

A DESCRIPTIVE AND COMPARATIVE STUDY OF A GROUP OF
COLLEGE FRESHMEN ENROLLED IN A SPECIAL COURSE:
"EFFECTIVE READING AND STUDY HABITS"

A Dissertation
Presented to
the Faculty of the Department of Psychology
University of Houston

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

by
Juanita C. Bussell

June, 1966

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AN ABSTRACT

The purpose of this study was two-fold: (1) To describe a group of college students enrolled in a special course, "Effective Reading and Study," and (2) to compare this group on a number of variables with the freshmen students of which they were a sample. Answers were sought to such questions as: What are the main characteristics of the students who completed this special course? What are their reading habits? What is the distribution of grades in the course? How many work at jobs? What are their majors? Are they enrolled one year later? How do they compare with the freshmen group of which they are a sample?

The subjects were 269 freshmen, 158 males and 111 females, who took the course for credit, who completed all requirements of the course and who were assigned a final letter grade of A, B, C, D, or F. All subjects had taken the Scholastic Aptitude Test and had completed a personal data inventory which supplied general, educational, and counseling information.

Descriptive measures employed in the study included data obtained from the personal data inventories, grade point averages at the end of the first semester in college, the grade earned in "Effective Reading and Study," the choice of major field of study, the number still enrolled in the University of Houston in the Fall Semester, 1965, Scholastic Aptitude Test scores of the College Entrance Examination

Board, and ranks in high school graduating classes. Tabulations were made of all these data.

Performances of male and female subjects on the SAT-V, SAT-M and SAT-Total were compared. Female subjects earned higher mean scores on both the SAT-V and the SAT-Total than male subjects, while males scored higher than females on the SAT-M. The t test was used to estimate the reliability of obtained differences between mean scores of the two sexes. Differences between means on all three distributions were found to be significant at the .05 level of confidence or lower. These differences were in favor of males on the SAT-M, and of females on the SAT-V, and SAT-Total.

The subjects were again compared with respect to ranks in their high school graduating classes. Mean scores which equaled or exceeded the national norms for the SAT were those of females on the SAT-V who ranked in the lowest quarter, and those of males on the SAT-M who ranked in the top quarter of their high school graduating classes. All other mean scores were below the national average.

A comparison of high school ranks showed higher percentages of the entering freshmen group than of the sample group ranking in the top quarter of their high school classes. Comparisons of performances on the SAT and of high school ranks between the subjects and the entering freshmen group showed that differences in percentages scoring above 1,000 on

the SAT-Total and ranking in the top quarter of their high school classes were all in favor of the entering freshmen group.

More of the entering freshmen group scored above the national mean of 500 on both the SAT-V and the SAT-M. Differences between means of the two groups for both distributions of scores were found, by application of the t test, to be significant at the .0005 level of confidence. Only 5 times in 10,000 would each of these differences not be a true difference.

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CHAPTER I

THE PROBLEM

Introduction

"Effective Reading and Study," a freshman course in developmental reading at the University of Houston (Psychology 131), has been offered each semester since the Reading Clinic was founded in 1952. The course was designed to assist those students whose achievement in college was handicapped by lack of reading proficiency and other effective methods of study. Even though it was especially geared to the needs of the college freshman, students of all classifications were permitted to enroll in the course each semester.

Since it is a 3-hour credit course, reading classes met three hours each week. Two hours were spent in lecture and discussion sessions and one hour in laboratory practice with various mechanical devices to increase reading rate. All students were encouraged to return to the laboratory for further practice during their free time or for individual counseling with respect to study schedules or other specific reading and study problems.

In order that each student receive maximum benefit from both lecture and laboratory sessions, group sizes were limited to a maximum of 25 students. This restriction in class size enabled instructors to lend more individual attention to each student and to become better acquainted with his specific needs and goals.

Since 1952 there had been a growing demand on the part of students for help in removing various deficiencies in reading skills in order that they might more effectively compete in other college courses.

Beginning with the Fall Semester, 1964, requirements for admission to the University of Houston had been raised; those students whose academic backgrounds were exceptionally weak were no longer admitted. Yet, there was again an increase in the number of students who elected to take "Effective Reading and Study" that semester.

Statement of the Problem

The purpose of this study was two-fold: (1) To describe a group of college students enrolled in a special course; "Effective Reading and Study," and (2) to compare this group on a number of variables with the freshmen students of which they were a sample. Answers were sought to such questions as: What are the main characteristics of the students who completed this special course? What are their reading habits? What is the distribution of grades in the course? How many work at jobs? What are their majors? Are they enrolled one year later? How do they compare with the freshmen group of which they are a sample?

Need for Study

At the time of this investigation, no data had been collected to determine specific characteristics of students

taking the course, "Effective Reading and Study," nor to ascertain their representativeness of the freshmen student groups of which they were samples.

It was believed that this investigation would facilitate decisions in future planning with respect to materiel and instructional programs which would better equip the college freshman for the successful accomplishment of those learning tasks with which he would be faced in completing his college education.

Limitations of the Study

This undertaking was in no way an attempt to evaluate the course, "Effective Reading and Study." The significant questions under consideration pertained to the description of the sample group and to its representativeness of the scholastic aptitude and achievement level of the entering freshmen enrollment, in the Fall Semester, 1964.

No student of sophomore classification or higher, and no student who failed to complete all requirements for "Effective Reading and Study," was included in this investigation. The sample was further limited by the lack of availability of records of achievement on all students. Those students who had entered the university in the summer of 1964, or earlier, had not been required to take the same entrance tests.

CHAPTER II

SURVEY OF LITERATURE

The literature abounds with descriptions of both standardized and non-standardized reading tests and suggestions for their application in college and adult reading training programs. However, there is a paucity of studies reported which have dealt with the evaluation of achievement, prior to college entrance, of students participating in a college reading course.

A survey of the literature disclosed only three studies (15, 16, 17) using the Scholastic Aptitude Test (of the College Entrance Examination Board) in evaluations of groups of college reading students. All three studies were concerned with the degree of improvement in reading skills as a result of reading training.

Pallone (1961) studied the effects of a developmental reading course upon SAT-V scores. Schneyer (1963) related reading and other scores of a group of college students in a reading course to progress made in reading improvement. Again, using the SAT-V, Schneyer (1964) related verbal scores and reading post-test scores. No studies were reported involving reading students which attempted to relate evaluations of their scholastic aptitude with the larger student body.

Up to the time of the present study, no research had been conducted at the University of Houston to ascertain the scholastic ability level of students enrolling in the "Effective Reading and Study" course. While pre- and post-tests of reading speed, reading comprehension, and vocabulary level have been administered to all reading students each semester since September, 1956, no attempt has been made to assess the representativeness by these students of the student body of which they were samples, nor to evaluate any aspects of their scholastic ability other than verbal.

Due to the limitation of research related to the present study a brief history of the University of Houston Reading Clinic and its services is presented.

A Brief History of the University of Houston Reading Clinic

Purposes

The University of Houston Reading Clinic began functioning in 1952 under the sponsorship of the Psychology department. Although its services included both pre-college and college level students, its primary purpose was to teach college freshmen and other interested students more effective study techniques, to improve their reading skills, and to help them schedule their study time more wisely.

Services

Pre-college reading training below the last two years of high school was conducted on an individual basis only.

Diagnostic reading and achievement tests were administered to each student individually to discover the level of his reading achievement and to identify specific weaknesses in his reading performance. On the basis of obtained test scores and other information supplied by the student's parents or the referring school, an individualized training program, designed to fit his specific reading needs, was planned for the student. In most cases a student was tutored for three one-hour sessions weekly. Reading training was continued until the individual had reached either his grade-placement level or his ability level.

In the last two years of high school reading was taught chiefly in groups during the summer terms. The majority of students applying for admission to a summer reading group were planning to enter college upon graduation from high school and were attempting to improve their reading skills toward that end.

The pre-college programs were not designed nor did they function in competition with public school reading programs. Rather, they served as complementary training designed to enhance whatever services were available in the public school system.

As the Houston Independent School District acquired personnel and facilities to administer remedial reading instruction to large numbers of students the demand for pre-college training at the University of Houston Reading Clinic grew

less and less. Summer group training for high school students was discontinued in 1964.

At the college level, a developmental reading course, "Effective Reading and Study" (Psychology 131), carrying three semester hours of credit was offered. While this course was especially designed for freshmen, upper-classmen and graduate students who applied were also admitted. The purpose of this course, as mentioned earlier, was to aid the college student in improving his reading and study skills.

Facilities

Using diverse teaching techniques, the course has emphasized improved reading comprehension, flexible reading rate, vocabulary development, and a variety of study techniques.

In 1959, a series of reading lectures, financed by the Ford Foundation, were video-taped for use in the instruction of reading students. One lecture each week was shown, in two separate time slots, by the University of Houston Educational Television Station (KUHT-Channel 8). These lectures were continued until September, 1965.

About one-fifth of the student's time was spent in laboratory practice with one of several mechanical devices designed to aid in increasing reading rate. Among the mechanical devices used were reading pacers, tachistoscopes, and a shadowscope for individual use; a group tachistoscope and a perceptoscope for group instruction.

Growth

There has been a steady increase each semester in the number of students who seek improvement of their reading skills in furthering their chances of completing the four-year college program.

From its beginning in 1952, when only two sections of college level reading were taught, the demand for services of the reading clinic had grown to the point that eighteen sections of the reading course were offered in the Fall Semester, 1964. In little more than a decade the course had evolved from one which had served about 50 college students each semester to one serving approximately 450 such students in the Fall Semester, 1964, who were enrolled in "Effective Reading and Study."

CHAPTER III

THE SAMPLE GROUP

Subjects

The sample group in this study was comprised of 269 freshmen who were enrolled in the course, "Effective Reading and Study," at the University of Houston, Houston, Texas, in the Fall Semester, 1964. The subjects were selected, on the basis of several criteria, from the eighteen sections of the course taught that semester.

Criteria for Selection

Subjects for this study were selected from the Fall Semester, 1964, since that was the first semester of state assistance for the University of Houston, and it was believed that freshmen enrolled in the reading course for that semester would be representative of freshmen who enroll in this special course each semester under the revised admission requirements of the university.

Only those freshmen who were taking the course, "Effective Reading and Study," for credit were included in this study. Each of the subjects had completed all of the requirements of the course and had been assigned a final letter grade of A, B, C, D, or F.

All of the subjects were required to have taken the

Scholastic Aptitude Test of the College Entrance Examination Board and have their scores available in University of Houston files. Further, all subjects must have completed a personal data inventory giving background information under three major headings: General, Educational and Counseling.

The required criteria of selection described above resulted in a loss of 35% of the freshmen who originally enrolled in this special course during the fall of 1964. Some had dropped the course and others lacked the required information. Some were of higher academic classification and were not included.

Procedure Used in Collecting Data

A variety of information was obtained from several sources in an attempt to describe this group enrolled in the special reading course, and, to determine whether this group was a representative sampling of the population of entering freshmen at the University of Houston, in the Fall Semester, 1964. As data were accumulated from the various sources they were tabulated separately for both sexes, in a categorical arrangement, to facilitate their description and comparative analysis.

Personal data used in the description of the sample group were obtained from personal data inventories kept on file in the office of the University of Houston Reading Clinic. Completion of these inventories, which were in the form of

questionnaires, was required of all students enrolled in "Effective Reading and Study," during their first week of class attendance. After a careful review of the data available on these questionnaires the decision was made to use the following categories of information in this study:

A. General Information

1. Age
2. Sex
3. Marital status

B. Educational Information

1. Name of high school attended (Houston Independent School District, Harris County, Outside Harris County but in Texas, and Outside Texas)
2. Date of graduation from high school
3. Grades earned in high school (Very low, Below average, Average, Above average)
4. Choice of major field of study
5. Hours of outside employment per week while attending college

C. Counseling Information

1. Amount of reading done by each parent (Much, Occasionally, Seldom)
2. Quality of English spoken in the home (Good, Fair, Poor)
3. Quality of English spoken by childhood playmates (Good, Fair, Poor)

4. Speech difficulty
5. Hearing loss
6. Visual difficulty
7. Frequency of reading the front page of the newspaper (Daily, Occasionally, Rarely)
8. Frequency of reading the editorial page of the newspaper (Daily, Occasionally, Rarely)
9. Frequency of reading the feature or sports page of the newspaper (Daily, Occasionally, Rarely)
10. Number of books (not class texts or references) read in the last twelve months (0-, 1-3, 4-6, More-)

The number of cases in each of the different categories was tabulated separately for both sexes.

Grade Point Averages were chosen as descriptive measures of the subjects at the end of their first semester in college. These measures were obtained from files of the University of Houston Counseling and Testing Center for 228 of the subjects. The remaining 41 subjects were entering freshmen with no previous college records. The Grade Point Averages were tabulated and group averages were computed separately for male and female students.

The Student File, obtained from the Student Records Office of the Registrar, was checked to find out how many of the 269 subjects in the sample group were still enrolled in the University of Houston in the Fall Semester, 1965, and

whether changes had been made in the choice of major field of study. All changes found were tabulated separately for both sexes. In like manner, tabulations were made of those subjects who, in 1965, retained the major field of study chosen in 1964.

An additional descriptive measure used was the letter grade earned by each subject in "Effective Reading and Study." This information was obtained from carbon copies of official grade sheets, which are kept on file in the office of the University of Houston Reading Clinic. The five categories of grades were tabulated separately for each sex.

Scholastic Aptitude Test Scores were selected as one of the criteria measures to be used for comparative analysis since this test is well standardized and widely used, and since these scores were available on all entering freshmen at the University of Houston, beginning with the Fall Semester, 1964. The Scholastic Aptitude Test yields two scores: A verbal score which reflects the ability to read with comprehension, to reason with verbal material and to perceive word relationships; and a mathematical score which reflects ability to reason with numerical relationships and to solve mathematical problems. A total score, derived by combining the verbal and mathematical scores, is used by the University of Houston as one criterion for admitting new freshmen.

Scholastic Aptitude Test scores were obtained for all subjects from files in the Counseling and Testing Center of

the University of Houston, with the exception of 53 cases which had transferred from other institutions with fifteen or more semester hours of college credit and who were not required to take the Scholastic Aptitude Test for admission. A search of the applications for admission, in the Office of Admissions, yielded Scholastic Aptitude Test scores for all of the 53 cases which had transferred. Tabulations were made separately for males and females for each of the three sets of scores. These scores were then compared with each other and with the Scholastic Aptitude Test scores of entering freshmen at the University of Houston in the Fall Semester, 1964.

A second criterion used for comparative analysis was the quartile ranks of the individual subjects with respect to their high school graduating classes. These ranks were obtained from records in the Counseling and Testing Center and the Office of Admissions of the University of Houston. The ranks were tabulated separately for both sexes and then compared with the corresponding data of the entering freshmen group at the University of Houston in the Fall Semester of 1964, as well as with each other.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The data used in this investigation are presented in Tables I through XXV. Tables I through X comprise the data taken from the personal data inventories, Tables XI through XXII include scholastic aptitude and achievement data and Tables XXIII through XXV contain the comparative data. In keeping with the purpose of the study the results are reported in both a descriptive and a comparative manner.

In each of the tables males are represented by "M" and females by "F." Totals are shown at the foot of the tables and in most instances subtotals occur in the extreme right column. Notations that are peculiar to specific tables are explained along with the data that are recorded in those tables.

Descriptive Data

The 269 subjects comprising the sample group represented 65% of the freshmen enrolled in Effective Reading and Study (Psychology 131), and 14% of the total population of entering freshmen at the University of Houston in the Fall Semester, 1964. Of the 269 subjects, 158, or 59%, were male and 111, or 41%, were female.

Personal Data

The age, sex, and marital status of each of the subjects in this study are presented in Table I.

Ages of male subjects ranged from 17 to 39 years with only one being 39 years old; all others were 27 or younger. Female subjects in this distribution had a somewhat shorter age range of 17 to 33 years. One woman was 33, two were 31, and one was 29 years old. All others were 24 years old or younger. The median age of each sex was 18 years and the greater proportion of each was single. Only 17 males, or 10%, and 12 females, or 12%, were married.

In Table II are presented the locations of high schools attended and graduation dates of members of the sample group.

It will be observed that relatively few subjects of either sex came from high schools outside the state of Texas. The largest group of males, 69, had graduated from high schools in the Houston Independent School District, while the smallest group, 8, had come from other high schools in Harris County. A total of 140 men had graduated in 1964. All others had been out of high school five years or less, with the exception of two; one of whom had graduated in 1948, the other in 1957.

Half the female subjects had graduated from high schools in the Houston Independent School District and here, again, the smallest group, 7, represented other high schools in Harris County. Seventy-nine women had graduated in the

TABLE I
AGE, SEX, AND MARITAL STATUS OF THE SAMPLE GROUP

Age in Years	Marital Status				Total
	Single		Married		
	M	F	M	F	
39			1		1
38					
37					
36					
35					
34					
33				1	1
32					
31				2	2
30					
29				1	1
28					
27			2		2
26					
25			1		1
24			1	1	2
23	1			1	2
22	2	1	2	1	6
21	1	1	3	2	7
20	7	5			12
19	25	12	4	3	44
18	91	61	3		155
17	14	19			33
Total	141	99	17	12	269
Median	18	18	21	23	18
Range	17-23	17-22	18-39	19-33	17-39

TABLE II

LOCATIONS OF HIGH SCHOOLS ATTENDED AND GRADUATION DATES
OF THE SAMPLE GROUP

Year of Graduation	Location of High Schools								Total	%
	Houston		Harris County		Outside Harris County		Outside Texas			
	M	F	M	F	M	F	M	F		
1941				1					1	
1942										
1943										
1944										
1945										
1946										
1947										
1948			1			1			2	
1949								1	1	
1950						1			1	
1951		1							1	
1952										
1953								1	1	
1954										
1955										
1956										
1957					1				1	
1958										
1959					1		1		2	
1960			1	1	1	1			4	
1961			1			3			4	
1962				1		2		1	4	
1963	9	3	1			6	1	8	28	(10)
1964	60	52	4	4	54	18	22	5	219	(81)
Total	69	56	8	7	57	32	24	16	269	
%	44	50	05	06	36	29	15	15	100	

Note.- Percentages at the foot of the table were based on separate totals of each sex who graduated from high schools in the various localities.

spring of 1964 and 26 others in 1960 or later. Six women had been out of high school more than five years prior to college attendance; one had graduated in 1941, one in 1948, one in 1949, one in 1950, one in 1951, and one in 1953. However, as in the case of males, the majority of women were recent high school graduates.

The description of grades earned in high school by the sample group is contained in Table III. Percentages at the foot of the table (N%) were calculated for men and women combined while those in the columns (n%) were computed separately for the number of each sex in the separate categories.

One male subject reported having earned very low grades, and seven men and two women reported below average grades in high school. A total of 169 subjects, 115 males and 54 females reported their grades as average. This was the largest combined group and the grades reported are no higher than we might expect of college freshmen.

The remaining 90 subjects indicated having received above average grades in high school. While this number is far in excess of those reporting below average grades, we might expect fewer individuals who are admitted to institutions of higher learning to have received low grades at the high school level.

Choices of major fields of study of the sample group are recorded in Table IV. Totals (column N) correspond to the colleges and subtotals (column n) to departments within the colleges.

TABLE III
DISTRIBUTION OF GRADES OF THE SAMPLE GROUP
EARNED IN HIGH SCHOOL

	Very Low	n%	Below Average	n%	Average	n%	Above Average	n%	Total
Men	1	01-	7	04	115	73	35	22	158
Women			2	02	54	48	55	50	111
Total	1		9		169		90		269
N%	01-		03		62		34		100

TABLE IV

CHOICE OF MAJOR FIELD OF STUDY IN THE FALL SEMESTER, 1964

College	Department	M	F	n	N	%
Architecture		1			1	
Arts and Sciences						
	Art	1	1	2		
	Biology	2	4	6		
	Biophysics	1		1		
	English	2	3	5		
	History	1	2	3		
	Home Economics		1	1		
	Journalism	2	2	4		
	Mathematics	2	5	7		
	Music	1		1		
	Philosophy	1		1		
	Political Science	1		1		
	Psychology	4	7	11		
	Spanish	1		1		
	Sociology		1	1		
	(Unspecified)	52	39	91	136	(50)
Business						
Administration						
	Accounting	1		1		
	Business Education	7	1	8		
	and Office					
	Administration					
	General Business	32	2	34	43	(16)
	Administration					
Education						
	Elementary	3	34	37		
	Health and Physical	23	1	24		
	Secondary	7	6	13		
	Special		2	2	76	(28)
Engineering						
	Civil	3		3		
	Electrical	1		1	4	
Law		4			4	
Pharmacy		1			1	
Technology						
	Air Conditioning	1		1		
	Electronics	1		1		
	Industrial Management	1		1		
	Radio and Television	1		1	4	
Total		158	111	269	269	

Forty-five per cent of the men and 59% of the women had selected majors in the College of Arts and Sciences. Fifty-two men and 39 women in this college had designated General Arts and Sciences (unspecified) as majors. Of the 19 men who had specified majors, 4 had chosen Psychology and the remaining 15 were about equally dispersed through ten other fields of study.

Among the 26 women who had specified majors, 4 had selected Biology, 5 had selected Mathematics, and 7 were majoring in Psychology while the remaining 10 had designated one of six other fields of study.

The second largest proportion of men, 40, or 25%, had chosen majors in the College of Business Administration. The remainder were scattered among the Colleges of Architecture, Education, Engineering, Law, and Technology.

Forty-three women were pursuing majors in the College of Education and three others were in the College of Business Administration. All of the women, then, were included in the colleges of Arts and Sciences, Education, and Business Administration.

Altogether, fourteen of the twenty-three fields of study within the College of Arts and Sciences, and six of the twelve in the College of Technology were represented by the subjects in this investigation.

Seventy per cent (106) of the male subjects and 74% (82) of the female subjects were not employed at the beginning of

the Fall Semester, 1964, at which time the data shown in Table V were obtained.

One male was employed 60 hours per week, another was employed 45 hours and the remaining 50 men were employed from 20 to 40 hours per week. The median number of hours of employment per week of males was twenty.

The distribution of hours of outside employment of females ranged from 6 to 45 hours with a median of 25 hours per week. A total of 23 women were employed from 20 to 45 hours; the remaining 6 were employed 16 hours per week or less.

The amount of reading done by parents of the subjects is tabulated in Table VI under the categories of "much," "occasionally," and "rarely."

Not all individuals completed this portion of the inventory for either parent. Twenty-six females failed to indicate the amount of reading done by fathers and 8 failed to indicate the amount of reading done by mothers. Eleven fathers and 2 mothers of female subjects were reported deceased. One hundred forty-nine males completed this section of the inventory for both parents with four fathers and three mothers reported deceased. Both male and female subjects, as the table reveals, checked the greatest number of parents of both sexes as reading "occasionally," the next largest number as reading "much," and fewest as reading "rarely." Male subjects placed more fathers than mothers in

TABLE V
DISTRIBUTION OF HOURS OF OUTSIDE EMPLOYMENT PER WEEK
FOR SAMPLE GROUP

No. Hours Employed	M	%	F	%	Total
0	106	70	82	74	188
1					
2					
3					
4	3	3	0		3
5					
6	1	1-	1	1	2
7					
8	1	1-	2	2	3
9	1	1-			1
10	3	2			3
11					
12	4	3			4
13					
14	1	1-			1
15	5	3	1	1	6
16	1	1-	2	2	3
17					
18					
19	1	1-			1
20	10	6	8	7	18
21					
22					
23					
24					
25	8	5	2	2	10
26					
27					
28					
29					
30	7	4	4	4	11
31					
32					
33					
34					
35					
36					
37					
38					
39					
40	4	3	6	5	10

(Table V continued on next page)

TABLE V (continued)

No. Hours Employed	M	%	F	%	Total
41					
42					
43					
44					
45	1	1-	3	3	4
46					
47					
48					
49					
50					
51					
52					
53					
54					
55					
56					
57					
58					
59					
60	1	1-			1
Total	158		111		269
Median	20 hrs.		25 hrs.		

TABLE VI
AMOUNT OF READING DONE BY PARENTS OF THE SAMPLE GROUP

Parent	Much						Occasionally						Rarely					
	M	%	F	%	T	%	M	%	F	%	T	%	M	%	F	%	T	%
Father	49	31	30	27	79	29	65	41	43	39	108	40	35	22	12	11	47	17
Mother	46	29	39	35	85	31	85	54	53	48	138	51	18	11	11	10	29	11
Total	95	60	69	62	163	60	150	95	96	87	246	91	53	33	23	21	76	28

Note.- T indicates the combined totals for both sexes in each of the categories.

the two categories "occasionally" and "rarely," while female subjects, in terms of percentages, placed both parents fairly evenly in all three categories.

The quality of English spoken in the homes and by childhood playmates of the subjects is reported in Table VII.

One hundred forty-seven men reported on the quality of English spoken in their homes and 145 men on that of childhood playmates; 107 women reported on both. Sixty per cent, or 89 of the males and 76%, or 82 of the females categorized the quality of English spoken in their homes as "Good" and both sexes classified the English spoken by childhood playmates as inferior to that spoken in their homes. Only 7 males and one female indicated a "poor" quality of English having been used in their homes. Ninety-nine males, or over half, classified the quality of English spoken by childhood playmates as "fair." Female subjects, from greatest to least in number, classified both the English spoken in their homes and by childhood playmates, in descending order, from "Good" to "Poor."

That portion of the inventory concerning speech, hearing and visual handicaps was completed by only those subjects who had experienced difficulty in one of the three areas.

Table VIII shows that of those who had experienced one of the handicaps by far the greatest number of both sexes had experienced visual impairment. Sixty-one men and 66 women wore glasses, whereas only ten men and 6 women had experienced

TABLE VII

QUALITY OF ENGLISH SPOKEN IN THE HOME AND BY
CHILDHOOD PLAYMATES OF THE SAMPLE GROUP

Quality of English	In Home				By Childhood Playmates			
	M	%	F	%	M	%	F	%
Good	89	56	82	74	35	22	62	56
Fair	51	32	24	21	99	63	39	35
Poor	7	05	1	01	11	07	2	02
Total	147	93	107	96	145	92	103	93

TABLE VIII
DISTRIBUTION OF SPEECH, HEARING AND VISUAL HANDICAPS
OF THE SAMPLE GROUP

Speech Difficulty		Hearing Loss		Difficulty	
M	F	M	F	M	F
10	6	4	3	61	66
% 06	05	03	03	38	60

speech difficulty and only 4 men and 3 women, or 3% of each sex, reported hearing losses.

In Table IX are shown the numbers of male and female subjects who daily, occasionally, or seldom read the front page, the editorial page, or the sports page of the newspaper.

More males, 56%, reported reading the sports page daily than either of the other pages, while more of the females, 50%, read the front page daily. The editorial page, least often read by both sexes, was read daily by only 17 men and 15 women.

Six of the eleven men who indicated "seldom" reading the sports page of the newspaper also indicated "seldom" reading each of the other pages.

Slightly larger percentages of females than males read all three pages "occasionally." Furthermore, there was no single incidence among females of "seldom" reading all three pages of the newspaper.

The number of books read in the last twelve months by members of the sample group is tabulated in Table X.

This section of the inventory was completed by 144 men and 104 women. The number of books listed as read by both sexes was exclusive of class texts or reference books but was not restricted in any other way.

Eight men had read no book other than texts or references in the preceding twelve month period, 49 had read from 1 to 3 books, and 67 had read from 4 to 6 books. Only three men

TABLE IX
FREQUENCY OF READING THE NEWSPAPER

	Front Page						Editorial Page						Sports Page					
	M	%	F	%	T	%	M	%	F	%	T	%	M	%	F	%	T	%
Daily	71	45	55	50	126	47	17	10	15	14	32	12	88	56	38	34	126	47
Occasionally	56	35	43	39	99	37	59	37	56	50	115	43	43	27	40	36	83	31
Seldom	13	08	7	06	20	07	66	42	32	29	98	36	11	07	25	23	36	13
Total	140	88	105	95	245	91	142	89	103	93	245	91	142	90	103	93	245	91

Note.- T indicates the combined totals for both sexes in each of the categories.

TABLE X

DISTRIBUTION OF NUMBER OF BOOKS READ BY THE SAMPLE GROUP
IN THE LAST TWELVE MONTHS

Number of Books Read	M	F	Total
52-54		1	1
49-51	1	3	4
46-48			
43-45			
40-42			
37-39			
34-36		1	1
31-33			
28-30	1		1
25-27		1	1
22-24			
19-21	1	2	3
16-18			
13-15	2	6	8
10-12	9	15	24
7-9	6	4	10
4-6	67	43	110
1-3	49	24	73
0-	8	4	12
Total	144	104	248
Median	4-6	4-6	

indicated having read more than 15 books. One of these had read 21 books, one had read 28, and the other had read 50.

Eight women students specified more than 15 books, in addition to class texts or references, read in the last twelve months. Two had read from 19 to 21 books, one had read 25 books, one had read 36 books, three had read from 49 to 51 books, and one indicated having read 52 books, or one per week. More members of both sexes had read from 4 to 6 books, while the second largest number of each sex dropped to the next lower category of 1 to 3 books. Only half as many women as men (4) had read no book other than class texts or references within the past year.

Scholastic Aptitude and Achievement Data

Grade point averages at the end of the first semester in college are found in Table XI. These averages were available for only 136 males and 92 females, or a total of 228 of the 269 members of the sample group.

For male subjects grade point averages ranged from .5 to 4.0 with a mean of 1.8. There were two males at the upper extreme, 3.8 to 4.0, shown in the table, and 8 at the lower extreme, .5 to .7. The mean grade point average of 1.8, when translated to letter grades, is slightly below a grade of C (2.0).

The grade point averages of female subjects ranged from .5 to 3.4 with a mean of 2.04, or a letter grade of slightly better than C.

TABLE XI
GRADE POINT AVERAGES OF THE SAMPLE GROUP

Grade Point Averages	M	F	Total	%
3.8-4.0	2		2	1-
3.5-3.7				
3.2-3.4	4	4	8	3
2.9-3.1	4	6	10	4
2.6-2.8	7	11	18	8
2.3-2.5	15	8	23	10
2.0-2.2	22	23	45	20
1.7-1.9	26	20	46	20
1.4-1.6	23	6	29	13
1.1-1.3	15	7	22	10
.8-1.0	10	6	16	7
.5-.7	8	1	9	4
Total	136	92	228	
Mean	1.8	2.04	1.90	
t	1.55			

Application of the t test of differences between means to these data yielded a value of 1.55 which was not statistically significant.

One hundred and one of the males, and 65 of the females in this study were still enrolled in the University of Houston in the Fall Semester of 1965. Fifty-seven males and 46 females, a total of 103, or more than one-third, had dropped out of the University. The tabulations, shown in Table XII, correspond to the major fields of study designated by the subjects in the Fall Semester, 1965, and all percentages reported are based on the 1965 enrollment figures. Here, as in Table IV, totals (N) refer to colleges and subtotals (n) to departments within the various colleges.

The largest proportion of males, 41, were enrolled in the College of Business Administration. The next largest number, 20, were majoring in Health and Physical Education. In contrast to the Fall Semester, 1964, when about one-third of the males had unspecified majors, in the Fall Semester of 1965 only 6 males had not yet specified a major.

Over half the female subjects who were still enrolled were in the College of Education; 25, or 38%, were in the specific area of Elementary Education (EED). Only one female had not specified a major at this time and again, as in the Fall Semester, 1964, all women were enrolled in the Colleges of Arts and Sciences, Business Administration and Education.

The distribution of changes made by subjects in their

TABLE XII

DISTRIBUTION OF MEMBERS OF THE SAMPLE GROUP WHO WERE
STILL ENROLLED AT THE UNIVERSITY OF HOUSTON
IN THE FALL SEMESTER, 1965

College	Department	M	F	n	N	%
Architecture		2			2	
Arts and Sciences	Art		2	2		
	Biology	1		1		
	Biophysics	1		1		
	Chemistry	1		1		
	English	1	5	6		
	History	4	3	7		
	Home Economics		3	3		
	Journalism	1	3	4		
	Mathematics	4	5	9		
	Music	1		1		
	Philosophy	2		2		
	Political Science	2		2		
	Psychology	2	3	5		
	Speech		2	2		
	Sociology		1	1		
	(Unspecified)	6	1	7	54 (32)	
Business						
Administration	Accounting	4		4		
	Economics and Finance	1		1		
	General Business Administration	32	3	35		
	Marketing	1		1		
	Management	3		3	44 (26)	
Education	Elementary	2	25	27		
	Health and Physical	20	2	22		
	Secondary		6	6		
	Special		1	1	56 (34)	
Engineering	Civil	2		2		
	Electrical	1		1	3	
Law		5			5	
Optometry		1			1	
Technology	Radio and Television	1		1	1	
Total		101	65		166	
%					100	

major fields of study from September, 1964 to September, 1965 is contained in Table XIII.

The tabulations in this table correspond to the field of study from which the subjects transferred and the notations for subtotals and totals, n and N respectively, are the same as those described for Tables IV and XII.

The greatest change in both sexes was from the unspecified status in the College of Arts and Sciences. Thirty-one males and 15 females changed from General Arts and Sciences to a definite major field of study. Seven males transferred from Business Education and 6 transferred from Secondary Education (SED) to other fields of study. A total of 54, or 53%, of the males still enrolled had changed from their original major in 1965.

Few changes were made by females aside from the General Arts and Sciences (unspecified) category. One female transferred from Journalism, two from Mathematics, one from Psychology, and one from Elementary Education to another field of study. A total, then, of 20, or 30%, of the female subjects still enrolled had changed majors in the Fall Semester, 1965.

Presented in Table XIV are the numbers of subjects in the sample group who retained the major selected in the Fall Semester, 1964, upon their re-enrollment in the Fall Semester, 1965. Again, the Tabulations n and N denote departments and colleges, respectively, in which students were enrolled.

TABLE XIII

DISTRIBUTION OF MEMBERS OF THE SAMPLE GROUP WHO HAD
CHANGED MAJORS IN THE FALL SEMESTER, 1965

College	Department	M	F	n	N	%
Architecture		1			1	
Arts and Sciences						
	Art	1		1		
	Biology	1		1		
	English	1		1		
	Journalism		1	1		
	Mathematics		2	2		
	Psychology	2	1	3		
	(Unspecified)	31	15	46	55	(27)
Business						
Administration						
	Business Education and Office Administration	7		7		
	General Business Administration	3		3	10	(06)
Education						
	Elementary		1	1		
	Secondary	6		6	7	
Pharmacy		1			1	
Total		54	20		74	
%					100	

TABLE XIV

DISTRIBUTION OF MEMBERS OF THE SAMPLE GROUP WHO RETAINED
IN THE FALL SEMESTER, 1965, THE MAJOR CHOSEN
IN THE FALL SEMESTER, 1964

College	Department	M	F	n	N	%
Architecture		1			1	
Arts and Sciences						
	Art		1	1		
	Biophysics	1		1		
	English		1	1		
	History	1	2	3		
	Home Economics		1	1		
	Journalism	1	2	3		
	Mathematics	2		2		
	Music	1		1		
	Philosophy	2		2		
	Psychology	1	5	6		
	Sociology		1	1		
	(Unspecified)	6	1	7	29	(17)
Business						
Administration						
	Accounting	1		1		
	General Business	14	3	17	18	(10)
	Administration					
Education						
	Elementary	2	20	22		
	Health and Physical	11	1	12		
	Secondary		6	6		
	Special		1	1	41	(25)
Law		1			1	
Engineering						
	Civil	2		2	2	
Total		47	45		92	
%					100	

A total of 92 students, 47 males and 45 females, had made no change in choice of major field of study. Fifteen of the 47 male students were still in the College of Arts and Sciences; 13 were in the College of Business Administration, one each were in the Colleges of Architecture and Law, and two were in the College of Engineering.

Twenty-eight of the 45 women students had remained in the College of Education; 20 in Elementary Education, 6 in Secondary Education, one in Health and Physical Education, and one in Special Education. Fourteen were still seeking majors in various departments of the College of Arts and Sciences and one female, in General Arts and Sciences, had not yet specified a major. All of the women were enrolled in the Colleges of Arts and Sciences and Education with the exception of three who were majoring in General Business Administration (GBA).

The distribution of final academic grades earned by both sexes in the course Effective Reading and Study (Psychology 131) is shown in Table XV.

The grade earned by the largest percentage of male subjects, 54, or 35%, was "C"; the smallest percentage, 13, or 8%, earned "A." The grade "B" was earned by 49, "D" by 26 and "F" by 15, or 9 per cent.

The numbers of females earning "A" and "B" were about equal; 40 and 41, respectively, or 36% each. Twenty-one earned "C," 7 earned "D," and in contrast to the number of

TABLE XV

DISTRIBUTION OF GRADES EARNED BY THE SAMPLE GROUP IN
THE COURSE, "EFFECTIVE READING AND STUDY"

Grades	Males		Females		Total	
	N	%	N	%	N	%
A	14	09	40	36	54	20
B	49	31	41	36	90	34
C	54	34	21	20	75	28
D	26	17	7	06	33	12
F	15	09	2	02	17	06
Totals	158		111		269	

males who earned "F," only two, or 2%, of the females earned this grade. The percentage of females earning "A" was more than four times that of males.

Shown in Table XVI is the distribution of Verbal Scholastic Aptitude Test scores (SAT-V) of the sample group.

The range of SAT-V scores for men was from 256 to 647, the mean score was 419.77, and the standard deviation was 95.90. For women, these scores ranged from 256 to 682. The top score reached by females exceeded the top score of males (647) by 35 points and only one female scored in the lowest interval, whereas 7, or 4%, of the male scores were in that interval. The mean female score was 456.52 and the standard deviation was 65.78. Both the male and the female distributions of verbal scores, in this investigation, fell below the national norms.

To determine whether the means of the male and female distributions were significantly different, the t test for differences between means was applied. The t value of 3.43, shown in the table, was found to be significant at the .0010 level; only 10 times in 10,000 chances would a difference this great occur by pure chance. This difference is in favor of the female scores.

A combination of the two distributions yielded a mean score of 438.65 and a standard deviation of 88.46, both of which are below the national norms.

Presented in Table XVII is the distribution of

TABLE XVI
DISTRIBUTION OF VERBAL SCHOLASTIC APTITUDE TEST
SCORES OF THE SAMPLE GROUP

SAT-V	M	F	n
670-699		1	1
640-669	1	2	3
610-639	2	2	4
580-609	4	4	8
550-579	8	5	13
520-549	16	11	27
490-519	8	8	16
460-489	18	20	38
430-459	13	18	31
400-429	10	16	26
370-399	24	13	37
340-369	23	6	29
310-339	14	4	18
280-309	10		10
250-279	7	1	8
N	158	111	269
Mean	419.77	456.52	438.65
Standard Deviation	95.90	65.78	88.46
Difference in Means	36.55		
t	3.43		
Significant at .01 level			

Note.- Mean for national group is 500. Standard deviation for national group is 100.

TABLE XVII

DISTRIBUTION OF MATHEMATICAL SCHOLASTIC APTITUDE TEST
SCORES OF THE SAMPLE GROUP

SAT-M	M	F	n
770-779	1		1
740-769			
710-739			
680-709	4		4
650-679	3		3
620-649		1	1
590-619	11	2	13
560-589	15	6	21
530-559	17	8	25
500-529	11	10	21
470-499	15	15	30
440-469	19	16	35
410-439	23	14	37
380-409	14	18	32
350-379	7	10	17
320-349	11	8	19
290-319	7	2	9
260-289			
230-259		1	1
N	158	111	269
Mean	474.42	451.98	464.83
Standard Deviation	104.19	61.32	90.06
Difference in Means	22.44		
t	2.03		

Note.- Mean for national group is 500. Standard deviation for national group is 100.

Mathematical Scholastic Aptitude Test Scores (SAT-M) of the sample group.

On this section of the SAT the scores of males were higher than those of females. Seven, or 4%, of the males scored higher than any female and none scored as low as the lowest female score. The male scores ranged from 290 to 770 with a mean score of 474.42. It should be noted that the mean for this distribution was considerably higher than that obtained by males on the verbal portion of the SAT. The standard deviation of this set of scores was 104.19, a slightly greater than normal dispersion measure.

Female scores ranged from 237 to 625. The top score earned by females was more than one hundred points lower than the top score earned by males, and the low score was more than 50 points below the lowest score obtained by males. The mean female score was 451.98, and the standard deviation was 61.32. The female scores were contained within a narrower range but were consistently lower than male scores.

It will be observed that the national average and standard deviation for this section of the SAT is the same as that for the verbal section. While the difference between the means for this section was less than that of the verbal section, the t test for differences between means was again applied. The t value of 2.03 shown in the table, was found to be significant at the .05 level of confidence. Only 5 times in 100 would a difference this great occur by chance

alone. The combined distributions yielded a mean score of 464.83 and a standard deviation of 90.07, both of which are below national norms.

Total Scholastic Aptitude Test scores (SAT-TOTAL) of the sample group are included in Table XVIII.

This table reveals that the highest scores were achieved by men and the lowest by women. However, the higher percentage of female scores which are clustered near the center of the distribution result in a higher mean score for females than for males. The range of total scores obtained by men was 550 to 1350, a range of 800, with a mean of 893.62 and a standard deviation of 113.90. The larger standard deviation for men than for women reflects the greater dispersion of male scores.

Scores of females ranged from 493, the lowest score obtained, to 1266, with a mean of 917.51 and a standard deviation of 87.76. Inspection of the table shows that 86 of the female scores fell within and between the two intervals 730-769 and 970-1009. There was one score in the lowest interval but none in any of the four consecutive intervals above the lowest. No female scored above the 1250-1289 interval.

Since application of the *t* test of differences between means to the verbal and mathematical scores of the subjects revealed significant differences, the test was again applied to the total scores. A *t* value of 2.22 was obtained and found to be significant at the .05 level. Only 5 times in

TABLE XVIII
DISTRIBUTION OF TOTAL SCHOLASTIC APTITUDE TEST SCORES
OF THE SAMPLE GROUP

SAT-TOTAL	M	F	n
1330-1379	2		2
1290-1329			
1250-1289	2	1	3
1210-1249		2	2
1170-1209	5		5
1130-1169	5	3	8
1090-1129	9	3	12
1050-1089	6	5	11
1010-1049	14	7	21
970-1009	10	14	24
930-969	14	10	24
890-929	12	15	27
850-889	18	17	35
810-849	9	8	17
770-809	9	11	20
730-769	18	11	29
690-729	9	3	12
650-689	4		4
610-649	5		5
570-609	5		5
530-569	2		2
490-529		1	1
N	158	111	269
Mean	893.62	917.51	903.48
Standard Deviation	113.90	87.76	113.07
Difference in Means	23.89		
t	2.22 Significant at .05 level		

100 would a difference this large occur by chance factors alone. One of the most interesting features of the two sets of total scores lies in the greater scattering of male scores, or the greater concentration of female scores toward the center of the distribution.

Both the number and percentage of each sex who graduated in the different quarters of their high school classes are shown in Table XIX.

It will be observed that 22 of the men graduated in the top quarter of their classes, 67 in the second quarter, 49 in the third quarter and 20 in the lowest quarter. The largest group graduated in the second quarter of their high school classes.

Fifty women graduated in the top quarter of their high school classes, 43 in the second quarter, 17 in the third quarter and one in the lowest quarter. Thirty-one per cent, or 28 more women than men, graduated in the top quarter and only 1%, or 19 fewer women graduated in the lowest quarter of their high school classes. More women graduated in the top than in any of the other quarters. A combination of the ranks of the two sexes yielded the largest number, 110 or 40%, in the second quarter and the fewest, 21, or 8%, in the lowest quarter of their high school graduating classes. Women made a considerably more favorable showing in this respect than men.

Recorded in Table XX are the distributions of high school

TABLE XIX

DISTRIBUTION OF HIGH SCHOOL RANKS OF THE SAMPLE GROUP

High School Ranks	M	F	n	%
Top Quarter	22	50	72	27
Second Quarter	67	43	110	40
Third Quarter	49	17	66	25
Lowest Quarter	20	1	21	08
N	158	111	269	100
%				100

TABLE XX
DISTRIBUTION OF HIGH SCHOOL RANKS AND VERBAL SCHOLASTIC
APTITUDE TEST SCORES OF THE SAMPLE GROUP

SAT-V Scores	Ranks								n
	Highest		Second		Third		Fourth		
	M	F	M	F	M	F	M	F	
670-679				1					1
640-669		2	1						3
610-639		2			1		1		4
580-609	1	2	2	1		1			7
550-579	2	1	3	2	2	1	2	1	14
520-549	5	6	4	4	4	1	3		27
490-519	2	3	5	3	1	2			16
460-489	2	8	5	8	9	4	2		38
430-459	4	6	6	9	3	4			32
400-429		9	7	3	3	3	1		26
370-399	1	9	9	5	11		3		38
340-369	4	1	12	3	4	1	2		27
310-339	1	1	6	3	5		3		19
280-309			4		4		3		11
250-279			3	1	2				6
N	22	50	67	43	49	17	20	1	269
N'	72		110		66		21		
Mean	465.09	468.10	409.05	459.05	411.78	468.23	422.70	570	
Standard Deviation	94.24	138.17	109.63	40.30	87.85	55.93	103.46	0	

Note.- Mean for national group is 500. Standard deviation for national group is 100.

ranks and SAT-V scores of the sample group in this investigation.

The range of SAT-V scores of the 22 males who graduated in the top quarter of their high school classes was from 325 to 580 with a mean of 465.09, and a standard deviation of 94.24. None of this group scored in the three upper intervals of the table, nor, in the two lower intervals.

For those males graduating in the second quarter of their high school classes, the mean score was 409.85 and the standard deviation was 109.63, with a range of scores from 275 to 644. As stated earlier, the largest group, 67, was in this category and the scores were more widely dispersed than those in any of the other quarters.

Scores of the group of males in the third quarter of their graduating classes ranged from 262 to 635 with a mean score of 411.78 and a standard deviation of 87.85.

The fourth quarter, which comprised 20, or 13%, of the males had a range of scores from 306 to 624, a mean score of 422.70 and a standard deviation of 103.46. The mean of the scores of those males graduating in the fourth quarter was actually higher than the means of the second and third quarters. Another interesting point was that the top score earned by men in the first quarter was not as high as the top scores earned in the second, third or fourth quarters.

Females who graduated in the top quarter of their high school classes earned a mean score of 468.10, with a range of

scores from 322 to 647, and a standard deviation of 138.17. Low scores of males and females, in this quarter, were in the same interval, but 4 females, or 4%, scored higher than the highest male score. The difference between mean scores for the two sexes was small, but female scores were more widely dispersed.

In the second quarter, the range of scores for women was from 256 to 682, the mean was 459.05, and the standard deviation was 40.30. The least scattering of female scores occurred in this quarter.

Those women graduating in the third quarter of their high school classes had a range of scores from 361 to 583 with a mean of 468.23 and a standard deviation of 55.93. The mean of this set of scores was slightly above that of females in the highest quarter.

Only one woman graduated in the fourth quarter of her high school class and she earned a verbal score of 570 which was well above the national mean of 500. However, there were wide negative discrepancies between all other means and standard deviations in this distribution and the national norms for the SAT.

The mean scores of females were consistently higher than those of males in each of the four quarters, and in all except the first quarter, female scores were less widely dispersed.

Subtotals (n) in the table are the combined numbers of

male and female subjects whose scores fell within the various class intervals; N is the number of each sex in the separate ranks; and N' is the combined number of both sexes in each of the four ranks.

Since the quarter of his high school class in which an individual graduates varies widely from school to school, largely as a function of school size and variations in graduating standards, it was believed that a test of mean differences would be relatively meaningless for this tabulation of scores. Therefore, the t test for differences between means was not applied to this distribution, nor was it applied to the data reported in Tables XXI and XXII for the same reason.

Table XXI is comprised of the data with respect to high school rank and SAT-M scores of the sample group. The notations (n , N , N') used in this table are the same as those described for Table XX.

Among the 22 men ranking in the top quarter of their high school graduating classes, only one scored in the top interval, 770-779, two scored in the interval 680-709, and all others in the intervals 380-409 to 590-619. No men scored below 380. The mean score for this group was 544.09, or well above the national mean, and the standard deviation was 94.26 which approaches the national norm.

All scores of women ranking in the top quarter were contained in the intervals 290-319 to 620-649. The low score was 306 and the top score 625. Both the mean (461.96) and the standard deviation (79.10) were below national norms.

TABLE XXI
HIGH SCHOOL RANK AND MATHEMATICAL SCHOLASTIC APTITUDE
TEST SCORES OF THE SAMPLE GROUP

SAT-M Scores	Ranks								n
	Highest		Second		Third		Fourth		
	M	F	M	F	M	F	M	F	
770-779	1								1
740-769									
710-739									
680-709	2		1		1				4
650-679			2		1				3
620-649		1							1
590-619	3	2	5		3				13
560-589	3	4	7	2	3		2		21
530-559	3	5	7	3	6		1		25
500-529	2	3	4	6	1	2	3		21
470-499	3	8	4	2	8	5	1		31
440-469	2	7	10	3	6	6	1		35
410-439	1	6	12	6	8	2	3		38
380-409	2	5	5	9	4	2	2	1	30
350-379		4	2	6	2		3		17
320-349		4	4	4	3		4		19
290-319		1	4	1	3				9
260-280									
230-259				1					1
N	22	50	67	43	49	17	20	1	269
N'	72		110		66		21		
Mean	544.09	461.96	468.28	437.85	467.67	461.00	430.40	408.00	
Standard Deviation	94.26	79.10	110.00	43.85	93.59	31.49	80.59	00.00	

Note.- Mean for national group is 500. Standard deviation for national group is 100.

The most widely dispersed group of scores in this distribution was that of males ranking in the second quarter. The scores ranged from 294 to 703 with a mean of 468.28 and a standard deviation of 110.00. No male in this group scored in the highest three class intervals nor in the lowest two intervals of the table.

Females who ranked in the second quarter scored considerably lower than males in that quarter. No female scored above the interval 560-589, while 8 males, or 5%, scored above this interval. The lowest female score, 237, was more than 50 points below the lowest score, 294, achieved by males. The mean score of women in this quarter was 437.85 and the standard deviation was 43.85.

In terms of percentages, males who ranked in the third quarter outnumbered females in the same quarter by about 2 to 1, or 31% to 16%, respectively. Male scores ranged from 290 to 649 with a mean score of 467.67, and a standard deviation of 93.59. Female scores ranged from 391 to 505 with a mean score of 461.00 and a standard deviation of 31.49. All female scores in this quarter were clustered in the five class intervals 380-409 through 500-529.

By number of subjects, the ratio of men to women ranking in the fourth quarter of their high school classes was 20 to 1. The range of male scores, from 323 to 568, yielded a mean score of 430.40 and a standard deviation of 80.59. The one female ranking in this quarter earned a score of 408.

Mean score values for males in the four separate quarters decreased uniformly from the highest to the lowest rank. This uniformity, however, did not hold for women. While the one female ranking in the fourth quarter earned a score below the mean of each of the other quarters, the mean score of women ranking in the third quarter was higher than the mean score of women in the second quarter, and almost equal to that of women in the first quarter.

Mean scores of males were consistently higher than those of females in each of the four quarters. Nevertheless, with the exception of the mean score of males ranking in the highest quarter, all mean and standard deviation values in this distribution deviated negatively from the national norms.

In Table XXII are found the high school ranks and SAT-Total scores of the subjects in this investigation.

The mean score of 1009 for males in the top quarter exceeded that of any of the other quarters for males or females. The top score in this distribution, 1350, was earned by one male. None of the men or women in this quarter scored below the class interval 730-769, but the top male score was well above the top score of females.

The range of scores of males in the second quarter was from 550, the lowest score earned by males, to 1347. This quarter, as mentioned earlier, constituted the largest proportion of males, 62%, and the scores were again more widely dispersed than those of the other quarters.

TABLE XXII

DISTRIBUTION OF HIGH SCHOOL RANKS AND TOTAL SCHOLASTIC
APTITUDE TEST SCORES OF THE SAMPLE GROUP

SAT-TOTAL Scores	Highest		Second		Ranks Third		Fourth		n
	M	F	M	F	M	F	M	F	
1330 - 1379	1		1						2
1290 - 1329									
1250 - 1289		1	1		1				3
1210 - 1249		2							2
1170 - 1209	1		2		2				5
1130 - 1169	3	2	1	1			1		8
1090 - 1129		2	5	1	3		1		12
1050 - 1089	2	3	2	2	1		1		11
1010 - 1049	5	3	4	2	1	2	4		21
970 - 1009	1	5	5	5	3	3	1	1	24
930 - 969	4	4	5	3	5	3			24
890 - 929	1	6	3	4	9	5			28
850 - 889	1	5	8	9	8	4			35
810 - 849	1	6	5	2	1		2		17
770 - 809	1	6	7	6	1		1		22
730 - 769	1	5	8	5	7		2		28
690 - 729			6	2			2		10
650 - 689			1		2		1		4
610 - 649			1				4		5
570 - 609			1		4				5
530 - 569			1		1				2
490 - 529				1					1
N	22	50	67	43	49	17	20	1	269
N'	72		110		66		21		
Mean	1009.00	930.06	878.13	896.90	879.45	929.23	853.10	978.00	
Standard Deviation	136.03	135.79	196.55	142.76	123.80	54.99	179.02	00.00	

Note.- Mean for entering freshmen group at the University of Houston in the Fall Semester, 1964, is 995.83.

An exceptionally low score of 493, or 225 points below the next lowest score, was earned by one female in the second quarter. All other scores for women in this quarter ranged from 718 to 1151. The score of 1151 was approximately 200 points below the top score earned by males in this quarter.

The mean score of males in the third quarter (879.45) was slightly higher than that of males in the second quarter (878.13), but was considerably lower than the mean score of females in the third quarter (929.23).

The lowest mean score for men, 853.10, was earned by those males in the fourth quarter, yet no male in this quarter scored as low as the low scores recorded in the second and third quarters. The one female ranking in the fourth quarter earned a total score of 978.

With the exception of the mean score of males ranking in the first quarter, all means for both sexes in this distribution were below the mean score of 995.83 earned by the entering freshmen group in the Fall Semester, 1964.

Comparative Data

A comparison of rank in high school class of entering freshmen and Effective Reading and Study students (the sample group) in the Fall Semester, 1964, is shown in Table XXIII. Subtotals (n), totals (N) and percentages of students in each of the quarters are included in the table for both the entering freshmen and the sample groups.

TABLE XXIII

COMPARISON OF RANK IN HIGH SCHOOL CLASS OF ENTERING
FRESHMEN AND THE SAMPLE GROUP IN THE FALL
SEMESTER, 1964

A. Entering Freshmen						
High School Rank in Quarters	M	%	F	%	n	%
Top Quarter	331	35	390	56	793	43
Second Quarter	362	38	243	35	715	37
Third Quarter	200	21	56	08	322	16
Lowest Quarter	58	06	1	01	80	04
N	951	100	690	100	1641	100

B. Sample Group						
High School Rank in Quarters	M	%	F	%	n	%
Top Quarter	22	14	50	45	72	27
Second Quarter	67	42	43	38	110	40
Third Quarter	49	31	17	16	66	25
Lowest Quarter	20	13	1	01	21	08
N	158	100	111	100	269	100

A larger percentage of the sample group than of the entering freshmen group ranked in the second quarter of their high school classes. However, percentages of ranks in the top, third, and fourth quarters were all in favor of the entering freshmen group. More of them, 42%, in contrast to 27% of the sample group ranked in the top quarter. Also, fewer of the total entering freshmen than of the sample group, 16% and 4% respectively, ranked in the third and fourth quarters. One-fourth of the sample group ranked in the third quarter and 8% ranked in the fourth quarter. More women than men, in both groups, ranked in the top quarter.

To facilitate comparison of the entering freshmen group and the sample group under study, with respect to high school rank and SAT-Total scores, these data were tabulated in Table XXIV.

From the score of 1,000 upward, the percentage of entering freshmen exceeded that of the sample group in the highest quarter, but the two groups were very similar in each of the other quarters. From the score of 1,000 downward, with the exception of the highest quarter, the differences in percentages were all in favor of the entering freshmen group. Seventeen members, or 6%, of the sample group scored lower than any of the entering freshmen and none scored as high.

Comparisons of SAT scores and mean scores of entering freshmen and the sample group are shown in Table XXV.

Part "A" of the table contains the number and percentage

TABLE XXIV

COMPARISON OF HIGH SCHOOL RANK AND SCHOLASTIC APTITUDE TEST SCORES OF THE SAMPLE GROUP
AND ENTERING FRESHMEN AT THE UNIVERSITY OF HOUSTON IN THE FALL SEMESTER, 1964

A. Ranks of Entering Freshmen in Quarters															
SAT-Total Scores	Highest		%	Second			Third			Fourth			n	%	
	M	F		M	F	%	M	F	%	M	F	%			
1400-1499	3		01-	4		01-							7	01-	
1300-1399	18	9	02	7	2	01-							36	02	
1200-1299	34	33	04	32	6	02	9	1	01	3		01-	118	07	
1100-1199	78	67	09	58	19	05	26	2	02	12		01	262	16	
1000-1099	55	100	09	104	37	09	93	8	06	13	1	01	411	25	
900-999	36	87	07	68	68	08	38	32	04	9		01-	338	20	
800-899	27	54	05	47	60	07		13	01	21		01	222	14	
700-799	80	40	07	42	51	06	34		02				247	15	
N	331	390	43	362	243	37	200	56	16	58	1	04	1641	100	
N'	721			605			256			59					

B. Ranks of Sample Group in Quarters															
SAT-Total Scores	Highest		%	Second			Third			Fourth			n	%	
	M	F		M	F	%	M	F	%	M	F	%			
1400-1499															
1300-1399	1		01-	1		01-							2	01-	
1200-1299		3	01	1		01-	2		01-				6	02	
1100-1199	4	3	03	8	1	03	3		01	1		01-	20	08	
1000-1099	7	7	05	7	7	05	3	2	02	7		02	40	15	
900-999	6	13	07	12	9	08	13	10	09	9	1	01	64	24	
800-899	2	15	06	16	15	11	13	5	07	2		01-	68	25	
700-799	2	9	04	18	10	10	8		03	5		02	52	19	
Below 700				4	1	02	7		02	5		02	17	06	
N	22	50		67	43		49	17		20	1		269		
N'	72			110			66			21					

Note.- Mean for Entering Freshmen group at the University of Houston in the Fall Semester, 1964, is 995.83.

TABLE XXV

COMPARISONS OF SAT SCORES (A) AND MEAN SCORES (B)
BETWEEN SAMPLE GROUP AND FRESHMEN

A.									
Verbal Score					Mathematical Score				
	Sample		Freshmen			Sample		Freshmen	
	N	%	N	%		N	%	N	%
Above 500	70	26	715	44		89	33	840	51
Below 500	199	74	926	56		180	67	801	49
Total Score									
	Sample		Freshmen						
	N	%	N	%					
Above 1000	68	25	834	51					
Below 1000	201	75	807	49					
B.									
	Sample		Freshmen		Difference		t	P	
Mean Verbal	438.65		489.51		50.86		9.14	.0005	
Mean Math	464.83		506.32		41.49		7.15	.0005	
Mean Total	903.48		995.83		92.35		8.79	.0005	

of each of the groups scoring both above and below the national mean of 500 for the SAT-V and the SAT-M, and above and below 1,000 for the SAT-Total.

On the SAT-V, 74% of the sample group, but only 56% of the entering freshmen group, scored below the national mean of 500. On the SAT-M, 51%, or about half of the entering freshmen group scored above the national mean, while 33%, or about one-third of the sample group scored that high. Both groups scored slightly higher on the SAT-M than on the SAT-V.

The sample group had a slightly smaller percentage scoring above 1,000 on Total scores than scored above the means on either the SAT-V or SAT-M. The percentage of entering freshmen earning total scores above 1,000 fell between the percentages scoring above the means for their two part scores.

The average total score of the entering freshmen group (995.83) was a close approximation of the total score of 1,000 upon which the University of Houston bases one of its entrance requirements. The average total score of the sample group (903.48), for men and women combined, was a greater negative deviation from this standard.

Part "B" of the table contains comparisons of the three mean scores of the sample group and the entering freshmen group. The t test was applied to the differences between the means of the two groups for each of the three score distributions. These differences along with their t values and levels

of significance are shown in the table. Each of the differences was found to be significant at the .0005 level of confidence. Only 5 times in 10,000 would a difference this great, for each of the sets of scores, occur by chance alone.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was two-fold: (1) To describe a group of college students enrolled in a special course; "Effective Reading and Study," and, (2) to compare this group on a number of variables with the freshmen students of which they were a sample. Answers were sought to such questions as: What are the main characteristics of the students who completed this special course? What are their reading habits? What is the distribution of grades in the course? How many work at jobs? What are their majors? Are they enrolled one year later? How do they compare with the freshmen group of which they are a sample?

The subjects for this study were 269 freshmen, each of whom were enrolled in one of the eighteen sections of "Effective Reading and Study" taught that semester. Only those freshmen who took the course for credit, who completed all requirements of the course and were assigned a final letter grade of A, B, C, D, or F were included in this study. All of the subjects were required to have taken the Scholastic Aptitude Test and to have their scores available in University of Houston files. Further, all subjects were required to have completed a personal data inventory giving background

information in three broad areas: general, educational, and counseling.

Data obtained from the personal data inventories were used in the descriptive analysis of the sample group and were presented in Tables I through X in Chapter IV. Other descriptive measures of the subjects included grade point averages at the end of the first semester in college, the grade earned in the course "Effective Reading and Study," the choice of major field of study, and the number still enrolled in the University of Houston in the Fall Semester, 1965. These data were presented in Tables XI through XV in Chapter IV. Tabulations of SAT scores and high school rank were presented in Tables XVI through XXII.

Findings - Descriptive

1. Male subjects ranged in age from 17 to 39 years and female subjects, from 17 to 33 years. The median age of each sex was 18 years and the greater proportion of each was single.

2. Forty-four per cent of the males and 50% of the females had graduated from high schools in the Houston Independent School District. Only 15% of each sex had graduated from high schools outside Texas. The majority of subjects had been out of high school five years or less, with 81% of both sexes combined having graduated in 1964.

3. Only one male reported "very low" grades in high school and 7 males and 2 females reported "below average" grades. Seventy-three and 48% of males and females, respectively, listed their high school grades as average. Twenty-two per cent of the men and 50% of the women indicated having received "above average" grades in high school.

4. Forty-five per cent of the men and 59% of the women had selected majors in the College of Arts and Sciences. The second largest proportion of men (25%), had chosen majors in the College of Business Administration, while the remainder were scattered among 5 other colleges. Thirty-eight per cent of the women were majoring in Education with the remaining three, or 3%, having chosen majors in Business Administration.

5. Seventy per cent (106) of the males and 74% (82) of the females were not employed at the beginning of the Fall Semester, 1964. The median number of hours of employment of males was twenty and that of females was 25 hours per week.

6. The greatest number of parents of both sexes were checked as reading "occasionally," the next largest number as reading "much," and fewest as reading "rarely."

7. Sixty per cent, or 89 of the males and 76%, or 82 of the females categorized the quality of English spoken in their homes as "good" and both sexes classified the English spoken by childhood playmates as inferior to that spoken in their homes. Only 7 males and one female indicated a poor

quality of English having been used in their homes.

8. Of the three handicaps, speech, hearing and visual, by far the greatest number of subjects reported visual impairment. Sixty-one men (39%) and 66 women (60%) wore glasses, whereas only ten men and 6 women had experienced speech difficulty and only 4 men and 3 women reported hearing losses.

9. More males, 56%, reported reading the sports page daily than either of the other pages of the newspaper, while more females, 50%, read the front page daily. The editorial page was least often read by both sexes.

10. Three men and 8 women had read more than 15 books in addition to class texts or references in the preceding twelve month period. One male had read 21 books, one had read 28, and the other had read 20. Two females had read from 12 to 21 books, one had read 25, one had read 36, 3 had read from 49-51, and one had read 52 books within the last year. The median number of books read by both sexes was from 4 to 6.

11. The mean grade point average of all subjects combined was 1.9 or slightly below the "C" average (2.0) required for graduation. Female subjects earned a mean grade point average of 2.04 while that of males was 1.82. Application of the t test, however, yielded no significant difference.

12. The records revealed that 103, or 38%, of the sample group had dropped out of the University of Houston in the Fall Semester, 1965. Of the 166 subjects still enrolled,

53 per cent of the males and 30 per cent of the females had changed majors. Forty-one per cent of the males were majoring in General Business Administration (GBA) and an additional 20 per cent were majoring in Health and Physical Education (HPE). Forty-three per cent of the female subjects were majoring in Education; 30 per cent in the specific area of Elementary Education.

13. The greatest change in major fields of study of both sexes was from the unspecified status in the College of Arts and Sciences. Thirty-one males and 15 females changed from General Arts and Sciences to a definite major field of study. Seven males transferred from Business Education and 6 transferred from Secondary Education (SED) to other fields of study. A total of 54, or 53%, of the males still enrolled had changed from their original major in 1965. Few changes were made by females aside from the General Arts and Sciences (unspecified) category. One female transferred from Journalism, two from Mathematics, one from Psychology, and one from Elementary Education (EED) to another field of study. A total of 20, or 30%, of the female subjects still enrolled had changed majors in the Fall Semester, 1965.

14. In the Fall Semester, 1965, a total of 92 students, 47 males and 45 females had made no change in choice of major field of study.

15. Grades earned in "Effective Reading and Study" were found to be higher for females than for males. Thirty-six

per cent of the female subjects in contrast to 8 per cent of the male subjects earned a grade of "A," whereas 2% of the females and 9% of the males earned an "F" grade. Among all students 53% earned an "A" or a "B." Only 18% had "D's," or "F's."

16. The mean difference of 36.55 between male and female scores on the SAT-V was found to be significant at the .0010 level of confidence. Only 10 times in 10,000 would a difference this great occur by chance. The t value here was 3.43; the difference favoring female subjects. The combined male and female scores yielded a mean score of 438.65 which was below the national mean of 500 for this test.

17. On the SAT-M the scores of males were higher than those of females and also higher than male scores on the SAT-V. The difference of 22.44 between male and female mean scores, with a t value of 2.03 was found to be significant at the .05 level of confidence. A difference this great would have occurred by chance only 5 times in 100. This difference is in favor of males.

18. Female subjects earned a higher mean score on the SAT-Total than male subjects. The difference of 23.89, with a t of 2.22 was found to be significant at the .05 level. Only five times in 100 would a difference this large occur by chance alone. The mean combined score was 903.48.

19. High school ranks of the subjects with respect to their graduating classes again placed female subjects in the

more favorable light. Forty-five per cent of the females, the largest proportion, graduated in the top quarter and only one female graduated in the lowest quarter of her high school class. Males graduating in the top and lowest quarters of their high school classes were 14 and 13%, respectively. The largest proportion of males, 67, or 42%, graduated in the second quarter of their high school classes.

20. A comparison of SAT-V scores with high school ranks revealed a considerable lack of consistency between the two. The male who earned the highest score graduated in the second quarter of his class while the 5 males who earned the lowest scores graduated in the second and third quarters of their high school classes. The highest female scores were earned by those subjects graduating in the top quarter of their classes, but the one female who graduated in the lowest quarter of her class had only nine females score above her. This reflects the lack of uniformity in grading standards from one school system or from one region to another. Table II in Chapter IV reveals that this sample group represents not only other high schools in Harris County, and in the state of Texas, but also high schools in other states in the nation.

The mean score of females in each of the quarters was higher than that of males. All mean scores were below the national mean with the exception of the female who ranked in the lowest quarter. Her score of 570 was well above the national norm of 500.

21. Male subjects made their best showing on the SAT-M. Those males who graduated in the top quarter of their high school classes earned a mean score of 544.09, which is considerably above the national mean. The same inconsistency between rank and score was shown in the SAT-M as in the SAT-V distribution. The lowest female score occurred in the second quarter. No male who graduated in the lowest quarter of his high school class scored as low as seven males who graduated in the second and third quarters. Mean scores of males were consistently higher than those of females in each of the four quarters.

22. In comparing SAT-Total Scores and high school ranks, male subjects in the highest quarter exceeded all other scores in this distribution, and also exceeded the mean of 995.83 earned by the entering freshmen group. All other mean scores of both sexes were well below that of the entering freshmen group. The lowest mean (878.13) was earned by those males in the second quarter of their high school graduating classes.

Findings - Comparative

23. A larger percentage of the sample group than of the entering freshmen group ranked in the second quarter of their high school classes. However, percentages of ranks in the top, third, and fourth quarters are all in favor of the entering freshmen group. More of them, 42%, in contrast to

27% of the sample group, ranked in the top quarter. Also, fewer of the entering freshmen than of the sample group, 4% and 17%, respectively, ranked in the third and fourth quarters. One-fourth of the sample group ranked in the third quarter and 8% ranked in the fourth quarter. More women than men, in both groups, ranked in the top quarter.

24. From the total score of 1,000 upward, the percentage of entering freshmen exceeded that of the sample group in the highest quarter, but the two groups were very similar in each of the other quarters. From the score of 1,000 downward, with the exception of the highest quarter, the differences in percentages are all in favor of the entering freshmen group. Seventeen members, or 6%, of the sample group scored lower than any of the entering freshmen and none scored as high.

25. Larger percentages of the entering freshmen than of the sample group scored above the national mean on both the SAT-V and the SAT-M. On the SAT-Total, 75% of the sample group, as opposed to 53% of the entering freshmen group, scored below 1,000.

The t test was applied to the differences between the means of the two groups for each of the three score distributions. Each of the differences was found to be significant at the .0005 level of confidence. Only 5 times in 10,000 would a difference this great, for each of the sets of scores, occur by chance alone.

Recommendations

On the basis of the information obtained from this investigation the following recommendations appear to be warranted:

1. That, inasmuch as this study was limited in that it was the first to be conducted with students participating in a reading course at the University of Houston, further analyses of reading students in subsequent semesters be made,
2. That, since this study indicates that students electing to take "Effective Reading and Study" are not representative of the groups of which they are samples, material and instructional programs of the reading course be designed for aid to the "below average" college freshman,
3. That descriptive data be collected from reading students each semester which may be used in further studies of their reading skills and aptitudes.

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