type of analysis of the Minnesota college entrant will change for the 1965 Minnesota college freshmen population. By the fall of 1965 Minnesota colleges will have had an opportunity to adopt selection procedures in response to the "tidal wave" of high school graduates which commenced in 1964. Also, the University's new admission policy for the College of Liberal Arts will be in effect.

TRENDS

It is always difficult to assess trends. One is never sure whether a given change, up or down, on the HSR or MSAT mean for a college or college group is a real change or represents a "chance" fluctuation for the given year only. In "Who Goes to College?", published in 1962, summary tables and graphs were presented for the State-Wide College Testing Program for the period 1938 to 1959 (1). When one adds the 1961 (4) and 1963 Survey data to the summary data presented in that publication, some trends do appear. Since 1954 both HSR and MSAT means for the private liberal arts college groups have shifted steadily upward. The other college groups' HSR means have held essentially steady for the ten-year period, 1954-1963. The interpretation of the HSR means is particularly difficult because the means are presented for total groups, that is, for men and women combined. We know women average significantly higher than men on this variable. Thus, in Table 10 we find HSR means of 44.5 for men and 56.6 for women for the total population of 1961-62 Minnesota high school juniors. An analysis of sex ratios for the different college groups over the 1954-1963 period indicated that the college groups have shown no trends in changing sex ratio except the University's College of Liberal Arts where the ratio of men to women has shifted from about 3:2 to 1:1.

A trend is definitely taking place on MSAT results. Since 1959 when MSAT data were first available for Minnesota college freshmen, mean MSAT scores for the various college groups have shifted upwards. However, this finding does not appear to mean that Minnesota colleges have become more selective on this variable. Mean MSAT scores for all juniors tested have shifted upwards an equal amount over the same period. This finding on an upward shift of MSAT scores during the past five years is consistent with similar observations by directors of other large scale testing programs*. A substantial gain on scores of both scholastic aptitude and achievement tests over the past five years has been reported by many test program directors. Elementary and secondary schools appear to be doing a better job than ever with their students.

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*Personal communications at November 1964 conference - The New York Invitational Conference on Testing Problems and the Princeton Conference of Testing Program Directors.

As in previous Surveys of Scholastic Aptitude certain findings reoccur. Women continue to show significantly higher mean scores on HSR and on the English test than do men. They continue to show a slightly higher mean MSAT score. Though some trends were noted above, in general the pattern across the college groups remains remarkably consistent. The University's College of Liberal Arts and the private liberal arts colleges continue to show about the same mean scores, a trend which appears to have begun with the 1959 entering freshmen group. State and junior college freshmen continue to have similar entering freshmen groups on the State-Wide measures.

Though the HSR mean for the liberal arts college group shows an upward trend and other college groups show no apparent trend, some individual colleges may have mean scores fluctuating markedly from the pattern of their college group. Such individual fluctuations must be interpreted by a given college in light of its own changing administrative procedures, increase or decrease in numbers enrolled, or chance fluctuations due to some non-recurring enrollment phenomena.

The 1959 study reported HSR and MSAT scores for slightly over 11,000 entering freshmen, the 1961 study for about 15,500 and the current 1963 study for about 16,500 entering freshmen. As pointed out above, the Surveys starting with the projected 1965 study will be of great importantance for assessing how the enrollment potential of the early "tidal wave" years has affected the quantity and quality of Minnesota college entrants.

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Table 1

Number of males who were graduated from Minnesota high schools in 1959-1963 and who were enrolled in each college and in each type of college with number and percent for whom specified scores were available.

MALES

	College Code	Total No.** Freshmen Males Enrolled	HSR* Data Available for: No.	HSR* Data Available for: %	MSAT* Data Available for: No.	MSAT* Data Available for: %	CET* Data Available for: No.	CET* Data Available for: %
4 Year Colleges	1	139	132	95	132	95	132	95
	2	55	51	93	50	91	50	91
	3	57	55	96	55	96	54	95
	4	123	116	94	117	95	117	95
	5	69	65	94	67	97	67	97
	6	129	127	98	126	98	124	96
	7	127	124	98	123	97	123	97
	8	132	129	98	129	98	129	98
	9	46	42	91	41	89	41	89
	10							
	11							
	12	231	231	100	227	98	228	99
	13	86	80	93	75	87	75	87
	14	149	148	99	149	100	148	99
	15							
	16							
	17	322	311	97	308	96	307	95
Total		1665	1611	97	1599	96	1595	96
Junior Colleges	1	165	157	95	155	94	155	94
	2	7	6	86	5	71	5	71
	3	99	91	92	91	92	90	91
	4	49	44	90	43	88	43	88
	5	44	44	100	44	100	44	100
	6	80	77	96	76	95	75	94
	7	160	154	96	149	93	148	93
	8	83	79	95	77	93	76	92
	9	240	226	94	227	95	227	95
	10	132	130	98	129	98	129	98
	11	144	138	96	138	96	138	96
	12	114	109	96	105	92	108	95
Total		1317	1255	95	1239	94	1238	94
State Colleges	1	332	313	94	308	93	308	93
	2	950	915	96	901	95	899	95
	3	280	268	96	264	94	266	95
	4	591	560	95	555	94	556	94
	5	215	207	96	198	92	196	91
Total		2368	2263	96	2226	94	2225	94
Grand Total, All Colleges Without Univ. of Minnesota		5350	5129	96	5064	94	5058	94

* HSR - High School Percentile Rank
MSAT - Minnesota Scholastic Aptitude Test
CET - Cooperative English Test

** Who were graduated in 1959, '60, '61, '62 and '63 from Minnesota high schools.

Table 2

Number of females who were graduated from Minnesota high schools in 1959-1963 and who were enrolled in each college and in each type of college with number and percent for whom specified scores were available.

FEMALES

	College Code	Total No. Freshmen Females Enrolled	HSR Data Available for: No.	HSR Data Available for: %	MSAT Data Available for: No.	MSAT Data Available for: %	CET Data Available for: No.	CET Data Available for: %
4 Year Colleges	1	137	136	99	135	99	135	99
	2	62	60	97	59	95	59	95
	3	29	29	100	29	100	29	100
	4	157	153	97	150	96	149	95
	5	60	57	95	57	95	56	93
	6	164	162	99	160	98	162	99
	7	110	110	100	107	97	108	98
	8	168	164	98	160	95	160	95
	9	38	35	92	34	89	33	87
	10	134	127	95	124	93	124	93
	11	289	283	98	279	97	278	96
	12							
	13							
	14	170	163	96	164	96	164	96
	15	83	79	95	79	95	79	95
	16	137	134	98	131	96	132	96
	17							
Total		1738	1692	97	1668	96	1668	96
Junior Colleges	1	82	82	100	74	90	74	90
	2	20	19	95	19	95	19	95
	3	53	51	96	50	94	50	94
	4	31	30	97	31	100	31	100
	5	14	14	100	14	100	14	100
	6	51	50	98	47	92	47	92
	7	104	102	98	99	95	99	95
	8	55	49	89	50	91	49	89
	9	160	159	99	158	99	158	99
	10	110	110	100	109	99	109	99
	11	128	124	97	122	95	122	95
	12	56	53	95	52	93	51	91
Total		864	843	98	825	95	823	95
State Colleges	1	197	190	96	185	94	186	94
	2	795	769	97	759	95	757	95
	3	216	204	94	208	96	208	96
	4	537	524	98	516	96	516	96
	5	165	159	96	157	95	157	95
Total		1910	1846	97	1825	96	1824	95
Grand Total, All Colleges Without Univ. of Minnesota		4512	4381	97	4318	96	4315	96

Table 3

Number of males and females who were graduated from Minnesota high schools in 1959-1963 and who were enrolled in each college and in each type of college, with number and percent for whom specified scores were available.

MALES AND FEMALES

	College Code	Total No. Freshmen Males & Females Enrolled	HSR Data Available for: No.	HSR Data Available for: %	MSAT Data Available for: No.	MSAT Data Available for: %	CET Data Available for: No.	CET Data Available for: %
4 Year College	1	276	268	97	267	97	267	97
	2	117	111	95	109	93	109	93
	3	86	84	98	84	98	83	97
	4	280	269	96	267	95	266	95
	5	129	122	95	124	96	123	95
	6	293	289	99	286	98	286	98
	7	237	234	99	230	97	231	97
	8	300	293	98	289	96	289	96
	9	84	77	92	75	89	74	88
	10	134	127	95	124	93	124	93
	11	289	283	98	279	97	278	96
	12	231	231	100	227	98	228	99
	13	86	80	93	76	88	75	87
	14	319	311	97	313	98	312	98
	15	83	79	95	79	95	79	95
	16	137	134	98	131	96	132	96
	17	322	311	97	308	96	307	95
Total		3403	3303	97	3268	96	3263	96
Junior Colleges	1	247	239	97	229	93	229	93
	2	27	25	93	24	89	24	89
	3	152	142	93	141	93	140	92
	4	80	74	93	74	93	74	93
	5	58	58	100	58	100	58	100
	6	131	127	97	123	94	122	93
	7	264	256	97	248	94	247	94
	8	138	128	93	127	92	125	91
	9	400	385	96	385	96	385	96
	10	242	240	99	238	98	238	98
	11	272	262	96	260	96	260	96
	12	170	162	95	157	92	159	94
Total		2181	2098	96	2064	95	2061	94
State Colleges	1	529	503	95	493	93	494	93
	2	1745	1684	97	1660	95	1656	95
	3	496	472	95	472	95	474	96
	4	1128	1084	96	1071	95	1072	95
	5	380	366	96	355	93	353	93
Total		4278	4109	96	4051	95	4049	95
Grand Total, All Colleges Without Univ. of Minnesota		9862	9510	96	9373	95	9383	95

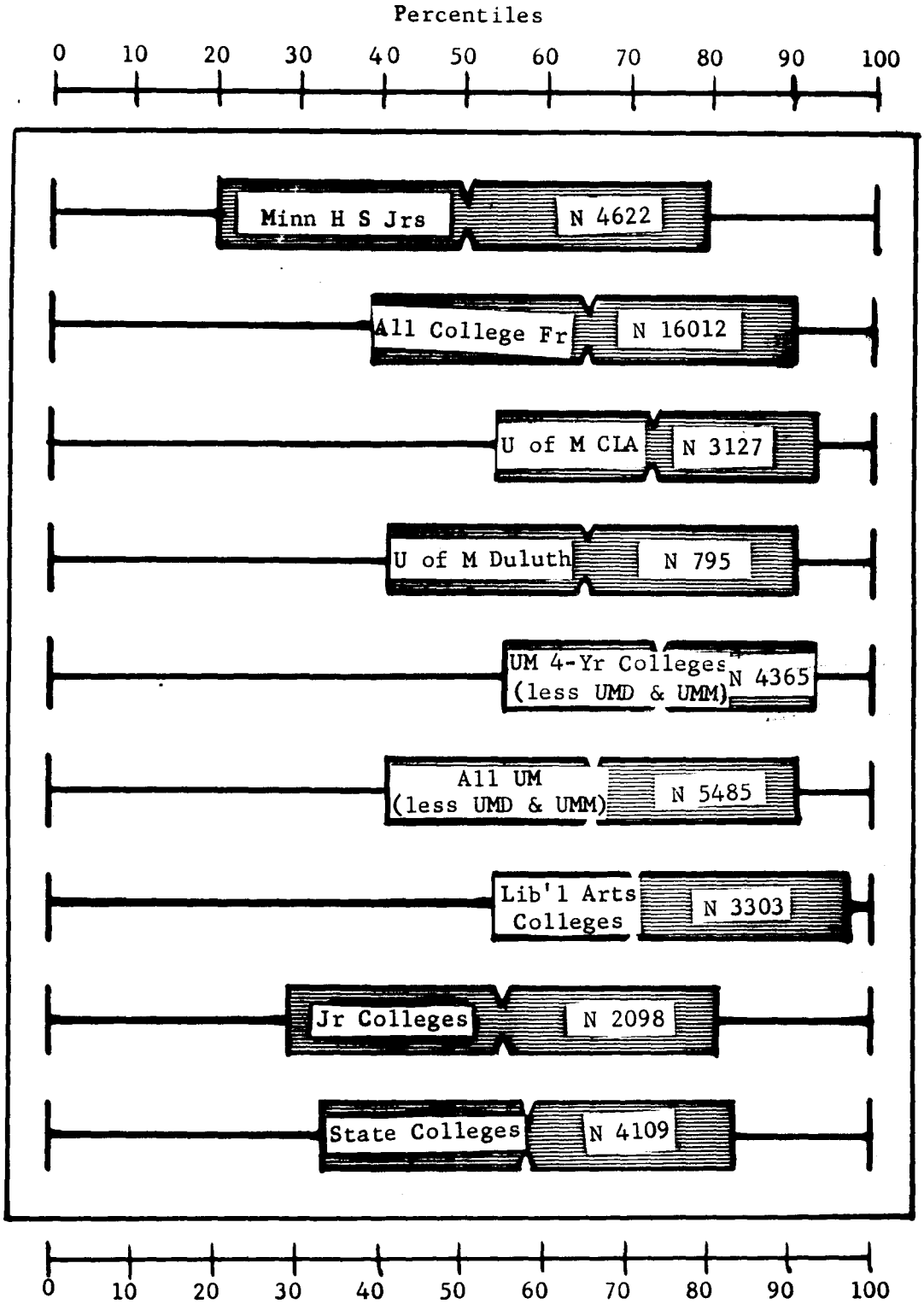
Table 4

The total number of entering freshmen in Minnesota colleges the fall of 1963, the number from Minnesota high schools, and the number graduating from Minnesota high schools in 1959-1963.

	Total No. Ent. Fr.	No. Ent. Fr. From Minn. H.S.	No. Ent. Fr. Grad. From Minn. H.S. in 1959-1963
All University Colleges	7184	6995	6581
Four Year Liberal Arts Colleges	5872	3434	3403
Junior Colleges	2396	2239	2180
State Colleges	4849	4354	4278
GRAND TOTAL			
Not including the University of Minnesota	13117	10027	9861
Including the University of Minnesota	20301	17022	16442

Figure 1

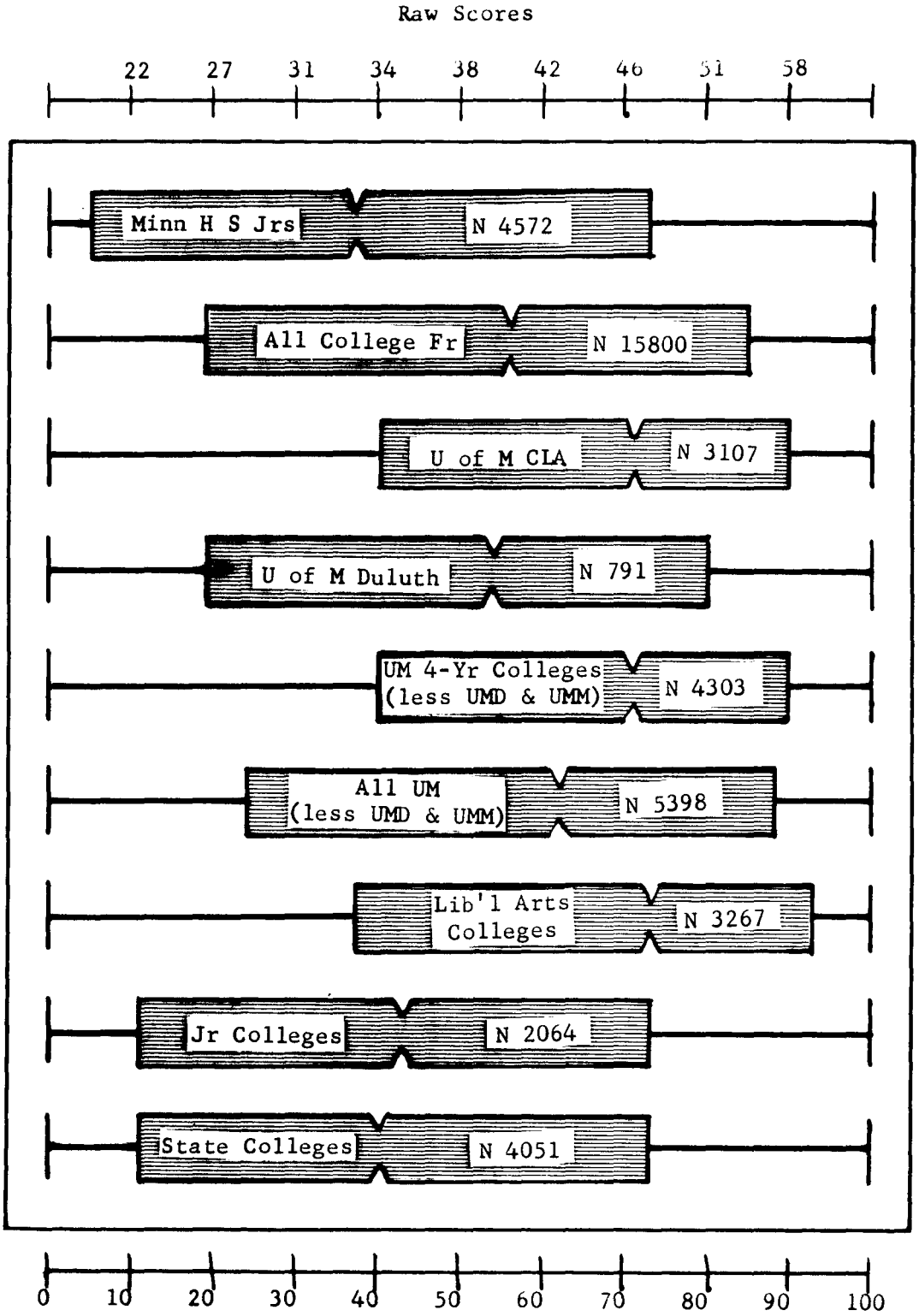
Variability of High School Percentiles of College Freshmen who Were Graduated From Minnesota High Schools and Who Entered Minnesota Colleges September, 1963.



The range of each group can extend from the first to the hundredth percentile. The wide portion of each group represents the middle two-thirds of freshmen of the group. The identation in the wide portion is the mean of the group.

Figure 2

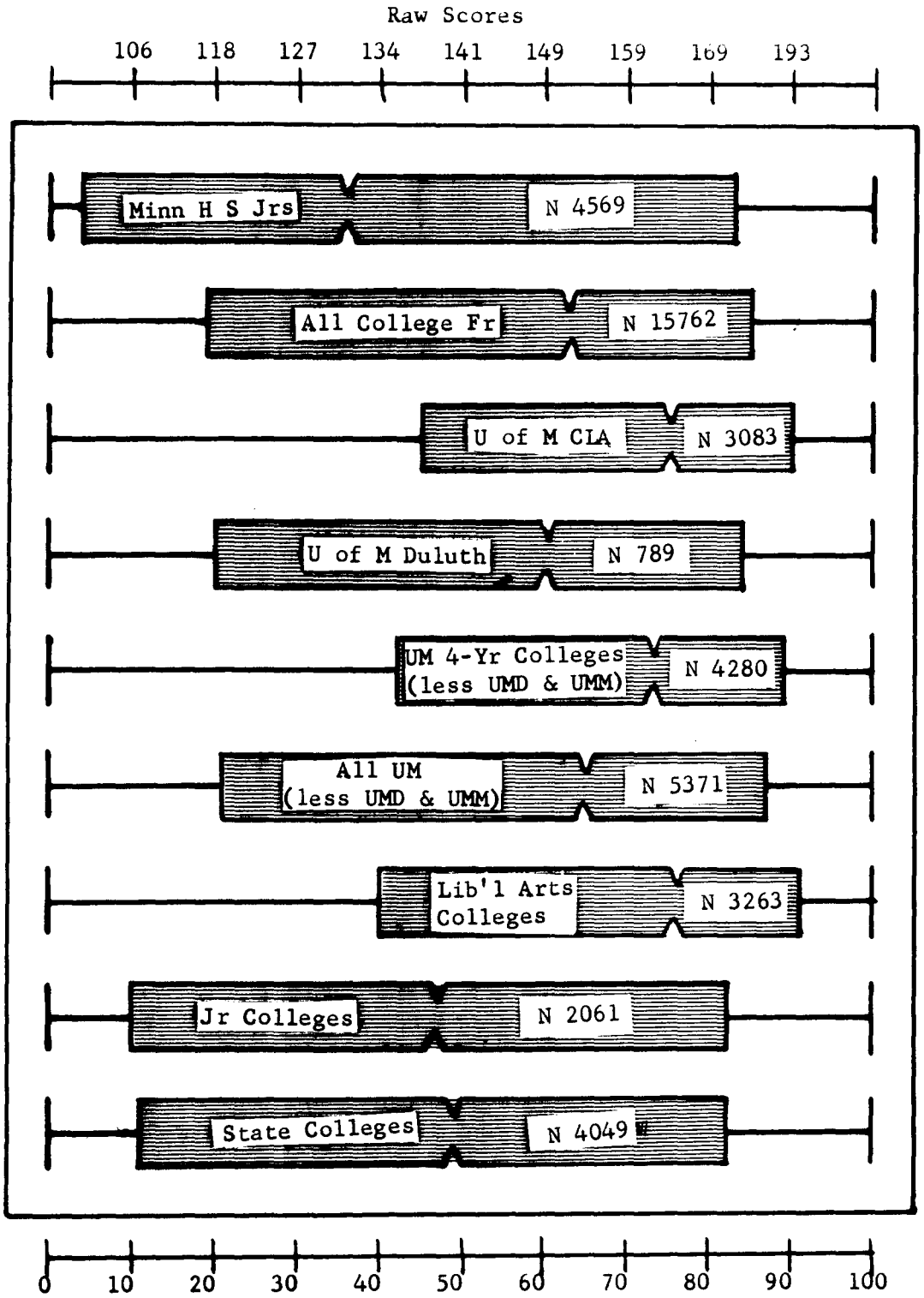
Variability of Minnesota Scholastic Aptitude Test Scores For College Freshmen Who Were Graduated From Minnesota High Schools and Who Entered Minnesota Colleges, September 1963.



The range of each group can extend from the first to the hundredth percentile. The wide portion of each group represents the middle two-thirds of the group. The identation in the wide portion is the mean of the group.

Figure 3

Variability of Cooperative English Test, Form Z, Lower Level, Total Score. College Freshmen Who Were Graduated From Minnesota High Schools and Who Entered Minnesota Colleges, September 1963.



The range of each group can extend from the first to the hundredth percentile. The wide portion of each group represents the middle two-thirds of the group. The identation in the wide portion is the mean of the group.

Table 5

Table showing the mean and standard deviation of High School %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, lower level) for:

A. University of Minnesota
B. Four Year Colleges
C. Junior Colleges
D. State Colleges

MALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A	3923	61.86	25.62	3893	39.83	13.74	3870	144.03	33.68
B	1611	70.87	22.58	1599	44.96	13.61	1595	156.36	30.47
C	1255	49.41	24.87	1239	33.50	12.32	1238	130.39	33.46
D	2263	50.10	24.45	2226	32.14	11.50	2225	128.00	32.10
Total	9052	58.80	25.92	8957	37.96	13.80	8928	140.35	34.25

FEMALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A	2579	72.80	22.47	2525	43.63	13.63	2519	165.61	28.20
B	1692	80.27	18.79	1668	48.02	13.69	1668	173.58	26.34
C	843	63.39	24.41	825	35.96	13.49	823	152.32	31.69
D	1846	67.61	22.64	1825	37.14	12.50	1824	155.21	28.40
Total	6960	72.10	22.63	6843	42.04	14.08	6834	163.18	29.30

MALES AND FEMALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A	6502	66.20	25.00	6418	41.33	13.82	6389	152.54	33.35
B	3303	75.68	21.25	3267	46.52	13.74	3263	165.16	29.71
C	2098	55.03	25.62	2064	34.48	12.86	2061	139.15	34.48
D	4109	57.97	25.21	4051	34.39	12.21	4049	140.26	33.36
Total	16012	64.58	25.41	15800	39.73	14.07	15762	150.25	34.13

TABLE 6

Table showing the mean and standard deviation of High School %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, Lower Level) for:

UNIVERSITY OF MINNESOTA

1. Agriculture
2. College of Liberal Arts
3. Dental Hygiene
4. Education
5. General College
6. Institute of Technology
7. U of M at Duluth
8. U of M at Morris

MALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A 1	262	69.57	17.15	261	38.55	12.19	261	141.21	31.08
2	1512	68.75	19.97	1521	44.62	11.19	1502	155.31	27.00
3									
4	42	62.79	15.47	41	32.12	11.86	41	130.00	29.94
5	815	30.96	17.89	804	25.24	7.26	800	109.58	27.84
6	703	80.27	16.04	672	49.29	12.27	673	163.44	26.02
7	444	58.03	24.94	443	36.63	11.84	442	137.66	30.30
8	145	71.90	17.21	151	40.89	11.55	151	155.11	23.69
Total	3923	61.86	25.62	3893	39.83	13.74	3870	144.03	33.68

FEMALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A 1	144	79.75	15.10	142	42.91	11.35	141	162.51	28.08
2	1615	77.43	18.11	1586	47.44	12.08	1581	172.68	23.08
3	19	80.84	14.51	17	46.65	9.81	17	177.88	17.24
4	48	70.90	16.76	47	37.87	11.58	48	158.35	22.98
5	305	38.29	20.73	291	25.39	7.34	291	127.15	28.35
6	20	93.95	6.26	16	57.50	10.40	16	187.50	16.48
7	351	74.81	20.53	348	41.28	12.46	347	163.93	24.79
8	77	83.94	14.21	78	45.96	12.84	78	176.15	20.84
Total	2579	72.80	22.47	2525	43.63	13.63	2519	165.61	28.20

Table 6
(Continued)

MALES AND FEMALES

Code	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A 1	406	73.18	17.16	403	40.08	12.08	402	148.68	31.73
2	3127	73.23	19.52	3107	46.06	11.74	3083	164.22	26.53
3	19	80.84	14.51	17	46.65	9.81	17	177.88	17.24
4	90	67.11	16.67	88	35.19	12.06	89	145.29	29.96
5	1120	32.95	18.99	1095	25.28	7.28	1091	114.27	29.03
6	723	80.65	16.01	688	49.48	12.29	689	163.99	26.09
7	795	65.44	24.55	791	38.68	12.33	789	149.22	30.90
8	222	76.08	17.22	229	42.62	12.24	229	162.28	24.85
Total	6502	66.20	25.00	6418	41.33	13.82	6389	152.54	33.35

Table 7

Table showing the mean and standard deviation of high school %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, lower level) for:

Four Year Colleges

MALES

Code	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
B 1	132	67.79	21.13	132	40.85	11.83	132	150.23	28.88
2	51	64.84	22.92	50	41.26	13.22	50	149.18	34.03
3	55	89.58	15.72	55	63.51	7.02	54	188.74	17.68
4	116	72.09	20.74	117	42.43	13.02	117	154.28	29.60
5	65	59.23	26.24	67	41.58	12.52	67	151.39	32.31
6	127	71.58	19.07	126	44.38	12.30	124	155.95	30.03
7	124	71.50	22.61	123	44.28	13.80	123	155.12	29.16
8	129	79.60	17.86	129	51.84	10.38	129	171.49	22.57
9	42	44.64	22.37	41	32.12	11.37	41	122.95	35.15
10									
11									
12	231	73.90	20.28	227	44.28	11.92	228	156.42	26.35
13	80	65.70	26.82	75	41.92	13.52	75	149.37	31.50
14	148	82.13	14.40	149	52.27	11.78	148	170.63	25.06
15									
16									
17	311	64.95	23.28	308	42.76	14.09	307	149.92	30.03
Total	1611	70.87	22.58	1599	44.96	13.61	1595	156.36	30.47

FEMALES

Code	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
B 1	136	81.79	16.85	135	45.13	13.27	135	168.27	30.98
2	60	79.35	15.35	59	43.83	13.16	59	170.22	19.64
3	29	96.45	5.11	29	64.79	11.57	29	197.59	17.33
4	153	81.80	15.92	150	45.32	13.68	149	171.64	27.16
5	57	79.23	14.29	57	41.16	11.06	56	163.52	21.13
6	162	81.20	14.84	160	47.21	12.28	162	175.53	21.53
7	110	84.52	15.38	107	50.41	12.96	108	174.63	28.74
8	164	89.66	11.03	160	53.84	12.15	160	181.94	20.42
9	35	62.66	22.89	34	36.74	12.46	33	156.39	32.63
10	127	74.27	20.51	124	44.13	12.91	124	167.29	25.82
11	283	72.47	23.39	279	48.42	13.09	278	173.75	26.32
12									
13									
14	163	89.88	9.94	164	56.60	10.93	164	188.98	17.94
15	79	75.49	18.64	79	42.99	12.86	79	162.33	27.52
16	134	76.07	21.99	131	45.24	14.14	132	165.76	27.06
17									
Total	1692	80.27	18.79	1668	48.02	13.69	1668	173.58	26.34

Table 7
(Continued)

MALES AND FEMALES

Code	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
B 1	268	74.90	20.32	267	43.01	12.76	267	159.35	31.29
2	111	72.68	20.52	109	42.65	13.25	109	160.57	29.15
3	84	91.95	13.47	84	63.95	8.88	83	191.83	18.06
4	269	77.61	18.78	267	44.05	13.47	266	164.01	29.54
5	122	68.57	23.70	124	41.39	11.87	123	156.91	28.43
6	289	76.97	17.50	286	45.97	12.37	286	167.04	27.34
7	234	77.62	20.60	230	47.13	13.76	231	164.24	30.56
8	293	85.23	15.28	289	52.94	11.44	289	177.27	22.02
9	77	52.83	24.32	75	34.21	12.09	74	137.86	37.89
10	127	74.27	20.51	124	44.13	12.91	124	167.29	25.82
11	283	72.47	23.39	279	48.42	13.09	278	173.75	26.32
12	231	73.90	20.28	227	44.28	11.92	228	156.42	26.35
13	80	65.70	26.82	75	41.92	13.52	75	149.37	31.50
14	311	86.19	12.86	313	54.54	11.55	312	180.27	23.47
15	79	75.49	18.64	79	42.99	12.86	79	162.33	27.52
16	134	76.07	21.99	131	45.24	14.14	132	165.76	27.06
17	311	64.95	23.28	308	42.76	14.09	307	149.92	30.03
Total	3303	75.68	21.25	3267	46.52	13.74	3263	165.16	29.71

Table 8

Table showing the mean and standard deviation of high school %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, lower level) for:

Junior Colleges

MALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
C 1	157	50.87	26.57	155	32.91	12.65	155	125.79	35.97
2	6	34.67	25.06	5	32.00	10.81	5	136.00	30.91
3	91	56.70	24.03	91	34.67	12.33	90	136.23	30.17
4	44	48.16	25.05	43	37.56	14.35	43	139.26	27.75
5	44	43.89	21.58	44	31.25	11.54	44	127.75	29.96
6	77	49.92	26.00	76	33.53	12.36	75	133.49	33.82
7	154	52.51	25.20	149	33.28	12.35	148	134.69	31.41
8	79	49.81	25.34	77	31.22	11.23	76	124.79	34.47
9	226	49.97	24.70	227	36.59	11.94	227	135.47	31.13
10	130	50.12	23.91	129	36.81	11.86	129	138.53	31.82
11	138	42.40	22.88	138	27.66	11.41	138	116.72	33.37
12	109	46.61	23.21	105	31.58	10.46	108	122.39	35.60
Total	1255	49.41	24.87	1239	33.50	12.32	1238	130.39	33.46

FEMALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
C 1	82	65.45	24.09	74	33.69	14.09	74	143.88	32.80
2	19	70.68	22.69	19	39.89	14.04	19	160.47	30.61
3	51	58.04	22.20	50	29.16	11.09	50	135.36	29.54
4	30	66.43	20.97	31	43.35	11.69	31	162.42	36.43
5	14	52.07	29.73	14	33.29	14.24	14	148.93	32.37
6	50	69.68	23.89	47	37.26	13.81	47	158.51	28.58
7	102	67.62	23.63	99	37.52	14.26	99	158.27	30.20
8	49	64.86	23.50	50	38.86	13.79	49	157.20	32.46
9	159	63.96	23.37	158	39.03	12.83	158	149.61	28.54
10	110	69.59	23.37	109	39.08	11.83	109	161.72	27.39
11	124	51.24	23.11	122	28.90	10.55	122	136.71	29.93
12	53	62.38	26.47	52	34.35	14.32	51	145.63	30.94
Total	843	63.39	24.41	825	35.96	13.49	823	152.32	31.69

Table 8
(Continued)

MALES AND FEMALES

Code	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
C 1	239	55.87	26.66	229	33.16	13.14	229	131.63	35.99
2	25	62.04	27.90	24	38.25	13.81	24	155.38	32.24
3	142	57.18	23.40	141	32.72	12.19	140	135.92	29.95
4	74	55.57	25.13	74	39.99	13.60	74	148.96	33.68
5	58	45.86	24.06	58	31.74	12.28	58	132.86	31.87
6	127	57.70	26.98	123	34.95	13.06	122	143.13	34.15
7	256	58.53	25.68	248	34.97	13.31	247	144.14	33.02
8	128	55.57	25.72	127	34.23	12.85	125	137.50	37.23
9	385	55.75	25.12	385	37.59	12.37	385	145.37	32.35
10	240	59.04	25.57	238	37.85	11.90	238	149.16	32.03
11	262	46.58	23.41	260	28.24	11.03	260	126.10	33.33
12	162	51.77	25.42	157	32.50	11.95	159	129.84	35.86
Total	2098	55.03	25.62	2064	34.48	12.86	2061	139.15	34.48

Table 9

Table showing the mean and standard deviation of high school %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, lower level) for:

State Colleges

MALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
D 1	313	54.98	24.08	308	32.59	11.66	308	128.75	30.89
2	915	47.79	24.79	901	32.43	11.76	899	128.98	32.04
3	268	52.38	24.56	264	32.81	11.72	266	131.42	30.35
4	560	50.12	24.03	555	31.52	11.13	556	125.80	32.63
5	207	49.95	23.11	198	30.79	10.79	196	123.94	34.15
Total	2263	50.10	24.45	2226	32.14	11.50	2225	128.00	32.10

FEMALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
D 1	190	71.00	20.23	185	37.79	12.56	186	154.99	29.83
2	769	65.10	23.06	759	36.78	12.29	757	154.79	27.71
3	204	72.11	21.02	208	37.82	12.76	208	159.08	26.71
4	524	68.07	22.82	516	37.36	12.74	516	154.71	29.05
5	159	68.40	23.13	157	36.41	12.11	157	153.96	29.53
Total	1846	67.61	22.64	1825	37.14	12.50	1824	155.21	28.40

MALES AND FEMALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
D 1	503	61.03	23.99	493	34.54	12.26	494	138.63	33.04
2	1684	55.69	25.52	1660	34.39	12.14	1656	140.78	32.77
3	472	60.90	25.08	472	35.02	12.44	474	143.56	31.91
4	1084	58.80	25.11	1071	34.33	12.28	1072	139.72	34.16
5	366	57.96	24.86	355	33.28	11.73	353	137.29	35.46
Total	4109	57.97	25.21	4051	34.39	12.21	4049	140.26	33.36

Table 10

Table showing the mean and standard deviation of high school %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, lower level) for:

High School Juniors

MALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
10% Sampling	2270	44.54	27.99	2240	31.40	14.20	2236	119.24	41.11

FEMALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
10% Sampling	2352	56.59	28.31	2332	33.76	14.88	2333	143.01	38.65

MALES AND FEMALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
10% Sampling	4622	50.67	28.78	4572	32.60	14.60	4569	131.38	41.61

Table 11

Proportion of Minnesota College Freshmen* (1963-64) at each ability level as shown by score on the Minnesota Scholastic Aptitude Test who were enrolled in types of colleges (MALES PLUS FEMALES)

MSAT Raw Score Category	MSAT %ile Score Category	All Minn Coll's No. in MSAT Category	Proportion of No. in MSAT Category				Cumulated Percent From High to Low Scores for:**				
			U of M w/D&Mor	4 Yr Lib Arts Coll's	State Coll's	Junior Coll's	All Minn Coll's	U of M w/D&Mor	4 Yr Lib Arts Coll's	State Coll's	Junior Coll's
65-78	97-100	809	45	44	7	4	5	6	11	1	1
60-64	93-96	834	45	38	10	7	10	12	21	4	4
56-59	87-92	816	48	32	13	7	16	18	28	6	7
53-55	83-86	717	45	29	17	9	20	23	35	9	10
50-52	78-82	857	43	30	17	10	26	29	43	13	14
48-49	74-77	605	43	25	19	13	29	33	47	16	18
45-47	67-73	971	46	22	21	11	35	40	54	21	23
43-44	63-66	746	46	25	19	10	40	45	60	24	26
41-42	57-62	724	44	22	23	11	45	50	64	28	30
39-40	52-56	817	42	21	24	13	50	55	70	33	35
37-38	47-51	872	42	19	27	12	55	61	75	39	40
35-36	41-46	794	44	16	27	13	61	67	78	44	45
33-34	35-40	804	38	18	31	13	66	71	83	50	51
31-32	30-34	850	37	15	32	16	71	76	87	57	57
29-30	25-29	768	33	14	36	16	76	80	90	64	63
27-28	20-24	767	37	12	35	16	81	85	93	71	69
25-26	16-19	695	33	12	38	17	85	88	95	77	75
22-24	10-15	912	32	8	40	20	91	93	97	86	84
19-21	6- 9	679	34	6	41	19	95	96	99	93	90
3-18	1- 5	763	31	6	37	26	100	100	100	100	100
Total %		100	40	21	26	13	100	100	100	100	100
No. in Group		15800	6418	3267	4051	2064	15800	6418	3267	4051	2064

* The numbers represent freshmen who entered Minnesota colleges in the fall of 1963, who graduated from Minnesota high schools in the spring of 1959-1963, and for whom Minnesota State-Wide Program test scores were available. All Minnesota colleges cooperated in the study from which these data were obtained.

** The numbers in each category were cumulated from the high category downwards and translated into a cumulated percent on the basis of the number in each college category (given at the bottom of each column).

Table 12

Proportion of Minnesota College Freshmen* (1963-64) at each ability level as shown by high school rank who were enrolled in types of colleges (MALES PLUS FEMALES)

HSR Category	All Minn Coll's No. in HSR Category	Proportion of No. in HSR Category				Cumulated Percent From High to Low HSR for:**				
		U of M w/D&Mor	4 Yr Lib Arts Coll's	State Coll's	Junior Coll's	All Minn Coll's	U of M w/D&Mor	4 Yr Lib Arts Coll's	State Coll's	Junior Coll's
98-100	877	41	42	12	5	5	6	11	3	2
95-97	830	43	37	14	6	11	11	20	5	4
92-94	843	43	33	17	7	16	17	29	9	7
89-91	840	44	28	20	8	21	22	36	13	11
86-88	771	44	27	20	9	26	28	42	17	14
83-85	790	43	27	21	9	31	33	49	21	17
80-82	711	46	22	21	11	35	38	53	24	21
77-79	737	42	23	24	11	40	43	59	28	25
73-76	886	44	20	26	10	45	49	64	34	29
70-72	644	41	20	25	14	50	53	68	38	33
66-69	816	41	20	25	14	55	58	73	43	39
61-65	915	40	17	29	14	60	63	78	49	45
57-60	700	41	17	27	15	65	68	81	54	50
52-56	847	38	16	30	16	70	73	85	60	56
47-51	767	40	16	29	15	75	78	89	66	62
41-46	847	36	13	34	17	80	82	92	73	69
34-40	821	35	11	35	19	85	87	95	80	76
27-33	767	37	7	37	19	90	91	97	87	83
17-26	816	33	8	36	23	95	95	99	94	92
1-16	787	40	6	32	22	100	100	100	100	100
Total %	100	40	21	26	13	100	100	100	100	100
No. in Group	16012	6502	3303	4109	2098	16012	6502	3303	4109	2098

*The numbers represent freshmen who entered Minnesota colleges in the fall of 1963, who graduated from Minnesota high schools in the spring of 1959-1963, and for whom Minnesota State-Wide Program test scores were available. All Minnesota colleges cooperated in the study from which these data were obtained.

**The numbers in each category were cumulated from the high category downwards and translated into a cumulated percent on the basis of the number in each college category(given at the bottom of each column).

Table 13

Proportion of University of Minnesota Freshmen* (1963-64)
at each ability level as shown by
score on the Minnesota Scholastic Aptitude Test
who were enrolled in University colleges
(MALES PLUS FEMALES)

MSAT Raw Score Category	MSAT %ile Score Category	All Minn Coll's No. in MSAT Category	Proportion of No. in MSAT Category							
			U of M w/D&Mor	CLA	IT	GC	UMD	Morris	Other U of M	U of M w/oD&Mor
65-78	97-100	809	45	28	12		3	1	1	41
60-64	93-96	834	45	29	8		3	2	3	40
56-59	87-92	816	48	32	9		3	2	2	43
53-55	83-86	717	46	29	7		5	2	3	39
50-52	78-82	857	44	28	6		5	1	4	38
48-49	74-77	605	44	26	6	1	6	2	3	36
45-47	67-73	971	46	27	6	1	5	2	5	39
43-44	63-66	746	46	28	5	1	6	2	4	38
41-42	57-62	724	45	27	4	2	7	2	3	36
39-40	52-56	817	43	25	5	1	6	2	4	35
37-38	47-51	872	43	23	5	4	6	2	3	35
35-36	41-46	794	45	23	4	5	8	2	3	35
33-34	35-40	804	38	18	2	7	5	2	4	31
31-32	30-34	850	37	13	2	11	5	2	4	30
29-30	25-29	768	34	13	2	10	4	2	3	28
27-28	20-24	767	37	9	1	15	6	1	5	30
25-26	16-19	695	33	7	1	16	6		3	27
22-24	10-15	912	32	4	1	19	4	1	3	27
19-21	6- 9	679	34	2		24	5	1	2	28
3-18	1- 5	763	31	1		25	3		2	28
Total %		100	41	20	4	7	5	2	3	34
No. in Group		15800	6418	3107	688	1095	791	229	508	5398

* The numbers represent freshmen who entered Minnesota colleges in the fall of 1963, who graduated from Minnesota high schools in the spring of 1959-1963, and for whom Minnesota State-Wide Program test scores were available. All Minnesota colleges cooperated in the study from which these data were obtained.

Table 14

Proportion of University of Minnesota Freshmen* (1963-64)
at each ability level as shown by high school rank
who were enrolled in University colleges
(MALES AND FEMALES)

HSR Category	All Minn Coll's No. in HSR Category	Proportion of No. in HSR Category							
		U of M w/D&Mor	CLA	IT	GC	UMD	Morris	Other U of M	U of M w/oD&Mor
98-100	877	41	20	11		4	2	3	35
95-97	830	43	27	6	0.4	5	1	4	38
92-94	843	43	24	8	0.4	5	2	3	36
89-91	840	44	25	8	0.1	5	2	4	37
86-88	771	44	26	7	0.3	6	2	4	37
83-85	790	43	25	6	0.3	5	2	4	35
80-82	711	46	26	7	1	6	3	4	37
77-79	737	42	26	5	1	5	2	3	35
73-76	886	44	26	7	1	5	1	4	38
70-72	644	41	23	6	2	5	2	5	35
66-69	816	41	24	4	2	6	1	5	34
61-65	915	40	20	4	4	5	1	4	33
57-60	700	41	21	3	5	5	2	5	34
52-56	847	38	18	2	6	6	2	4	30
47-51	767	40	18	2	9	5	1	5	34
41-46	847	37	14	2	14	4	0.4	3	33
34-40	821	34	10	0.5	17	5	1	1	29
27-33	767	37	10	1	20	5			31
17-26	816	33	4		24	4			29
1-16	787	40	3	0.3	32	4			36
Total %	100	41	20	5	7	5	1	3	35
N in Group	16012	6502	3127	723	1120	795	222	515	5485

* The numbers represent freshmen who entered Minnesota colleges in the fall of 1963, who graduated from Minnesota high schools in the spring of 1959-1963, and for whom Minnesota State-Wide Program test scores were available. All Minnesota colleges cooperated in the study from which these data were obtained.

Table 15

Distribution Across College Groups of
the Upper 11 Percent of Students on the
Minnesota Scholastic Aptitude Test
Broken Down By Single Score Categories

MSAT Raw Score Category	MSAT %ile Score Category	All Minn Coll's No. in MSAT Category	Percent of No. in MSAT Category			
			U of M w/D&Mor	4 Yr Lib Arts Coll's	State Coll's	Junior Coll's
60	91	202	48	35	10	7
61	92	178	43	36	13	8
62	93	169	44	37	11	8
63	94	144	42	42	9	7
64	95	141	48	39	8	5
65	96	116	48	36	10	6
66-67	97	212	44	43	10	3
68	98	102	49	37	7	7
69-71	99	225	45	46	5	4
72-up	100	154	40	55	4	1
Totals						
59-up	90-100	1643	45	41	9	5

Table 16

Distribution Across College Groups
of the Upper 11 Percent of Students on
High School Rank Broken Down
By One Percentile Categories

	HSR Category	All Minn Coll's No. in HSR Category	Percent of No. in HSR Category			
			U of M w/D & Mor	4 Yr Lib Arts Coll's	State Coll's	Junior Coll's
	95	300	47	33	14	6
	96	267	41	39	14	6
	97	263	42	38	14	6
	98	222	44	45	7	4
	99	190	47	40	8	5
	100	465	38	41	16	5
Totals	95-100	1707	42	40	13	5

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A SURVEY OF SCHOLASTIC APTITUDE IN MINNESOTA COLLEGES

by

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Student Counseling Bureau

This report is based on freshmen entering all Minnesota Colleges in the fall of 1963 who were tested as juniors in the 1959-63 State-Wide College Testing Program.

CONTENTS

INTRODUCTION

This survey encompasses data on tens of thousands of juniors and thousands of entering college freshmen and stands as testimony to long continued cooperative efforts of Minnesota high schools and colleges. It is based on 1963 entering freshmen to Minnesota colleges graduated from Minnesota high schools during the period 1959-1963 who had been tested during their junior year of high school.

When one considers that this is the sixth such survey in the ten-year period of junior testing (1954-1963); or if one considers that this is the twentieth survey since 1938 and that data are available since 1930 for some colleges, one can only be struck with the monumental cooperative effort of Minnesota high schools and colleges to identify and make educational provisions for Minnesota youth.

HISTORIC TURNING POINT

In more than one sense the Survey of 1963 Entering Freshmen to Minnesota Colleges marks a historic turning point. For one, it marks a decade of data based on college freshmen originally tested as high school juniors. Freshmen included in the 1954 report were the first tested as juniors. Prior to that year, high school seniors had been tested in this program. Secondly, it marks the end of 30 years of use of the Cooperative English Tests. One form or another of these English achievement tests has been in use since 1934.

But in a third sense this Survey is not only historic, but also timely. It represents the last of the "small" high school graduating classes covering the last entering freshmen class of the "pre-deluge" era. The 1964 group of Minnesota high school seniors represented a 20 percent increase over the number of 1963 seniors. Thus, this Survey will establish an important point of comparison to be used against data established for Minnesota high school seniors and college freshmen of 1964 and beyond. The next Survey will be based on 1965 Minnesota college freshmen and will permit the first state-wide look at the effect of the mounting number of high school graduates on both the number and quality of college entrants.

COMPLETENESS OF DATA

The bulk of the 1963 college freshmen covered in this report had been tested as high school juniors in the school year 1961-62. During that year 45,488 juniors were tested in the 570 high schools of the state. Of these high schools, 566 (99 percent) participated in the State-Wide Junior Testing Program. Data are thus available on over 99 percent of all juniors that year as the four schools not participating had very small enrollments. Data were obtained for eight colleges of the University, 17 liberal arts colleges, five state colleges and 12 junior colleges - 42 colleges in all. This represents all certified colleges in Minnesota that year.

The data below show how the number of entering freshmen for the current report (1963) compares to the number covered in the last Survey (1961 entering freshmen).

	Entering Freshmen for All Minnesota Colleges	
	1961	1963
Total Number of Entering Freshmen	19,806	20,301
Total Number of Freshmen from Minnesota High Schools	NA*	17,022
Number of These Graduating from Minnesota High Schools During 1959-1961**	15,446	
Number of These Graduating from Minnesota High Schools During 1959-1963**		16,442

*NA - Not Available

**The 1961 report covers three years of high school graduation (1959-1961); the 1963 report, five years (1959-1963).

The difference from 1961 to 1963 is not accounted for by the difference in the base number of years involved. The data actually reflect a slightly higher percent of 1963 high school graduates going on to college. There were fewer high school seniors in 1963 than in 1961. If we look at the figures for the corresponding years when these high school graduates were tested as juniors we find that 47,480 of the 1960 juniors (1961 seniors) were tested with MSAT whereas 45,488 of the 1962 juniors (1963 seniors) were tested with MSAT. Another figure to keep in mind here is that 62,455 of the 1964 juniors (1965 seniors) were tested with MSAT. As emphasized above, 1963 represents the last of the "small" high school graduating classes. The 1965 Survey will permit us to study what effect the burgeoning number of high school graduates has had on the number and quality of students attending college.

Three items of information about each student are available in the State-Wide Testing Program. These are the student's high school percentile rank (HSR), a measure of past achievement based on high school grades obtained through the junior year of high school and comparing him to students in his own class; his score on the Minnesota Scholastic Aptitude Test (MSAT), a measure of general scholastic aptitude; and his score on the Cooperative English Test (CET), a measure of competency in English. Means and standard deviations for each of these three variables are computed and reported by sex, by individual college, by type of college, for all colleges combined and for juniors of 1961-62 who furnished the bulk of the 1963 Minnesota college freshmen. Tables 1-3 show how complete these figures are for each group studied. Table 4 shows completeness of these measures for the total populations studied.

THE RESULTS

The data are presented in three different ways: The means and standard deviations are presented for each group as defined above (Tables 5-10); graphs comparing several selected groups on means, and ranges of HSR, MSAT and English test scores (Figures 1-3) are provided; and a break down by level

of HSR and MSAT scores shows the composition of 1963 Minnesota college freshmen by these levels (Tables 11-16). The tables giving means and standard deviations and the graphs for means and ranges have been used since these Surveys began in 1938. The analysis of college freshmen by HSR and MSAT level was first reported for the 1959 entering freshmen.

Tables 5-10, presenting the means and standard deviations by sex, college, type of college, total freshmen group and 1961-62 juniors tested in the State-Wide Program are self-explanatory. The student populations show large variability between sexes, across colleges, and across college groups on the three measures studied. For all freshmen studied the mean HSR was 64.58 (Table 5). However, the mean HSR for the major college groups ranges from 55.03 to 75.68. Similar marked variations are shown for MSAT and CET means. The means of individual colleges within a type of college also show considerable variation. For the liberal arts colleges, men and women combined, the total group HSR mean is 75.68, while HSR means for the colleges of this group range from 62.66 to 96.45. Similar marked fluctuations of the MSAT and CET means also appear. The state colleges are the least variable. The HSR mean for all state college freshmen is 57.97. For the five state colleges individually we find the HSR means range from 55.69 to 61.03. The standard deviations, when considered along with the mean scores, indicate that most colleges are getting both high and low ability students.

Figures 1-3 help illustrate this. A figure is presented for selected groups of colleges for each of the variables, HSR, MSAT, and CET. The wide portion of each bar represents the range of scores for approximately the middle two-thirds of the combined male and female group. The indentation shows the mean score for each group. The total range for each group can extend from the first to the 100th percentile (see scale at bottom of each figure).

To illustrate the appropriate interpretation of these graphs we can consider the bar in each figure for the Minnesota high school juniors group (top bar in each graph). In Figure 1 the mean HSR is about 50 with the middle two-thirds of the distribution ranging from an HSR of 22 to 79. Figure 2 shows that this group has a mean MSAT of 33 and the middle two-thirds of the scores range from an MSAT of 18 to an MSAT of 47. As shown in Figure 3, the CET mean is 131 and the middle two-thirds of the scores range from a CET of 90 to a CET of 173. For Figures 2 and 3, reference to the percentile rank scale at the bottom of each graph will locate each group in terms of a norm group of college freshmen previously tested as high school juniors. Thus, the high school junior group in Figure 2 has a MSAT percentile rank range from about 5 to 73 and in Figure 3, a percentile rank range of 4 to 82.

In Tables 11-16 we see the distribution of Minnesota high school graduates entering difference colleges in terms of ability and achievement level. In Table 11 the 15,800 entering freshmen to Minnesota colleges the fall of 1963 are divided as closely as possible into 20 groups of five percent each on the basis of their MSAT scores. Row 1 of this table includes only MSAT raw scores of 65-78. The 809 students in this group all fall at or above the 97th percentile rank. Forty five percent of them enrolled in some brach of the University of Minnesota, 44 percent in the liberal arts colleges, seven percent in the state colleges, and four percent in the junior colleges. The last five columns show a cumulated percent from high to low for each of the four college groups and the total group. Table 12 repeats this analysis for HSR. Tables 13 and 14 present data for the University of Minnesota broken down into respective colleges. Tables 15-16 repeat the analysis used in Tables 11 and 12 but in greater detail and based on approximately the upper ten percent of the students, Table 15 for MSAT and Table 16 for HSR.

Tables 11-16, along with tables of means and standard deviations and Figures 1-3 emphasize that every college group is getting both some of the very able and the less able Minnesota high school graduates. The high ability students are clustered more heavily in the University's College of Liberal Arts and Institute of Technology and in the private liberal arts colleges while the less able students are concentrated more heavily in the University's General College, the state colleges, and the junior colleges. It is encouraging to see that in the total educational picture for Minnesota that every college group is still affording channels for students with low indices of academic promise (lower third HSR and MSAT scores). It will be of great interest to see how this type of analysis of the Minnesota college entrant will change for the 1965 Minnesota college freshmen population. By the fall of 1965 Minnesota colleges will have had an opportunity to adopt selection procedures in response to the "tidal wave" of high school graduates which commenced in 1964. Also, the University's new admission policy for the College of Liberal Arts will be in effect.

TRENDS

It is always difficult to assess trends. One is never sure whether a given change, up or down, on the HSR or MSAT mean for a college or college group is a real change or represents a "chance" fluctuation for the given year only. In "Who Goes to College?", published in 1962, summary tables and graphs were presented for the State-Wide College Testing Program for the period 1938 to 1959 (1). When one adds the 1961 (4) and 1963 Survey data to the summary data presented in that publication, some trends do appear. Since 1954 both HSR and MSAT means for the private liberal arts college groups have shifted steadily upward. The other college groups' HSR means have held essentially steady for the ten-year period, 1954-1963. The interpretation of the HSR means is particularly difficult because the means are presented for total groups, that is, for men and women combined. We know women average significantly higher than men on this variable. Thus, in Table 10 we find HSR means of 44.5 for men and 56.6 for women for the total population of 1961-62 Minnesota high school juniors. An analysis of sex ratios for the different college groups over the 1954-1963 period indicated that the college groups have shown no trends in changing sex ratio except the University's College of Liberal Arts where the ratio of men to women has shifted from about 3:2 to 1:1.

A trend is definitely taking place on MSAT results. Since 1959 when MSAT data were first available for Minnesota college freshmen, mean MSAT scores for the various college groups have shifted upwards. However, this finding does not appear to mean that Minnesota colleges have become more selective on this variable. Mean MSAT scores for all juniors tested have shifted upwards an equal amount over the same period. This finding on an upward shift of MSAT scores during the past five years is consistent with similar observations by directors of other large scale testing programs*. A substantial gain on scores of both scholastic aptitude and achievement tests over the past five years has been reported by many test program directors. Elementary and secondary schools appear to be doing a better job than ever with their students.

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*Personal communications at November 1964 conference - The New York Invitational Conference on Testing Problems and the Princeton Conference of Testing Program Directors.

As in previous Surveys of Scholastic Aptitude certain findings reoccur. Women continue to show significantly higher mean scores on HSR and on the English test than do men. They continue to show a slightly higher mean MSAT score. Though some trends were noted above, in general the pattern across the college groups remains remarkably consistent. The University's College of Liberal Arts and the private liberal arts colleges continue to show about the same mean scores, a trend which appears to have begun with the 1959 entering freshmen group. State and junior college freshmen continue to have similar entering freshmen groups on the State-Wide measures.

Though the HSR mean for the liberal arts college group shows an upward trend and other college groups show no apparent trend, some individual colleges may have mean scores fluctuating markedly from the pattern of their college group. Such individual fluctuations must be interpreted by a given college in light of its own changing administrative procedures, increase or decrease in numbers enrolled, or chance fluctuations due to some non-recurring enrollment phenomena.

The 1959 study reported HSR and MSAT scores for slightly over 11,000 entering freshmen, the 1961 study for about 15,500 and the current 1963 study for about 16,500 entering freshmen. As pointed out above, the Surveys starting with the projected 1965 study will be of great importantance for assessing how the enrollment potential of the early "tidal wave" years has affected the quantity and quality of Minnesota college entrants.

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Table 1

Number of males who were graduated from Minnesota high schools in 1959-1963 and who were enrolled in each college and in each type of college with number and percent for whom specified scores were available.

MALES

	College Code	Total No.** Freshmen Males Enrolled	HSR* Data Available for: No.	HSR* Data Available for: %	MSAT* Data Available for: No.	MSAT* Data Available for: %	CET* Data Available for: No.	CET* Data Available for: %
4 Year Colleges	1	139	132	95	132	95	132	95
	2	55	51	93	50	91	50	91
	3	57	55	96	55	96	54	95
	4	123	116	94	117	95	117	95
	5	69	65	94	67	97	67	97
	6	129	127	98	126	98	124	96
	7	127	124	98	123	97	123	97
	8	132	129	98	129	98	129	98
	9	46	42	91	41	89	41	89
	10							
	11							
	12	231	231	100	227	98	228	99
	13	86	80	93	75	87	75	87
	14	149	148	99	149	100	148	99
	15							
	16							
	17	322	311	97	308	96	307	95
Total		1665	1611	97	1599	96	1595	96
Junior Colleges	1	165	157	95	155	94	155	94
	2	7	6	86	5	71	5	71
	3	99	91	92	91	92	90	91
	4	49	44	90	43	88	43	88
	5	44	44	100	44	100	44	100
	6	80	77	96	76	95	75	94
	7	160	154	96	149	93	148	93
	8	83	79	95	77	93	76	92
	9	240	226	94	227	95	227	95
	10	132	130	98	129	98	129	98
	11	144	138	96	138	96	138	96
	12	114	109	96	105	92	108	95
Total		1317	1255	95	1239	94	1238	94
State Colleges	1	332	313	94	308	93	308	93
	2	950	915	96	901	95	899	95
	3	280	268	96	264	94	266	95
	4	591	560	95	555	94	556	94
	5	215	207	96	198	92	196	91
Total		2368	2263	96	2226	94	2225	94
Grand Total, All Colleges Without Univ. of Minnesota		5350	5129	96	5064	94	5058	94

* HSR - High School Percentile Rank
MSAT - Minnesota Scholastic Aptitude Test
CET - Cooperative English Test

** Who were graduated in 1959, '60, '61, '62 and '63 from Minnesota high schools.

Table 2

Number of females who were graduated from Minnesota high schools in 1959-1963 and who were enrolled in each college and in each type of college with number and percent for whom specified scores were available.

FEMALES

	College Code	Total No. Freshmen Females Enrolled	HSR Data Available for: No.	HSR Data Available for: %	MSAT Data Available for: No.	MSAT Data Available for: %	CET Data Available for: No.	CET Data Available for: %
4 Year Colleges	1	137	136	99	135	99	135	99
	2	62	60	97	59	95	59	95
	3	29	29	100	29	100	29	100
	4	157	153	97	150	96	149	95
	5	60	57	95	57	95	56	93
	6	164	162	99	160	98	162	99
	7	110	110	100	107	97	108	98
	8	168	164	98	160	95	160	95
	9	38	35	92	34	89	33	87
	10	134	127	95	124	93	124	93
	11	289	283	98	279	97	278	96
	12							
	13							
	14	170	163	96	164	96	164	96
	15	83	79	95	79	95	79	95
	16	137	134	98	131	96	132	96
	17							
Total		1738	1692	97	1668	96	1668	96
Junior Colleges	1	82	82	100	74	90	74	90
	2	20	19	95	19	95	19	95
	3	53	51	96	50	94	50	94
	4	31	30	97	31	100	31	100
	5	14	14	100	14	100	14	100
	6	51	50	98	47	92	47	92
	7	104	102	98	99	95	99	95
	8	55	49	89	50	91	49	89
	9	160	159	99	158	99	158	99
	10	110	110	100	109	99	109	99
	11	128	124	97	122	95	122	95
	12	56	53	95	52	93	51	91
Total		864	843	98	825	95	823	95
State Colleges	1	197	190	96	185	94	186	94
	2	795	769	97	759	95	757	95
	3	216	204	94	208	96	208	96
	4	537	524	98	516	96	516	96
	5	165	159	96	157	95	157	95
Total		1910	1846	97	1825	96	1824	95
Grand Total, All Colleges Without Univ. of Minnesota		4512	4381	97	4318	96	4315	96

Table 3

Number of males and females who were graduated from Minnesota high schools in 1959-1963 and who were enrolled in each college and in each type of college, with number and percent for whom specified scores were available.

MALES AND FEMALES

	College Code	Total No. Freshmen Males & Females Enrolled	HSR Data Available for: No.	HSR Data Available for: %	MSAT Data Available for: No.	MSAT Data Available for: %	CET Data Available for: No.	CET Data Available for: %
4 Year College	1	276	268	97	267	97	267	97
	2	117	111	95	109	93	109	93
	3	86	84	98	84	98	83	97
	4	280	269	96	267	95	266	95
	5	129	122	95	124	96	123	95
	6	293	289	99	286	98	286	98
	7	237	234	99	230	97	231	97
	8	300	293	98	289	96	289	96
	9	84	77	92	75	89	74	88
	10	134	127	95	124	93	124	93
	11	289	283	98	279	97	278	96
	12	231	231	100	227	98	228	99
	13	86	80	93	76	88	75	87
	14	319	311	97	313	98	312	98
	15	83	79	95	79	95	79	95
	16	137	134	98	131	96	132	96
	17	322	311	97	308	96	307	95
Total		3403	3303	97	3268	96	3263	96
Junior Colleges	1	247	239	97	229	93	229	93
	2	27	25	93	24	89	24	89
	3	152	142	93	141	93	140	92
	4	80	74	93	74	93	74	93
	5	58	58	100	58	100	58	100
	6	131	127	97	123	94	122	93
	7	264	256	97	248	94	247	94
	8	138	128	93	127	92	125	91
	9	400	385	96	385	96	385	96
	10	242	240	99	238	98	238	98
	11	272	262	96	260	96	260	96
	12	170	162	95	157	92	159	94
Total		2181	2098	96	2064	95	2061	94
State Colleges	1	529	503	95	493	93	494	93
	2	1745	1684	97	1660	95	1656	95
	3	496	472	95	472	95	474	96
	4	1128	1084	96	1071	95	1072	95
	5	380	366	96	355	93	353	93
Total		4278	4109	96	4051	95	4049	95
Grand Total, All Colleges Without Univ. of Minnesota		9862	9510	96	9373	95	9383	95

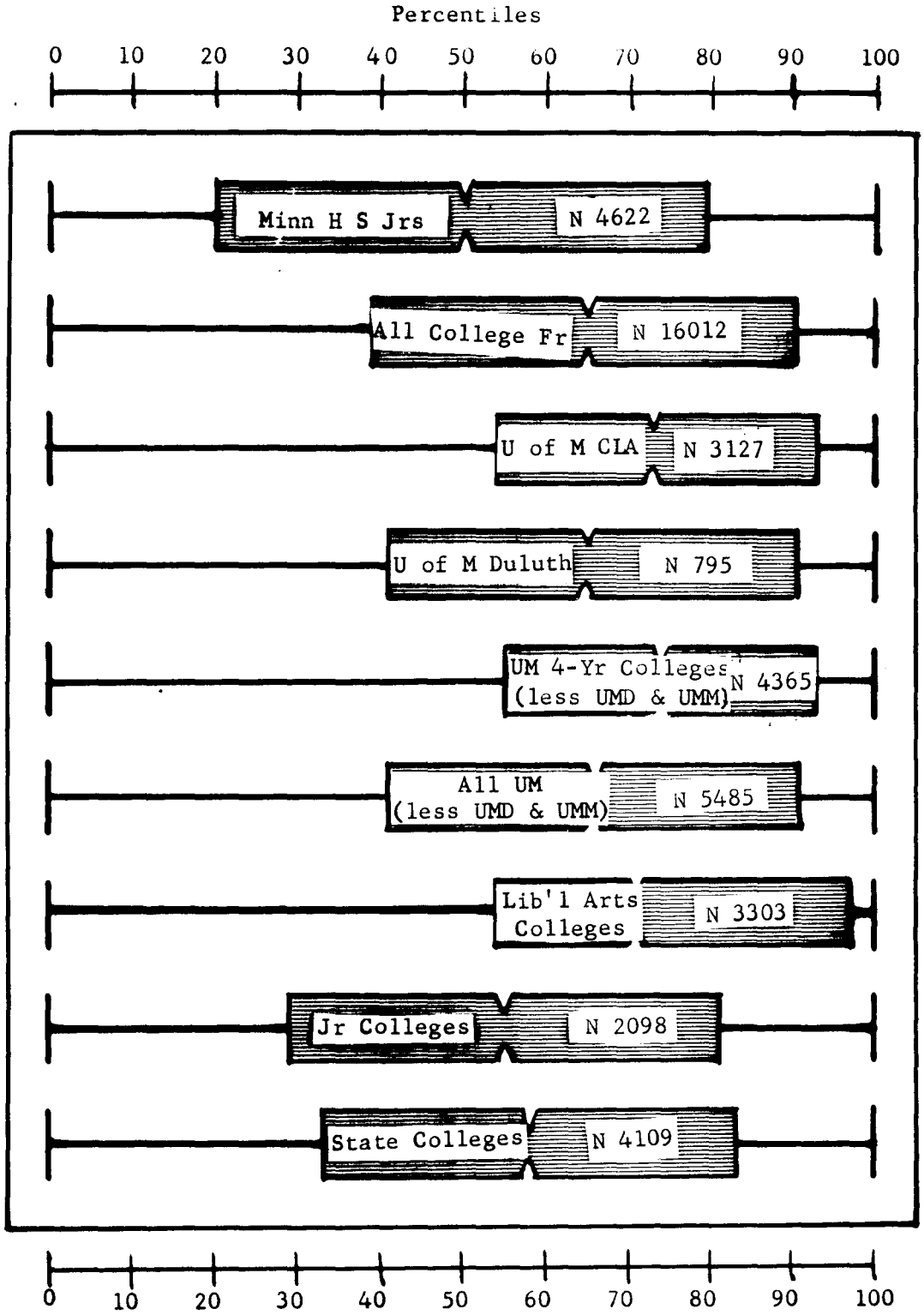
Table 4

The total number of entering freshmen in Minnesota colleges the fall of 1963, the number from Minnesota high schools, and the number graduating from Minnesota high schools in 1959-1963.

	Total No. Ent. Fr.	No. Ent. Fr. From Minn. H.S.	No. Ent. Fr. Grad. From Minn. H.S. in 1959-1963
All University Colleges	7184	6995	6581
Four Year Liberal Arts Colleges	5872	3434	3403
Junior Colleges	2396	2239	2180
State Colleges	4849	4354	4278
GRAND TOTAL			
Not including the University of Minnesota	13117	10027	9861
Including the University of Minnesota	20301	17022	16442

Figure 1

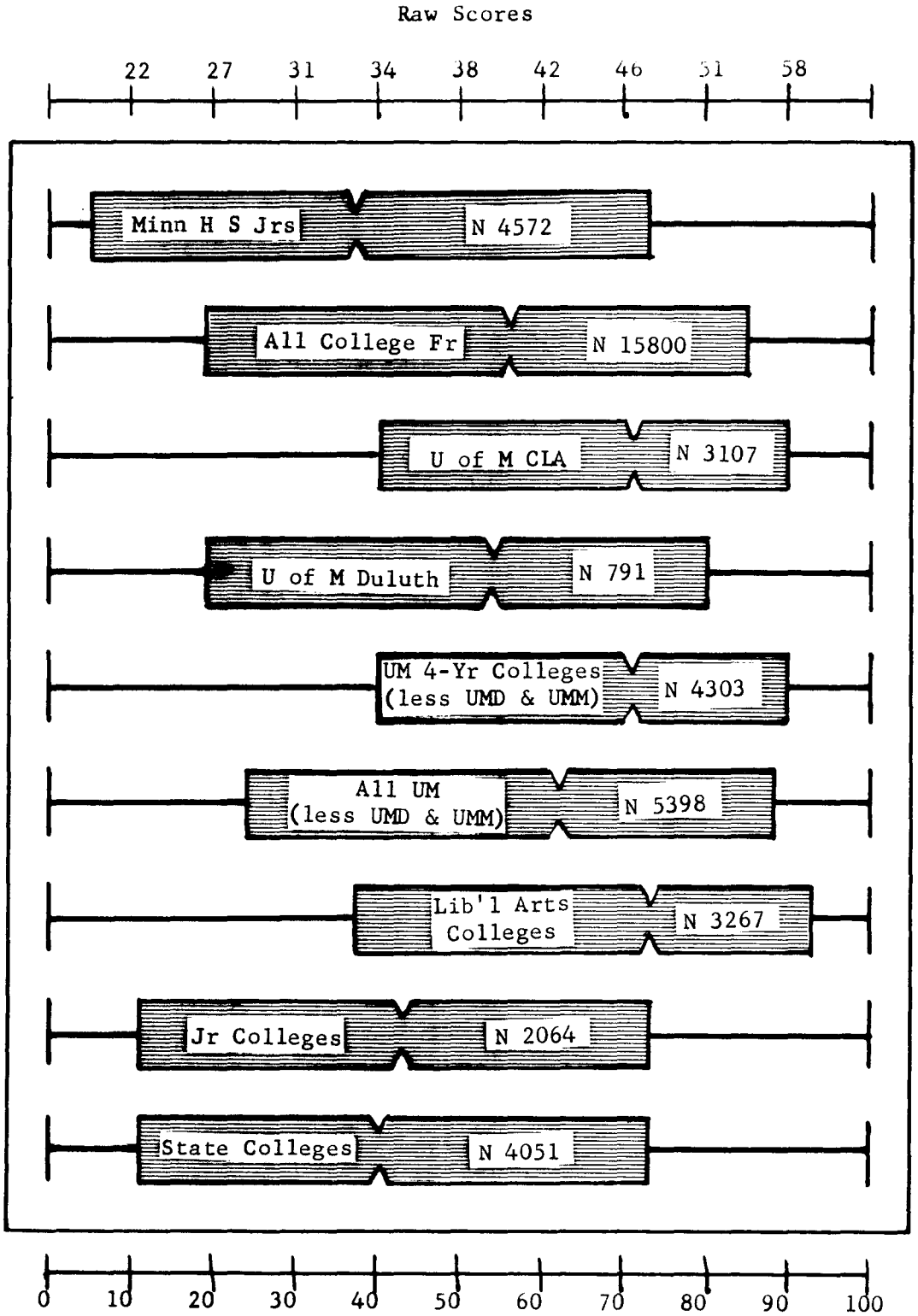
Variability of High School Percentiles of College Freshmen who Were Graduated From Minnesota High Schools and Who Entered Minnesota Colleges September, 1963.



The range of each group can extend from the first to the hundredth percentile. The wide portion of each group represents the middle two-thirds of freshmen of the group. The identation in the wide portion is the mean of the group.

Figure 2

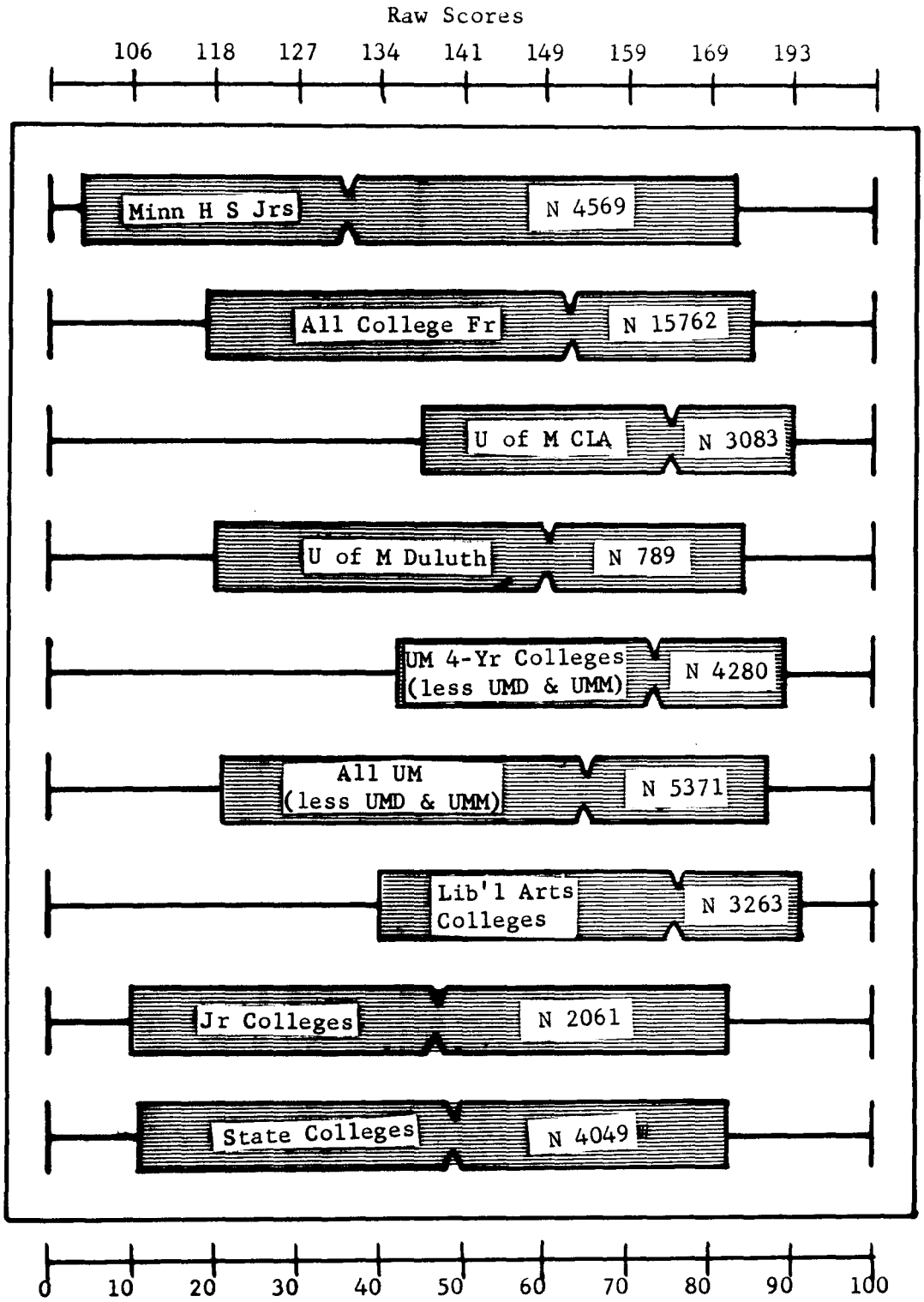
Variability of Minnesota Scholastic Aptitude Test Scores For College Freshmen Who Were Graduated From Minnesota High Schools and Who Entered Minnesota Colleges, September 1963.



The range of each group can extend from the first to the hundredth percentile. The wide portion of each group represents the middle two-thirds of the group. The identation in the wide portion is the mean of the group.

Figure 3

Variability of Cooperative English Test, Form Z, Lower Level, Total Score. College Freshmen Who Were Graduated From Minnesota High Schools and Who Entered Minnesota Colleges, September 1963.



The range of each group can extend from the first to the hundredth percentile. The wide portion of each group represents the middle two-thirds of the group. The identation in the wide portion is the mean of the group.

Table 5

Table showing the mean and standard deviation of High School %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, lower level) for:

A. University of Minnesota
B. Four Year Colleges
C. Junior Colleges
D. State Colleges

MALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A	3923	61.86	25.62	3893	39.83	13.74	3870	144.03	33.68
B	1611	70.87	22.58	1599	44.96	13.61	1595	156.36	30.47
C	1255	49.41	24.87	1239	33.50	12.32	1238	130.39	33.46
D	2263	50.10	24.45	2226	32.14	11.50	2225	128.00	32.10
Total	9052	58.80	25.92	8957	37.96	13.80	8928	140.35	34.25

FEMALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A	2579	72.80	22.47	2525	43.63	13.63	2519	165.61	28.20
B	1692	80.27	18.79	1668	48.02	13.69	1668	173.58	26.34
C	843	63.39	24.41	825	35.96	13.49	823	152.32	31.69
D	1846	67.61	22.64	1825	37.14	12.50	1824	155.21	28.40
Total	6960	72.10	22.63	6843	42.04	14.08	6834	163.18	29.30

MALES AND FEMALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A	6502	66.20	25.00	6418	41.33	13.82	6389	152.54	33.35
B	3303	75.68	21.25	3267	46.52	13.74	3263	165.16	29.71
C	2098	55.03	25.62	2064	34.48	12.86	2061	139.15	34.48
D	4109	57.97	25.21	4051	34.39	12.21	4049	140.26	33.36
Total	16012	64.58	25.41	15800	39.73	14.07	15762	150.25	34.13

TABLE 6

Table showing the mean and standard deviation of High School %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, Lower Level) for:

UNIVERSITY OF MINNESOTA

1. Agriculture
2. College of Liberal Arts
3. Dental Hygiene
4. Education
5. General College
6. Institute of Technology
7. U of M at Duluth
8. U of M at Morris

MALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A 1	262	69.57	17.15	261	38.55	12.19	261	141.21	31.08
2	1512	68.75	19.97	1521	44.62	11.19	1502	155.31	27.00
3									
4	42	62.79	15.47	41	32.12	11.86	41	130.00	29.94
5	815	30.96	17.89	804	25.24	7.26	800	109.58	27.84
6	703	80.27	16.04	672	49.29	12.27	673	163.44	26.02
7	444	58.03	24.94	443	36.63	11.84	442	137.66	30.30
8	145	71.90	17.21	151	40.89	11.55	151	155.11	23.69
Total	3923	61.86	25.62	3893	39.83	13.74	3870	144.03	33.68

FEMALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A 1	144	79.75	15.10	142	42.91	11.35	141	162.51	28.08
2	1615	77.43	18.11	1586	47.44	12.08	1581	172.68	23.08
3	19	80.84	14.51	17	46.65	9.81	17	177.88	17.24
4	48	70.90	16.76	47	37.87	11.58	48	158.35	22.98
5	305	38.29	20.73	291	25.39	7.34	291	127.15	28.35
6	20	93.95	6.26	16	57.50	10.40	16	187.50	16.48
7	351	74.81	20.53	348	41.28	12.46	347	163.93	24.79
8	77	83.94	14.21	78	45.96	12.84	78	176.15	20.84
Total	2579	72.80	22.47	2525	43.63	13.63	2519	165.61	28.20

Table 6
(Continued)

MALES AND FEMALES

Code	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
A 1	406	73.18	17.16	403	40.08	12.08	402	148.68	31.73
2	3127	73.23	19.52	3107	46.06	11.74	3083	164.22	26.53
3	19	80.84	14.51	17	46.65	9.81	17	177.88	17.24
4	90	67.11	16.67	88	35.19	12.06	89	145.29	29.96
5	1120	32.95	18.99	1095	25.28	7.28	1091	114.27	29.03
6	723	80.65	16.01	688	49.48	12.29	689	163.99	26.09
7	795	65.44	24.55	791	38.68	12.33	789	149.22	30.90
8	222	76.08	17.22	229	42.62	12.24	229	162.28	24.85
Total	6502	66.20	25.00	6418	41.33	13.82	6389	152.54	33.35

Table 7

Table showing the mean and standard deviation of high school %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, lower level) for:

Four Year Colleges

MALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
B 1	132	67.79	21.13	132	40.85	11.83	132	150.23	28.88
2	51	64.84	22.92	50	41.26	13.22	50	149.18	34.03
3	55	89.58	15.72	55	63.51	7.02	54	188.74	17.68
4	116	72.09	20.74	117	42.43	13.02	117	154.28	29.60
5	65	59.23	26.24	67	41.58	12.52	67	151.39	32.31
6	127	71.58	19.07	126	44.38	12.30	124	155.95	30.03
7	124	71.50	22.61	123	44.28	13.80	123	155.12	29.16
8	129	79.60	17.86	129	51.84	10.38	129	171.49	22.57
9	42	44.64	22.37	41	32.12	11.37	41	122.95	35.15
10									
11									
12	231	73.90	20.28	227	44.28	11.92	228	156.42	26.35
13	80	65.70	26.82	75	41.92	13.52	75	149.37	31.50
14	148	82.13	14.40	149	52.27	11.78	148	170.63	25.06
15									
16									
17	311	64.95	23.28	308	42.76	14.09	307	149.92	30.03
Total	1611	70.87	22.58	1599	44.96	13.61	1595	156.36	30.47

FEMALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
B 1	136	81.79	16.85	135	45.13	13.27	135	168.27	30.98
2	60	79.35	15.35	59	43.83	13.16	59	170.22	19.64
3	29	96.45	5.11	29	64.79	11.57	29	197.59	17.33
4	153	81.80	15.92	150	45.32	13.68	149	171.64	27.16
5	57	79.23	14.29	57	41.16	11.06	56	163.52	21.13
6	162	81.20	14.84	160	47.21	12.28	162	175.53	21.53
7	110	84.52	15.38	107	50.41	12.96	108	174.63	28.74
8	164	89.66	11.03	160	53.84	12.15	160	181.94	20.42
9	35	62.66	22.89	34	36.74	12.46	33	156.39	32.63
10	127	74.27	20.51	124	44.13	12.91	124	167.29	25.82
11	283	72.47	23.39	279	48.42	13.09	278	173.75	26.32
12									
13									
14	163	89.88	9.94	164	56.60	10.93	164	188.98	17.94
15	79	75.49	18.64	79	42.99	12.86	79	162.33	27.52
16	134	76.07	21.99	131	45.24	14.14	132	165.76	27.06
17									
Total	1692	80.27	18.79	1668	48.02	13.69	1668	173.58	26.34

Table 7
(Continued)

MALES AND FEMALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
Code	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
B 1	268	74.90	20.32	267	43.01	12.76	267	159.35	31.29
2	111	72.68	20.52	109	42.65	13.25	109	160.57	29.15
3	84	91.95	13.47	84	63.95	8.88	83	191.83	18.06
4	269	77.61	18.78	267	44.05	13.47	266	164.01	29.54
5	122	68.57	23.70	124	41.39	11.87	123	156.91	28.43
6	289	76.97	17.50	286	45.97	12.37	286	167.04	27.34
7	234	77.62	20.60	230	47.13	13.76	231	164.24	30.56
8	293	85.23	15.28	289	52.94	11.44	289	177.27	22.02
9	77	52.83	24.32	75	34.21	12.09	74	137.86	37.89
10	127	74.27	20.51	124	44.13	12.91	124	167.29	25.82
11	283	72.47	23.39	279	48.42	13.09	278	173.75	26.32
12	231	73.90	20.28	227	44.28	11.92	228	156.42	26.35
13	80	65.70	26.82	75	41.92	13.52	75	149.37	31.50
14	311	86.19	12.86	313	54.54	11.55	312	180.27	23.47
15	79	75.49	18.64	79	42.99	12.86	79	162.33	27.52
16	134	76.07	21.99	131	45.24	14.14	132	165.76	27.06
17	311	64.95	23.28	308	42.76	14.09	307	149.92	30.03
Total	3303	75.68	21.25	3267	46.52	13.74	3263	165.16	29.71

Table 8

Table showing the mean and standard deviation of high school %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, lower level) for:

Junior Colleges

MALES

Code	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
C 1	157	50.87	26.57	155	32.91	12.65	155	125.79	35.97
2	6	34.67	25.06	5	32.00	10.81	5	136.00	30.91
3	91	56.70	24.03	91	34.67	12.33	90	136.23	30.17
4	44	48.16	25.05	43	37.56	14.35	43	139.26	27.75
5	44	43.89	21.58	44	31.25	11.54	44	127.75	29.96
6	77	49.92	26.00	76	33.53	12.36	75	133.49	33.82
7	154	52.51	25.20	149	33.28	12.35	148	134.69	31.41
8	79	49.81	25.34	77	31.22	11.23	76	124.79	34.47
9	226	49.97	24.70	227	36.59	11.94	227	135.47	31.13
10	130	50.12	23.91	129	36.81	11.86	129	138.53	31.82
11	138	42.40	22.88	138	27.66	11.41	138	116.72	33.37
12	109	46.61	23.21	105	31.58	10.46	108	122.39	35.60
Total	1255	49.41	24.87	1239	33.50	12.32	1238	130.39	33.46

FEMALES

Code	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
C 1	82	65.45	24.09	74	33.69	14.09	74	143.88	32.80
2	19	70.68	22.69	19	39.89	14.04	19	160.47	30.61
3	51	58.04	22.20	50	29.16	11.09	50	135.36	29.54
4	30	66.43	20.97	31	43.35	11.69	31	162.42	36.43
5	14	52.07	29.73	14	33.29	14.24	14	148.93	32.37
6	50	69.68	23.89	47	37.26	13.81	47	158.51	28.58
7	102	67.62	23.63	99	37.52	14.26	99	158.27	30.20
8	49	64.86	23.50	50	38.86	13.79	49	157.20	32.46
9	159	63.96	23.37	158	39.03	12.83	158	149.61	28.54
10	110	69.59	23.37	109	39.08	11.83	109	161.72	27.39
11	124	51.24	23.11	122	28.90	10.55	122	136.71	29.93
12	53	62.38	26.47	52	34.35	14.32	51	145.63	30.94
Total	843	63.39	24.41	825	35.96	13.49	823	152.32	31.69

Table 8
(Continued)

MALES AND FEMALES

Code	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
C 1	239	55.87	26.66	229	33.16	13.14	229	131.63	35.99
2	25	62.04	27.90	24	38.25	13.81	24	155.38	32.24
3	142	57.18	23.40	141	32.72	12.19	140	135.92	29.95
4	74	55.57	25.13	74	39.99	13.60	74	148.96	33.68
5	58	45.86	24.06	58	31.74	12.28	58	132.86	31.87
6	127	57.70	26.98	123	34.95	13.06	122	143.13	34.15
7	256	58.53	25.68	248	34.97	13.31	247	144.14	33.02
8	128	55.57	25.72	127	34.23	12.85	125	137.50	37.23
9	385	55.75	25.12	385	37.59	12.37	385	145.37	32.35
10	240	59.04	25.57	238	37.85	11.90	238	149.16	32.03
11	262	46.58	23.41	260	28.24	11.03	260	126.10	33.33
12	162	51.77	25.42	157	32.50	11.95	159	129.84	35.86
Total	2098	55.03	25.62	2064	34.48	12.86	2061	139.15	34.48

Table 9

Table showing the mean and standard deviation of high school %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, lower level) for:

State Colleges

MALES

Code	High School %iles No.	Mean	S.D.	Raw Score on Minn. Schol. Apt. Test No.	Mean	S.D.	Raw Score on Coop. English Test No.	Mean	S.D.
D 1	313	54.98	24.08	308	32.59	11.66	308	128.75	30.89
2	915	47.79	24.79	901	32.43	11.76	899	128.98	32.04
3	268	52.38	24.56	264	32.81	11.72	266	131.42	30.35
4	560	50.12	24.03	555	31.52	11.13	556	125.80	32.63
5	207	49.95	23.11	198	30.79	10.79	196	123.94	34.15
Total	2263	50.10	24.45	2226	32.14	11.50	2225	128.00	32.10

FEMALES

Code	High School %iles No.	Mean	S.D.	Raw Score on Minn. Schol. Apt. Test No.	Mean	S.D.	Raw Score on Coop. English Test No.	Mean	S.D.
D 1	190	71.00	20.23	185	37.79	12.56	186	154.99	29.83
2	769	65.10	23.06	759	36.78	12.29	757	154.79	27.71
3	204	72.11	21.02	208	37.82	12.76	208	159.08	26.71
4	524	68.07	22.82	516	37.36	12.74	516	154.71	29.05
5	159	68.40	23.13	157	36.41	12.11	157	153.96	29.53
Total	1846	67.61	22.64	1825	37.14	12.50	1824	155.21	28.40

MALES AND FEMALES

Code	High School %iles No.	Mean	S.D.	Raw Score on Minn. Schol. Apt. Test No.	Mean	S.D.	Raw Score on Coop. English Test No.	Mean	S.D.
D 1	503	61.03	23.99	493	34.54	12.26	494	138.63	33.04
2	1684	55.69	25.52	1660	34.39	12.14	1656	140.78	32.77
3	472	60.90	25.08	472	35.02	12.44	474	143.56	31.91
4	1084	58.80	25.11	1071	34.33	12.28	1072	139.72	34.16
5	366	57.96	24.86	355	33.28	11.73	353	137.29	35.46
Total	4109	57.97	25.21	4051	34.39	12.21	4049	140.26	33.36

Table 10

Table showing the mean and standard deviation of high school %iles, Minnesota Scholastic Aptitude Test and Cooperative English Test (Form Z, lower level) for:

High School Juniors

MALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
10% Sampling	2270	44.54	27.99	2240	31.40	14.20	2236	119.24	41.11

FEMALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
10% Sampling	2352	56.59	28.31	2332	33.76	14.88	2333	143.01	38.65

MALES AND FEMALES

	High School %iles			Raw Score on Minn. Schol. Apt. Test			Raw Score on Coop. English Test		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
10% Sampling	4622	50.67	28.78	4572	32.60	14.60	4569	131.38	41.61

Table 11

Proportion of Minnesota College Freshmen* (1963-64) at each ability level as shown by score on the Minnesota Scholastic Aptitude Test who were enrolled in types of colleges (MALES PLUS FEMALES)

MSAT Raw Score Category	MSAT %ile Score Category	All Minn Coll's No. in MSAT Category	Proportion of No. in MSAT Category				Cumulated Percent From High to Low Scores for:**				
			U of M w/D&Mor	4 Yr Lib Arts Coll's	State Coll's	Junior Coll's	All Minn Coll's	U of M w/D&Mor	4 Yr Lib Arts Coll's	State Coll's	Junior Coll's
65-78	97-100	809	45	44	7	4	5	6	11	1	1
60-64	93-96	834	45	38	10	7	10	12	21	4	4
56-59	87-92	816	48	32	13	7	16	18	28	6	7
53-55	83-86	717	45	29	17	9	20	23	35	9	10
50-52	78-82	857	43	30	17	10	26	29	43	13	14
48-49	74-77	695	43	25	19	13	29	33	47	16	18
45-47	67-73	971	46	22	21	11	35	40	54	21	23
43-44	63-66	746	46	25	19	10	40	45	60	24	26
41-42	57-62	724	44	22	23	11	45	50	64	28	30
39-40	52-56	817	42	21	24	13	50	55	70	33	35
37-38	47-51	872	42	19	27	12	55	61	75	39	40
35-36	41-46	794	44	16	27	13	61	67	78	44	45
33-34	35-40	804	38	18	31	13	66	71	83	50	51
31-32	30-34	850	37	15	32	16	71	76	87	57	57
29-30	25-29	768	33	14	36	16	76	80	90	64	63
27-28	20-24	767	37	12	35	16	81	85	93	71	69
25-26	16-19	695	33	12	38	17	85	88	95	77	75
22-24	10-15	912	32	8	40	20	91	93	97	86	84
19-21	6- 9	679	34	6	41	19	95	96	99	93	90
3-18	1- 5	763	31	6	37	26	100	100	100	100	100
Total %		100	40	21	26	13	100	100	100	100	100
No. in Group		15800	6418	3267	4051	2064	15800	6418	3267	4051	2064

* The numbers represent freshmen who entered Minnesota colleges in the fall of 1963, who graduated from Minnesota high schools in the spring of 1959-1963, and for whom Minnesota State-Wide Program test scores were available. All Minnesota colleges cooperated in the study from which these data were obtained.

** The numbers in each category were cumulated from the high category downwards and translated into a cumulated percent on the basis of the number in each college category (given at the bottom of each column).

Table 12

Proportion of Minnesota College Freshmen* (1963-64) at each ability level as shown by high school rank who were enrolled in types of colleges (MALES PLUS FEMALES)

HSR Category	All Minn Coll's No. in HSR Category	Proportion of No. in HSR Category				Cumulated Percent From High to Low HSR for:**				
		U of M w/D&Mor	4 Yr Lib Arts Coll's	State Coll's	Junior Coll's	All Minn Coll's	U of M w/D&Mor	4 Yr Lib Arts Coll's	State Coll's	Junior Coll's
98-100	877	41	42	12	5	5	6	11	3	2
95-97	830	43	37	14	6	11	11	20	5	4
92-94	843	43	33	17	7	16	17	29	9	7
89-91	840	44	28	20	8	21	22	36	13	11
86-88	771	44	27	20	9	26	28	42	17	14
83-85	790	43	27	21	9	31	33	49	21	17
80-82	711	46	22	21	11	35	38	53	24	21
77-79	737	42	23	24	11	40	43	59	28	25
73-76	886	44	20	26	10	45	49	64	34	29
70-72	644	41	20	25	14	50	53	68	38	33
66-69	816	41	20	25	14	55	58	73	43	39
61-65	915	40	17	29	14	60	63	78	49	45
57-60	700	41	17	27	15	65	68	81	54	50
52-56	847	38	16	30	16	70	73	85	60	56
47-51	767	40	16	29	15	75	78	89	66	62
41-46	847	36	13	34	17	80	82	92	73	69
34-40	821	35	11	35	19	85	87	95	80	76
27-33	767	37	7	37	19	90	91	97	87	83
17-26	816	33	8	36	23	95	95	99	94	92
1-16	787	40	6	32	22	100	100	100	100	100
Total %	100	40	21	26	13	100	100	100	100	100
No. in Group	16012	6502	3303	4109	2098	16012	6502	3303	4109	2098

*The numbers represent freshmen who entered Minnesota colleges in the fall of 1963, who graduated from Minnesota high schools in the spring of 1959-1963, and for whom Minnesota State-Wide Program test scores were available. All Minnesota colleges cooperated in the study from which these data were obtained.

**The numbers in each category were cumulated from the high category downwards and translated into a cumulated percent on the basis of the number in each college category(given at the bottom of each column).

Table 13

Proportion of University of Minnesota Freshmen* (1963-64)
at each ability level as shown by
score on the Minnesota Scholastic Aptitude Test
who were enrolled in University colleges
(MALES PLUS FEMALES)

MSAT Raw Score Category	MSAT %ile Score Category	All Minn Coll's No. in MSAT Category	Proportion of No. in MSAT Category							
			U of M w/D&Mor	CLA	IT	GC	UMD	Morris	Other U of M	U of M w/oD&Mor
65-78	97-100	809	45	28	12		3	1	1	41
60-64	93-96	834	45	29	8		3	2	3	40
56-59	87-92	816	48	32	9		3	2	2	43
53-55	83-86	717	46	29	7		5	2	3	39
50-52	78-82	857	44	28	6		5	1	4	38
48-49	74-77	605	44	26	6	1	6	2	3	36
45-47	67-73	971	46	27	6	1	5	2	5	39
43-44	63-66	746	46	28	5	1	6	2	4	38
41-42	57-62	724	45	27	4	2	7	2	3	36
39-40	52-56	817	43	25	5	1	6	2	4	35
37-38	47-51	872	43	23	5	4	6	2	3	35
35-36	41-46	794	45	23	4	5	8	2	3	35
33-34	35-40	804	38	18	2	7	5	2	4	31
31-32	30-34	850	37	13	2	11	5	2	4	30
29-30	25-29	768	34	13	2	10	4	2	3	28
27-28	20-24	767	37	9	1	15	6	1	5	30
25-26	16-19	695	33	7	1	16	6		3	27
22-24	10-15	912	32	4	1	19	4	1	3	27
19-21	6- 9	679	34	2		24	5	1	2	28
3-18	1- 5	763	31	1		25	3		2	28
Total %		100	41	20	4	7	5	2	3	34
No. in Group		15800	6418	3107	688	1095	791	229	508	5398

* The numbers represent freshmen who entered Minnesota colleges in the fall of 1963, who graduated from Minnesota high schools in the spring of 1959-1963, and for whom Minnesota State-Wide Program test scores were available. All Minnesota colleges cooperated in the study from which these data were obtained.

Table 14

Proportion of University of Minnesota Freshmen* (1963-64)
at each ability level as shown by high school rank
who were enrolled in University colleges
(MALES AND FEMALES)

HSR Category	All Minn Coll's No. in HSR Category	Proportion of No. in HSR Category							
		U of M w/D&Mor	CLA	IT	GC	UMD	Morris	Other U of M	U of M w/oD&Mor
98-100	877	41	20	11		4	2	3	35
95-97	830	43	27	6	0.4	5	1	4	38
92-94	843	43	24	8	0.4	5	2	3	36
89-91	840	44	25	8	0.1	5	2	4	37
86-88	771	44	26	7	0.3	6	2	4	37
83-85	790	43	25	6	0.3	5	2	4	35
80-82	711	46	26	7	1	6	3	4	37
77-79	737	42	26	5	1	5	2	3	35
73-76	886	44	26	7	1	5	1	4	38
70-72	644	41	23	6	2	5	2	5	35
66-69	816	41	24	4	2	6	1	5	34
61-65	915	40	20	4	4	5	1	4	33
57-60	700	41	21	3	5	5	2	5	34
52-56	847	38	18	2	6	6	2	4	30
47-51	767	40	18	2	9	5	1	5	34
41-46	847	37	14	2	14	4	0.4	3	33
34-40	821	34	10	0.5	17	5	1	1	29
27-33	767	37	10	1	20	5			31
17-26	816	33	4		24	4			29
1-16	787	40	3	0.3	32	4			36
Total %	100	41	20	5	7	5	1	3	35
N in Group	16012	6502	3127	723	1120	795	222	515	5485

* The numbers represent freshmen who entered Minnesota colleges in the fall of 1963, who graduated from Minnesota high schools in the spring of 1959-1963, and for whom Minnesota State-Wide Program test scores were available. All Minnesota colleges cooperated in the study from which these data were obtained.

Table 15

Distribution Across College Groups of
the Upper 11 Percent of Students on the
Minnesota Scholastic Aptitude Test
Broken Down By Single Score Categories

MSAT Raw Score Category	MSAT %ile Score Category	All Minn Coll's No. in MSAT Category	Percent of No. in MSAT Category			
			U of M w/D&Mor	4 Yr Lib Arts Coll's	State Coll's	Junior Coll's
60	91	202	48	35	10	7
61	92	178	43	36	13	8
62	93	169	44	37	11	8
63	94	144	42	42	9	7
64	95	141	48	39	8	5
65	96	116	48	36	10	6
66-67	97	212	44	43	10	3
68	98	102	49	37	7	7
69-71	99	225	45	46	5	4
72-up	100	154	40	55	4	1
Totals						
59-up	90-100	1643	45	41	9	5

Table 16

Distribution Across College Groups
of the Upper 11 Percent of Students on
High School Rank Broken Down
By One Percentile Categories

	HSR Category	All Minn Coll's No. in HSR Category	Percent of No. in HSR Category			
			U of M w/D & Mor	4 Yr Lib Arts Coll's	State Coll's	Junior Coll's
	95	300	47	33	14	6
	96	267	41	39	14	6
	97	263	42	38	14	6
	98	222	44	45	7	4
	99	190	47	40	8	5
	100	465	38	41	16	5
Totals	95-100	1707	42	40	13	5