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**A study of the achievement and related factors of Kappa Delta Pi members at Indiana State Teachers College for the years 1926-1932**

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A STUDY OF THE ACHIEVEMENT AND RELATED FACTORS OF  
KAPPA DELTA PI MEMBERS AT INDIANA STATE  
TEACHERS COLLEGE FOR THE YEARS  
1926-1932

by

Hope V. Higgins

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INDIANA STATE  
NORMAL SCHOOL

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## I. STATEMENT OF PROBLEM

### A. Introduction

Kappa Delta Pi is an international honor society in education which was established and incorporated under the laws of the State of Illinois as an Honorary Educational Fraternity in June, 1911. Its purpose as described in the constitution is: "To encourage in its members a higher degree of consecration to social service. To this end it shall maintain the highest educational ideals and shall foster fellowship, scholarship, and achievement in educational work." The Alpha Kappa Chapter of Kappa Delta Pi was installed at Indiana State Teachers College in February, 1926. It was the first honor society to be established at the college.

This study purposes to consider the scholastic achievement and related factors of the two hundred fifty-nine members who had been elected to membership in the Alpha Kappa Chapter before the summer of 1932. A study of the scholarship indices of the members was made necessary in order to work out a new basis for election of students to membership. The requirements for eligibility which had been in use since 1926 were felt to be clumsy and unjust. Under these requirements a student must have forty per cent A's and a B average to be eligible to membership. In many cases students whose scholarship indices were higher than some of those who were elected were excluded because



of the forty per cent ruling. The school has recently adopted the scholarship index as the measure of student scholastic achievement and it was felt that the same measure should be used as a basis for election to Kappa Delta Pi.

It was also considered desirable to determine whether there was any appreciable difference in scholarship before election and after election to Kappa Delta Pi-- whether having attained the honor there was a let down in effort or whether the honor seemed to spur on to greater endeavor.

The relation of intelligence to scholarship and whether Kappa Delta Pi members owed their honors largely to native endowment or to hard work was another interesting problem to be considered.

The question also arose as to how the professional scholarship of Kappa Delta Pi members compared with their academic scholarship. How the Kappa Delta Pi members were distributed among the various major departments and how they compared with the number graduating in each department each year was another problem that was considered worthy of investigation. Another problem that arose was one concerning the geographical distribution of Kappa Delta Pi members and the comparison of the enrollment of each county with the number of students from that county elected to Kappa Delta Pi.

## B. Organization of Problem

The intelligence percentiles, scholarship before election to Kappa Delta Pi, scholarship after election, professional scholarship, major subjects, and the names of the counties from which members received their high school education, are the materials upon which this study is based. This material was collected for all members initiated during the years from 1925-1926 to 1931-1932 inclusive. These materials are presented and analyzed in different divisions of the study under the following headings:

1. A Study of Scholarship of Kappa Delta Pi Members.
2. Comparison of Scholarship before Election and Scholarship after Election.
3. Relationship of Intelligence and Scholarship of Kappa Delta Pi Members.
4. Comparison of Professional Scholarship and Academic Scholarship.
5. A Study of the Distribution of Members among the Various Major Departments.
6. A Study of the Geographic Distribution of Kappa Delta Pi Members.

## II. GENERAL PROCEDURES

### A. Collection of Data

The names of the students who were elected to membership in Kappa Delta Pi during the years 1926 to 1932 and the dates of their election to membership were obtained from the Kappa Delta Pi records in the office of the counselor, Dr. W. O. Shriner.

Data sheets were prepared for each of these students, a sample of which appears in the Appendix, page a. These sheets were then taken to the Office of the Registrar where the necessary items were taken from the record cards.

### B. Preliminary Calculations

From the Office of the Registrar were obtained the number of A's, B's, C's, D's, and F's before election to Kappa Delta Pi, and the number of A's, B's, C's, D's, and F's after election to Kappa Delta Pi; the number of A's, B's, C's, D's, and F's in professional courses; the majors; and the names of the high schools from which the members graduated and the county location of these high schools. Scholarship indices were calculated from the grades.

1. The Scholarship Index. The scholarship index is the total number of honor points divided by the total number of credit points. In four-hour courses the different grades have the following honor point values: A = 4, B = 3, C = 2, D = 1, F = 0. The credit point value of any course is the number of hours credit for the course. Grades in one-hour

courses receive one-fourth the honor point values of grades in four-hour courses. Grades in two-hour courses receive one-half the honor point values of grades in four-hour courses. Grades in three-hour courses receive three-fourths the honor point values of grades in four-hour courses. Grades in five-hour courses receive five-fourths the honor point values of grades in four-hour courses.

2. Special Considerations in Figuring Indices. In calculating the scholarship indices, deferred credits and incompletes were omitted and NP's were included with the F's. Some of the members had records made under the grading system used by the school before 1913. This system consisted of the marks, P, meaning passed, P+, P-, and NP, meaning not passed. In evaluating this system, P+'s were considered as being midway between A's and B's of the present system in honor point value and were allowed  $3\frac{1}{2}$  honor points. P's were considered as being midway between B's and C's and allowed  $2\frac{1}{2}$  honor points, and P-'s were considered as being midway between C's and D's and allowed  $1\frac{1}{2}$  honor points. NP's being the same as F's were allowed no honor points. This assignment of values should give a fair estimate in considering the grades of a large number of students, but it is probably not very fair for the student who, had he been marked under the new system would have received a large majority of A's. For if he had the highest possible grades under the old system his index could

not exceed 87.5, while under the new marking system he could receive 100. Two of the students did actually make an index of 99.

The system of grading in use in the school from 1913-1950 was a five point system, similar to the one in use now, except that P was used in place of the mark D in the present system. Such P's were given the same honor point value as the D.

#### C. Arrangement and Numbering of Cases

The completed data sheets were arranged in alphabetical order and numbered from 1 to 259 inclusive. Of these 259 members, twelve were honorary members and there were no records of their scholarship on file. Data concerning these students are not included in the study.

#### D. Statistical Calculations

Uniform statistical procedures were used in each section of the study.

The arithmetic mean and the standard deviation were used as the measures of central tendency and dispersion throughout the study. H. E. Garrett states that these measures are the ones to be used when measures of reliability and coefficients of correlation are to be calculated.<sup>1</sup>

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<sup>1</sup> H. E. Garrett. Statistics in Psychology and Education.  
Longmans Green Company. 1925. pp. 50-51

The arithmetic mean was calculated for each distribution. The formula used in these calculations was  $M_x = \frac{\sum x}{n}$ .

The standard deviations were figured for all distributions. The formula used in the calculation of the standard deviation was  $S. D. = \sqrt{\frac{\sum x^2}{n} - M_x^2}$ . This formula and the one above for the mean are the same as the ones given by F. C. Mills<sup>2</sup> except that the notation  $M_x$  to indicate the mean has been substituted for his notation,  $c_x$ .

The product-moment method of correlation, ungrouped data, described by F. C. Mills<sup>3</sup>, was used throughout the study. Coefficients of correlation were calculated for the measures compared in each section of the study.

Probable error, being the most common measure of reliability, was employed throughout the study. The probable error of each arithmetic mean, standard deviation, and coefficient of correlation was computed. Formulas used in these computations were:

$$P. E. M = .6745 \frac{\sigma}{\sqrt{n}}$$

$$P. E. \sigma = .7071 P. E. M$$

$$P. E. r = .6745 \frac{(1 - r^2)}{\sqrt{n}} *$$

In studying the difference between the means of correlated items, the formula used for the probable error

<sup>2</sup> F. C. Mills. Statistical Methods. Henry Holt and Company. 1924. pp. 50-51.

<sup>3</sup> Ibid. pp. 388-390.

\* K. J. Holzinger. Statistical Methods for Students in Education. Ginn and Company. 1928. p. 352.

of the difference was:

$$P.E._{M_1-M_2} = \sqrt{(P.E._{M_1})^2 + (P.E._{M_2})^2 - 2r(P.E._{M_1})(P.E._{M_2})} \quad *$$

This formula was used in all comparisons, since all comparisons in this study involve correlated data.

Coefficients of variation were used in comparing the variability of the distributions. These were calculated for each group of measures, employing the formula,

$$V = \frac{100 \sigma}{M} \quad **$$

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\* K. J. Holzinger. Statistical Methods for Students in Education. 1938. pp. 352.

\*\* H. E. Garrett. Statistics in Psychology and Education. Longmans Green Company. 1926. pp. 42-44

### III. A STUDY OF THE SCHOLARSHIP OF KAPPA DELTA PI MEMBERS

#### A. Presentation of Material

The scholarship before election to Kappa Delta Pi and the scholarship after election to Kappa Delta Pi were totalled for each member and from this total the scholarship index was figured. The indices thus obtained represent the scholastic attainment of each of the members during the entire period of their attendance at Indiana State Teachers College. These indices were arranged in a frequency table, Table I, page 10.

#### B. Analysis and Results

This section of the study is based on two hundred forty-seven cases. There are twelve of the members, who were initiated during the period 1926-1932, who are honorary members and for whom no scholarship data are obtainable from the school records.

A study of the data sheets reveals that:

(1) The range of the scholarship indices of the Kappa Delta Pi members is 35.53.

(2) The highest scholarship index is 99.55, which was made by Student Number 41, a man.

(3) The lowest scholarship index is 64.02, which was made by Student Number 25, a woman.

(4) The five lowest indices were made by students the majority of whose grades were made under the



Table I  
 DISTRIBUTION OF SCHOLARSHIP INDICES OF  
 KAPPA DELTA PI MEMBERS

Scholarship	Number of Students
99.-99.99	2
98.-98.99	6
97.-97.99	4
96.-96.99	6
95.-95.99	7
94.-94.99	3
93.-93.99	9
92.-92.99	9
91.-91.99	18
90.-90.99	7
89.-89.99	9
88.-88.99	15
87.-87.99	17
86.-86.99	15
85.-85.99	20
84.-84.99	14
83.-83.99	20
82.-82.99	16
81.-81.99	13
80.-80.99	10
79.-79.99	11
78.-78.99	4
77.-77.99	3
76.-76.99	5
75.-75.99	1
74.-74.99	1
73.-73.99	0
72.-72.99	0
71.-71.99	0
70.-70.99	0
69.-69.99	0
68.-68.99	1
67.-67.99	0
66.-66.99	0
65.-65.99	0
64.-64.99	1

marking system used prior to 1913. This fact seems to indicate that the inclusion of these students' record has considerably increased the range and lowered the mean of the group.

(5) If these five cases were excluded from the study, the range in scholarship would be 23.36 and the lowest scholarship index, 76.19, made by Student Number 63, a man.

Using the data of Table I, page 10, the mean scholarship of the members of Kappa Delta Pi during the years 1926-1932 was found to be 86.71 with a probable error of .25. The standard deviation of this group is 5.81 with a probable error of .18.

If the five lowest indices be omitted, as previously suggested, the mean would be 87.52 with a probable error of .23. The standard deviation would be 5.42 with a probable error of .17.

### C. Conclusions.

1. Central Tendency. The mean of this group of Kappa Delta Pi members is  $86.71 \pm .25$  in scholarship, as stated above. The true mean then is certain to fall somewhere within the limits of the obtained mean minus four times its probable error and the obtained mean plus four times its probable error.<sup>4</sup> The true mean, therefore, will fall

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<sup>4</sup> H. E. Garrett. Statistics in Psychology and Education. Longmans Green Company. 1926. pp. 133-135.

between 85.71 (86.71 - 1.00) and 87.71 (86.71 + 1.00).

No information is available as to the mean scholarship index for the school. For this reason no reliable conclusions can be drawn regarding the standing of Kappa Delta Pi members in comparison with school standards. One study was made by Robert K. Devricks of the scholarship indices of all undergraduate students who were attending school during the fall term of 1932. His findings may be obtained in the Office of the Registrar. He reports the median of the students studied as 56.25. The mean is not reported. Using the frequency distribution of Mr. Devrick's study, the mean was found to be 55.56. If the undergraduate enrollment of the fall term of 1932 can be considered as typical of the school population, it can be seen that the Kappa Delta Pi members rank well above the average of the school.

2. Variability. The standard deviation of the group of Kappa Delta Pi members, which is 5.81, indicates that sixty-eight per cent of the members would range between 80.90 and 92.52 in scholarship. The coefficient of variation, 6.70, indicates very low variability, which would be expected because of the fact that Kappa Delta Pi members are a selected group.

#### IV. SCHOLARSHIP OF KAPPA DELTA PI MEMBERS BEFORE AND AFTER ELECTION TO MEMBERSHIP

##### A. Presentation of Materials

Table II, pages 14-19, shows the scholarship index before election and the scholarship index after election of each of the two hundred thirteen members of Kappa Delta Pi, for whom this information was available. The data of this table form the basis for a comparison of the scholastic achievement of Kappa Delta Pi members before and after election to membership.

##### B. Analysis and Results

It will be noted that Table II, pages 14-19, does not include thirty-four of the members included in other sections of this study. These members had not made any credits after election and were omitted for that reason.

A study of the table shows that:

(1) The range of the scholarship indices before election was 26.85; of the scholarship indices after election was 35.71.

(2) The highest scholarship index made before election was 100, which was made by Student Number 66, a woman.

(3) The lowest scholarship index before election was 73.15, which was made by Student Number 167, a woman.

(4) The highest scholarship index after election

Table II

SCHOLARSHIP OF STUDENTS BEFORE AND AFTER ELECTION TO  
KAPPA DELTA PI

Student No.	Index Before Election	Index After Election
2	84.48	75.
3	97.92	97.22
4	83.82	70.83
6	83.59	91.18
7	86.51	94.44
8	90.63	87.5
9	89.29	86.36
11	87.5	75.
12	84.44	75.
13	76.86	91.67
15	84.66	100.
16	83.73	81.06
17	86.93	93.75
18	92.31	83.70
19	92.50	100.
20	85.94	92.11
21	80.	93.75
26	83.07	89.71
27	82.76	83.75
28	77.46	100.
29	86.11	36.11
30	87.96	85.94
31	95.	90.63
32	76.83	75.
33	90.73	95.83
34	84.63	87.5
35	93.34	91.67
36	92.35	100.
38	90.63	100.
39	80.88	87.5
40	94.22	95.83
41	99.54	100.
42	83.33	85.
43	82.58	80.
44	81.67	89.29

Table II (continued)

45	92.35	87.5
46	92.31	95.
47	90.74	84.38
49	85.42	82.14
50	90.96	91.67
51	89.13	88.79
52	87.74	93.75
53	83.79	93.75
54	85.19	100.
55	82.07	83.33
56	79.	100.
58	93.6	100.
59	79.	81.82
60	80.36	87.5
61	90.13	100.
62	83.65	75.
63	78.45	71.15
65	83.82	86.92
66	100.	93.75
67	87.60	94.44
71	96.28	100.
72	95.59	94.44
73	85.23	68.75
75	84.88	90.
76	88.71	83.82
77	83.33	83.82
78	83.52	100.
79	82.24	87.5
80	79.73	75.
81	81.94	89.58
83	86.14	95.
85	82.64	76.92
86	88.28	90.48
87	83.04	87.5
88	90.97	98.53
89	87.04	84.38
90	84.	87.5
91	81.45	86.54
93	88.46	96.59
94	88.92	91.67

Table II (continued)

95'	95.38	100.
97	84.72	93.75
98	75.72	85.
99	84.26	97.3
100	81.11	66.67
102	82.55	88.64
103	81.25	84.87
104	86.84	83.33
105	74.5	87.5
107	90.	95.
108	83.33	87.5
109	83.33	100.
110	92.86	95.24
111	79.46	79.63
112	81.58	94.44
113	83.33	81.83
114	89.29	67.19
116	84.04	90.
117	85.63	78.13
118	91.07	100.
119	94.64	95.83
121	96.96	88.64
122	83.33	98.86
123	73.72	100.
124	95.	98.61
125	83.21	95.83
126	83.37	87.5
127	94.57	85.71
130	89.86	97.92
131	96.89	100.
132	98.62	100.
133	81.25	100.
134	84.38	94.79
135	84.42	81.67
136	86.18	87.5
137	92.97	99.04
138	79.55	75.
139	93.18	95.83
140	83.11	85.
142	85.5	89.77

Table II (continued)

143	90.63	89.06
144	73.36	85.71
145	84.66	93.75
146	83.07	90.
147	84.89	97.32
148	82.13	100.
149	80.19	87.5
151	88.5	91.67
152	88.64	90.
153	96.15	93.75
154	82.81	87.5
155	96.88	96.
156	83.88	69.44
159	90.63	94.44
161	85.94	84.38
162	79.46	89.29
163	84.62	100.
164	85.91	87.29
165	96.88	97.32
166	82.5	87.5
167	73.15	86.
168	91.03	91.67
169	95.95	88.46
170	83.33	72.5
171	73.5	100.
172	99.44	96.59
174	81.08	94.44
175	86.22	100.
176	95.67	100.
177	85.19	96.43
178	87.5	87.
179	79.91	100.
180	85.42	97.62
182	86.72	78.13
183	84.71	91.67
184	75.86	90.
185	86.59	91.67
186	81.58	78.57
187	86.61	100.
188	79.27	82.14



Table II (continued)

190	90.13	92.85
191	81.76	64.29
192	87.68	100.
193	81.25	90.
195	82.5	85.42
196	86.81	91.67
197	93.06	87.5
198	96.25	95.
199	79.07	92.19
200	79.23	85.23
201	84.48	88.16
202	80.88	100.
203	92.39	100.
204	88.11	93.18
205	82.03	83.82
206	80.62	96.42
207	76.92	97.92
209	92.11	84.88
210	88.46	85.71
212	86.54	90.56
213	87.78	87.5
214	95.83	100.
215	90.15	96.15
216	84.72	85.
217	84.7	100.
218	89.17	83.33
219	86.57	96.94
220	80.56	81.25
221	92.22	96.88
222	87.07	98.39
223	81.25	82.5
225	85.74	80.
226	87.5	93.75
227	88.56	96.88
228	87.14	88.64
229	90.26	97.22
230	87.88	100.
231	87.3	100.
232	90.71	87.5
233	93.33	96.88

Table II (continued)

235	86.11	82.5
236	84.34	95.
238	81.25	87.5
242	81.38	87.5
244	83.67	75.
245	99.46	96.88
247	99.12	97.5
248	90.63	93.18
249	98.11	100.
251	99.31	95.83
252	85.58	97.73
253	85.71	83.33
254	94.44	97.82
255	84.78	90.
256	87.5	81.25
257	88.	87.5
258	98.25	100.
259	85.63	65.63

was 100, which was made by thirty-five different students, twenty-six women and nine men.

(5) The lowest scholarship index after election was 64.29, which was made by Student Number 191, a woman.

The results of the calculations of the arithmetic means and standard deviations of the scholarship indices before and after election are shown below in Table III, below.

Table III  
MEANS AND STANDARD DEVIATIONS OF KAPPA DELTA PI  
MEMBERS BEFORE AND AFTER ELECTION  
TO MEMBERSHIP

Measure	Scholarship Before Election	Scholarship After Election
Mean and P. E.	86.60 ± .26	90.04 ± .38
S. D. and P. E.	5.61 ± .18	8.22 ± .27

The table is to be read as follows: The mean for the scholarship indices of the members before election is 86.60 with a probable error of .26; the mean for the scholarship indices after election is 90.04 with a probable error of .38. The standard deviation for the group before election is 5.61 with a probable error of .18; and after election it is 8.22 with a probable error of .27.

### C. Conclusions

1. Central Tendency. It will be seen in Table III, page 20, that the mean of the students in scholarship is higher after election than it is before election, the difference being 3.44. A study of the reliability of this difference is shown in Table IV, below.

Table IV

RELIABILITY OF THE DIFFERENCE BETWEEN SCHOLARSHIP BEFORE  
AND AFTER ELECTION TO MEMBERSHIP

Mean Scholarship Before Election	Mean Scholarship After Election	Dif- ference	Favor	P. E. Differ- ence	Signi- ficant Ratio
86.60 $\pm$ .26	90.04 $\pm$ .38	3.44	After	.38	9.05

In interpreting Table IV, above, it will be seen that there is a difference of 3.44 in favor of the scholarship after election, as previously mentioned. The probable error of this difference is .38. The difference divided by its probable error gives its significant ratio, in this case 9.05. A significant ratio of four or over indicates complete reliability or 100 chances in 100 of a true difference greater than zero.<sup>6</sup> Therefore, it is safe to conclude that the scholarship of Kappa Delta Pi members is higher after election to membership than it is before election to membership. This fact proves that there was no general let down in effort after election to Kappa Delta Pi and tends

<sup>6</sup> H. E. Garrett. Statistics in Psychology and Education. Longmans Green Company. 1926. p. 134.

to show that the members were probably spurred on to greater endeavor. The fact that, after election to membership the student is in the senior college and has more chance for selection of courses, may have had some influence in raising the scholarship. Students are likely to select subjects for which they have the most aptitude. Other factors that may tend to influence the scholarship index after election are facts that the students are more mature and for that reason more serious, and that they may have established a reputation that would tend to help them make higher grades.

2. Variability. The coefficient of variation of the group before election to membership is 6.48, and after election to membership it is 9.13. The group, therefore, is 71.0 per cent ( $6.48 / 9.13$ ) as variable in scholarship before election as after election. The range of scholarship and, therefore, to some extent the variability is limited at the time of election by the eligibility requirements. Students who fall below certain requirements are not elected; but after election they may fall below these requirements, as a few of them actually did. This fact accounts for the increase in variability after election.

3. Correlation. The coefficient of correlation between scholarship before election and scholarship after election

was found to be .3583 with a probable error of .0403. The true coefficient of correlation is sure to be somewhere within the limits of the obtained coefficient minus four times its probable error and the obtained coefficient plus four times its probable error.<sup>7</sup> In the case of scholarship before election and scholarship after election, the true coefficient must be between .198 and .518. Mac Phail quotes Rugg and says "when  $r$  ranges from .15 or .20 to .35 or .40 correlation is present but low; when  $r$  ranges from .35 or .40 to .50 or .60 correlation is markedly present."<sup>8</sup> It would appear from the rather low coefficient of correlation that the students who are the highest in scholarship before election to Kappa Delta Pi are not always the highest after election, and that comparative rankings within the group changed somewhat.

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<sup>7</sup> H. E. Garrett. Statistics in Psychology and Education. Longmans Green Company. 1926. pp. 170-171.

<sup>8</sup> A. H. MacPhail. The Intelligence of College Students. Warwick and York, Inc. 1924. p. 128.

## V. A STUDY OF INTELLIGENCE PERCENTILES AND SCHOLARSHIP INDICES

### A. Presentation of Materials

The intelligence percentiles of the members of Kappa Delta Pi were obtained from the Division of Research of the Indiana State Teachers College. Because intelligence testing was not begun until the fall of 1922 and students who had entered school previous to that time were excused from the tests, percentiles could not be secured for the entire group. Percentiles were available for one hundred forty-nine of the students considered in this study.

Table V, pages 25-28, shows the intelligence percentiles and scholarship indices of the one hundred forty-nine Kappa Delta Pi members concerning whom these data could be obtained.

### B. Analysis and Results

A study of Table V, pages 25-28, reveals the following facts:

(1) The range of the intelligence percentiles is 86, and that of the scholarship indices is 23.36.

(2) The highest intelligence percentiles are 100, made by three students, Number 124, Number 128, and Number 244, all women.

(3) The lowest intelligence percentile is 14,

Table V

INTELLIGENCE PERCENTILES AND SCHOLARSHIP INDICES  
OF KAPPA DELTA PI MEMBERS

Student No.	Intelligence Percentiles	Scholarship Index
2	78.	83.37
4	72.	80.43
6	73	86.22
7	91	90.48
8	86	89.29
9	93	88.81
10	14	84.22
12	85	84.25
13	54	77.75
14	97	84.13
15	24	85.94
16	79	82.81
17	95	87.5
18	53	82.27
19	85	93.75
20	91	88.24
21	92	81.25
27	95	83.16
29	99	86.11
30	97	86.86
36	98	92.65
39	90	81.58
40	90	94.42
41	60	99.55
42	79	84.38
43	93	82.39
44	94	83.48
46	94	92.74
47	94	87.75
49	81	85.07
51	96	89.03
52	80	88.52
55	82	82.14
59	88	80.32
60	95	81.94



Table V (continued)

62	84	80.92
63	46	76.19
64	68	76.92
65	97	85.86
66	99	98.21
71	86	96.88
73	95	83.45
76	98	86.98
78	94	84.90
79	96	82.42
80	79	79.07
95	99	80.70
86	65	89.15
87	98	84.03
89	98	86.28
90	98	79.87
91	94	82.56
93	82	92.19
97	84	85.26
100	93	80.21
103	86	83.21
104	93	86.36
107	94	91.5
109	75	87.04
110	80	93.88
111	93	79.55
112	74	85.71
113	93	82.46
114	94	79.73
115	99	91.67
116	50	85.19
117	90	84.38
121	95	87.28
122	63	90.31
124	100	96.71
126	99	88.27
128	100	84.88
131	97	98.03
133	65	83.33
134	93	89.58

Table V (continued)

135	99	83.93
136	96	86.46
137	69	95.69
138	95	79.12
139	58	93.89
140	96	87.68
142	73	87.5
143	95	90.10
146	78	83.73
149	66	80.45
154	99	83.53
155	99	96.43
156	63	82.35
159	93	92.
161	95	85.42
162	17	83.67
164	99	86.62
165	83	97.12
166	99	83.33
167	47	80.29
169	98	94.
172	99	97.75
174	90	83.70
177	86	90.1
178	99	87.21
179	86	81.25
180	97	91.11
182	87	83.85
184	58	78.50
185	73	87.37
188	83	79.69
190	68	91.11
191	97	79.29
193	99	83.
195	94	83.17
198	97	96.
199	57	82.63
200	62	81.72
201	45	85.94
202	93	81.94

Table V (continued)

204	65	89.46
205	34	82.65
207	73	81.86
209	97	89.
210	65	87.63
212	95	85.
215	99	91.85
216	95	84.78
217	86	85.56
218	68	87.22
220	99	80.73
222	96	91.01
223	34	81.85
226	45	89.58
227	92	90.33
228	99	87.72
231	90	88.24
233	99	94.08
235	95	85.33
238	87	81.77
240	98	78.39
242	23	81.86
244	100	83.02
245	94	99.08
247	97	98.70
250	32	85.29
252	96	91.15
253	89	85.
254	95	95.76
255	94	85.29
256	90	86.76
257	72	87.79
258	98	89.51
259	67	82.29

made by Student Number 10, a woman.

(4) The highest scholarship index included in this section of the study is 99.55, made by Student Number 41, a man.

The results of the calculations of the arithmetic mean and the standard deviations of the intelligence percentiles and of the scholarship indices are given in Table VI, which appears below.

Table VI  
MEANS AND STANDARD DEVIATIONS OF KAPPA DELTA PI  
MEMBERS IN INTELLIGENCE AND SCHOLARSHIP

Measure	Intelligence	Scholarship
Mean and P. E.	83.23 $\pm$ 1.05	86.46 $\pm$ .30
S. D. and P. E.	19.00 $\pm$ .74	5.39 $\pm$ .21

The table is read as follows: The mean for Kappa Delta Pi members in intelligence is 83.23 with a probable error of 1.05; in scholarship, the mean is 86.46 with a probable error of .30. The standard deviation for the group in intelligence is 19.00 with a probable error of .74; in scholarship, the standard deviation is 5.39 with a probable error of .21.

### C. Conclusions

1. Intelligence Percentiles. The mean for this group in intelligence is 83.23 with a probable error of 1.05.

The true mean is certain to be somewhere between the limits of the obtained mean minus four times its probable error and the obtained mean plus four times its probable error.<sup>9</sup> The true mean, therefore, will be somewhere between 79.03 ( $83.23 - 4.20$ ) and 87.43 ( $83.23 + 4.20$ ). If the mean intelligence percentile for the school is 50, as we may assume it to be, the limits obtained indicate that Kappa Delta Pi members rank far above the average in intelligence.

2. Scholarship. The mean scholarship for this group is 86.46 with a probable error of .30, yielding a true mean between 85.26 ( $86.46 - 1.20$ ) and 87.66 ( $86.46 + 1.20$ ). This mean scholarship is practically the same as that obtained in other sections of the study.

3. Difference in Central Tendency. It will be seen in Table VI, page 29, that the mean of this group of students is higher in scholarship than it is in intelligence, the difference being 3.23. A study of the difference is shown in Table VII, below.

Table VII  
RELIABILITY OF THE DIFFERENCE BETWEEN SCHOLARSHIP  
AND INTELLIGENCE

Mean Intelligence	Mean Scholarship	Difference	Favor	P.E. Difference	Significant Ratio
83.23 ± 1.05	86.46 ± .30	3.23	Scholarship	1.03	3.14

<sup>9</sup> H. E. Garrett. Statistics in Psychology and Education. Longmans Green Company. 1926. pp. 125-126.

In interpreting Table VII, page 30, it will be seen that there is a difference of 3.23 in favor of scholarship as previously mentioned. The probable error of this difference, 1.03, yields a significant ratio of 3.14. A significant ratio of four or over indicates complete reliability.<sup>10</sup> This difference, therefore, is not entirely reliable. One would expect such a difference, however, taking into consideration the fact that the eligibility requirements place a lower limit on the scholarship of the group, but not on the intelligence.

4. Variability. The coefficient of variation of the group is 22.83 in intelligence, and 6.23 in scholarship. The group, therefore, is 27.3 per cent ( $6.23 / 22.83$ ) as variable in scholarship as in intelligence. One would expect more variability in intelligence than in scholarship on account of the fact, mentioned in the preceding paragraph, that the range of the group in scholarship is necessarily limited. The difference obtained is much greater than would be expected.

5. Correlation. The coefficient of correlation between intelligence and scholarship of Kappa Delta Pi members was found to be .2027 with a probable error of .0530. The true coefficient between the intelligence and the scholarship is between  $-.0093$  ( $.2027 - .2120$ ) and  $.4147$  ( $.2027 + .2120$ ), which indicates a doubtful relationship.

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<sup>10</sup>K. J. Holzinger. Statistical Methods for Students in Education. Ginn and Company. 1928. p. 237.

MacPhail, in summarizing correlations between psychological test results and college scholarship obtained from different colleges in the United States, shows the lowest correlation found in any school to be .215 (which is a little higher than the coefficient obtained in this study) and the highest correlation to be .65. The central tendency of correlation between intelligence test results and college scholarship found by MacPhail was between .40 and .45.\* Considering the results of these studies, the coefficient obtained in this study is surprisingly low. The extremely low intelligence percentiles of several of the members of the society, which appear in Table V, pages 25-28, no doubt affected the correlation. It seems probable that in the case of these students the psychological test did not yield a true measure. Perhaps they did not take the test seriously; or other factors, such as health, may have affected its reliability.

The lack of correlation may indicate that some of the members of this group have won their scholastic honors by hard labor rather than by native endowment.

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\* A. H. MacPhail. The Intelligence of College Students. Warwick and York, Inc. 1924. pp. 28-29.

## VI. A COMPARISON OF THE PROFESSIONAL AND ACADEMIC SCHOLARSHIP OF KAPPA DELTA PI MEMBERS

### A. Presentation of Materials

The grades in professional courses were obtained from the records when the individual data sheets were filled out. From these, professional scholarship indices were calculated in the same manner as described in Chapter II, pages 4-6.

The professional credit points and professional honor points were subtracted from the total credit points and total honor points, respectively, to get the academic credit points and the academic honor points, from which academic scholarship indices were calculated.

Table VIII, pages 34-40, shows the professional scholarship indices and the academic scholarship indices of the two hundred forty-four Kappa Delta Pi members, for whom both measures were obtainable.

### B. Analysis and Results.

An inspection of Table VIII, pages 34-40, shows that:

(1) The range of professional scholarship is 46.43, and that of academic scholarship is 38.5.

(2) The highest professional scholarship index is 100, which was made by sixteen members, two men and fourteen women.

(3) The lowest professional scholarship index is



**Table VIII**  
**PROFESSIONAL AND ACADEMIC SCHOLARSHIP**  
**OF KAPPA DELTA PI MEMBERS**

STUDENT NO.	PROFESSIONAL SCHOLARSHIP	ACADEMIC SCHOLARSHIP
2	91.67	83.04
3	95.	98.21
4	78.57	80.76
5	75.	86.54
6	85.71	86.31
7	90.28	90.56
8	83.33	90.28
9	100.	84.69
10	80.88	84.64
11	84.32	87.19
12	86.11	83.84
13	92.86	75.39
14	93.75	83.33
15	88.88	85.27
16	85.71	82.32
17	79.17	88.69
18	85.71	88.69
19	89.29	94.51
20	67.86	91.48
21	62.5	84.21
23	72.5	79.79
24	93.75	91.18
25	56.25	65.09
26	76.25	88.36
27	67.86	85.71
28	86.41	76.90
29	91.67	85.53
30	96.43	85.58
31	91.07	100.
32	80.47	75.81

Table VIII (continued)

33	90.28	91.58
34	75.	86.38
35	91.56	93.94
36	96.88	91.86
38	94.32	90.55
39	80.	81.82
40	93.75	94.55
41	100.	98.96
42	62.5	86.06
43	85.71	80.83
44	86.11	83.26
45	91.67	91.95
46	100.	91.96
47	87.5	87.78
48	86.11	61.5
49	81.25	85.59
50	95.83	90.45
51	87.5	89.24
52	70.	92.16
53	90	83.63
54	80.88	88.95
55	78.57	82.74
56	88.33	77.02
57	77.63	75.36
58	92.91	94.44
59	87.5	78.85
60	70.	83.87
61	98.21	89.47
62	80.	81.06
63	80.	75.68
64	71.43	77.78
65	75.	87.65
67	91.25	88.01
68	76.79	87.78
69	83.33	81.40
70	80.83	78.92
71	94.12	98.08
72	96.88	94.44
73	86.29	81.4
74	75.	83.82

Table VIII (continued)

75	93.18	83.93
76	62.5	91.88
77	83.33	83.5
78	82.14	85.37
79	84.72	81.40
80	78.57	79.17
81	72.22	86.54
82	96.01	97.41
83	97.32	84.74
84	82.97	77.20
85	78.13	81.35
86	84.38	89.01
87	87.5	83.59
88	95.31	92.45
89	79.17	84.41
90	70.83	87.93
91	76.92	84.14
92	100.	93.57
93	100.	90.85
94	88.24	89.58
95	97.5	95.90
96	96.88	85.
97	85.94	85.05
98	80.85	76.12
99	83.33	95.11
100	75.	81.10
102	87.86	85.53
103	81.67	83.64
105	65.63	78.70
106	80.36	77.88
107	92.86	91.28
108	75.	86.36
109	90.52	83.
110	100.	92.86
111	77.08	80.23
112	93.18	80.88
113	85.94	81.10
114	87.5	78.79
115	87.5	92.5
116	89.29	84.55

Table VIII (continued)

117	81.82	85.14
118	93.18	90.
119	85.	96.88
121	86.20	87.5
122	96.43	89.29
123	65.63	75.39
124	95.	96.97
125	92.05	87.36
126	85.71	88.69
127	89.71	93.60
128	83.33	85.14
129	79.17	80.77
130	94.44	91.25
131	100.	97.73
132	100.	98.28
133	75.	84.68
134	85.	90.79
135	79.17	84.72
136	81.25	87.5
137	96.67	95.35
138	86.76	77.21
139	100.	87.5
140	75.	89.52
141	84.64	82.85
142	96.43	85.94
143	88.39	90.38
144	72.73	77.60
145	80.26	86.64
146	80.	84.59
147	89.29	86.01
148	89.06	77.07
149	75.	81.59
151	92.86	83.04
152	90.22	83.10
153	91.67	98.61
154	90.	82.26
155	93.75	96.95
156	62.5	85.62
157	94.44	81.36
159	92.86	91.86

Table VIII (continued)

160	84.09	82.09
161	85.71	85.37
162	75.	85.12
163	92.86	75.
164	84.38	86.99
165	96.43	97.22
166	75.	84.09
167	80.26	80.32
168	93.75	90.63
169	92.86	94.19
170	75.	79.17
171	77.37	79.15
172	100.	97.42
173	92.5	93.18
174	71.43	85.90
175	90.	87.22
176	97.92	95.24
177	97.22	88.46
178	100.	83.82
179	85.71	80.66
180	90.63	91.22
182	84.38	83.75
183	89.58	84.40
184	66.67	80.90
185	90.63	86.73
186	77.27	82.18
187	81.25	91.
188	78.57	78.88
190	89.29	91.45
191	72.73	81.16
192	72.5	91.41
193	84.38	82.74
194	86.11	80.46
195	85.42	82.5
196	88.24	86.62
197	97.06	91.53
198	90.	97.5
199	83.33	82.45
200	53.57	86.01
201	78.57	87.20

Table VIII (continued)

203	100.	92.39
204	93.65	88.64
205	75.	84.15
206	86.75	80.33
207	75.	83.24
208	94.12	78.26
209	77.78	91.46
210	88.89	87.33
211	97.98	92.27
212	75.	87.07
213	90.65	87.21
214	100.	95.71
215	96.67	90.91
216	72.5	88.19
217	84.82	86.05
218	87.5	87.18
219	80.	93.47
220	75.	81.11
221	93.75	92.78
222	100.	89.87
223	78.57	82.81
224	87.5	79.55
225	81.63	87.36
226	83.33	91.67
227	100.	88.85
228	92.5	86.70
229	92.65	91.35
230	86.90	89.29
231	85.	88.79
232	92.5	90.1
233	95.	93.94
234	71.88	94.33
235	80.56	86.49
236	86.46	85.14
238	85.71	81.10
239	84.38	86.54
240	85.71	72.69
242	96.43	79.55
243	84.88	88.91
244	87.5	82.22

Table VIII (continued)

245	97.22	99.45
247	93.75	99.28
248	88.64	91.98
249	98.48	98.21
250	66.67	89.28
251	100.	93.53
252	96.43	90.24
253	85.71	84.88
254	96.88	95.59
255	79.41	86.47
256	90.	86.21
257	78.13	90.
258	89.77	89.44
259	82.14	82.32

53.57, which was made by Student Number 200, a man.

(4) The highest academic scholarship index is 100, which was made by Student Number 31, a man.

(5) The lowest academic scholarship index is 61.5, which was made by Student Number 48, a woman.

The results of the calculations of the arithmetic means and the standard deviations of the professional scholarship indices, and of the academic scholarship indices are given in Table IX, below.

Table IX  
MEANS AND STANDARD DEVIATIONS IN PROFESSIONAL  
AND ACADEMIC SCHOLARSHIP

Measure	Professional Scholarship	Academic Scholarship
Mean and P. E.	85.71 $\pm$ .27	86.69 $\pm$ .27
S. D. and P. E.	6.30 $\pm$ .19	6.14 $\pm$ .19

The table is read as follows: The mean for Kappa Delta Pi members in professional scholarship is 85.71 with a probable error of .27; in academic scholarship the mean is 86.69 with a probable error of .27. The standard deviation for the group in professional scholarship is 6.30 with a probable error of .19; in academic scholarship the standard deviation is 6.14 with a probable error of .19.



### C. Conclusions

1. Central Tendency. It will be seen in Table IX, page 41, that the mean of the group is higher in academic scholarship than in professional scholarship, the difference being .98. A study of the reliability of this difference is shown in Table X, below.

Table X

#### RELIABILITY OF THE DIFFERENCE BETWEEN PROFESSIONAL AND ACADEMIC SCHOLARSHIP

Mean Academic Scholarship	Mean Professional Scholarship	Difference	Favor	P.E. Difference	Significant Ratio
86.69 ± .27	85.71 ± .27	.98	Academic	.23	4.26

In interpreting Table X, it will be seen that there is a difference of .98 in favor of academic scholarship, as previously mentioned. The probable error of this difference is .23. The difference divided by its probable error gives its significant ratio, which is 4.26 in this case. A significant ratio of four or over indicates complete reliability.<sup>11</sup> Therefore, it is certain that academic scholarship is usually higher than professional scholarship among Kappa Delta Pi members.

<sup>10</sup> K. J. Holzinger. Statistical Methods for Students in Education. Ginn and Company. 1928. p.327.

2. Variability. The coefficient of variation of the group is 7.00 in professional scholarship, and 7.08 in academic scholarship. The group is 98.9 per cent as variable in professional scholarship as in academic scholarship, a very slight difference.

3. Correlation. The coefficient of correlation between professional scholarship and academic scholarship is  $.6514 \pm .0249$ . The limits of the true coefficient are  $.5518$  ( $.6514 - .0996$ ) and  $.7510$  ( $.6514 + .0996$ ), which indicates high or at least marked correlation, when adjudged by Rugg's standard.<sup>12</sup>

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<sup>12</sup> H. O. Rugg. Statistical Methods Applied to Education. Houghton Mifflin Company. 1917. p. 256.

## VII. A STUDY OF THE DISTRIBUTION OF MEMBERS AMONG THE VARIOUS MAJOR DEPARTMENTS

### A. Presentation and Analysis of Materials

The materials for this section of the study were obtained from the record cards in the Office of the Registrar. These cards do not state what the majors are. The number of courses taken in each department had to be counted and from this information the probable majors were determined. From these data a frequency table was made, showing the number of Kappa Delta Pi members majoring in each subject, Table XI, page 46. The data of this table are subject to some error on account of the method by which they were obtained. In the majority of cases counting the courses on the student's record would reveal his majors; but in some instances, as in science and social studies, where there are different specified options, a student might have a sufficient number of courses to indicate a major without completing the requirements for a major in that subject. In the case of students who have not graduated, a count of the courses completed may not indicate accurately the majors they will have and are actually working on. In the case of such students, six or seven courses in one subject was considered a major.

An attempt was made to get information concerning the number of graduates in each department during the seven years that are under consideration. The most

Table XI

DISTRIBUTION OF KAPPA DELTA PI MEMBERS AMONG  
MAJOR DEPARTMENTS

Major	Number of Kappa Delta Pi Members
Art	3
Commerce	45
Education (undergraduate)	28
Education (graduate)	51
English	111
French	21
German	10
Home Economics	13
Industrial Arts	5
Library Science	1
Latin	43
Mathematics	52
Music	17
Physical Education	7
Science	67
Social Studies	79
Spanish	3

reliable data on file in the Registrar's Office were the returns from the State License Bureau for those years. The State License Bureau returns to the school a slip for each student to whom a license is issued. These slips contain the name of the student, the date the license is issued, the kind of a license, and the subjects for which the license is granted.

After a careful examination of the data obtained from these slips, it was discovered that they did not yield a reliable measure of the number of graduates each year in each major department, because the number licensed in a subject did not necessarily coincide with the number graduating with a major in that subject. Reasons for these discrepancies were: Not all graduates applied for licenses. Some licenses were granted to students who had not graduated during the year in which the license was granted. Some of the graduates took positions in other states or entered other fields than teaching and never applied for a license in Indiana. Students may already have had licenses when they graduated and may not have applied for a conversion for a few years. Two or three license slips may be returned for one student.

#### B. Conclusions

In view of the facts just mentioned it was decided that the effort involved in tabulating the information would not be justified, since the results would yield

so doubtful a measure of the desired knowledge.

There is a need for different records that would yield more accurate data for purposes of research. The number of students graduating in each department and the number of students enrolled as majors in each department would have been very helpful for this study. Although the total enrollment in each department is available, this information does not reveal the number of different students enrolled or the number of majors.

Key  
of the study.

of the study. The results

## VIII. A STUDY OF THE DISTRIBUTION OF KAPPA DELTA PI MEMBERS BY COUNTIES

### A. Presentation of Material

The county location of the high school from which the Kappa Delta Pi member graduated is a part of the material obtained on the individual data sheet used in this study. From these data sheets the number of Kappa Delta Pi members from each county was found. The total enrollment of students in each of these counties during the seven years under consideration in this study was obtained from the records in the Registrar's Office. These records give the enrollment by counties for each term. The total enrollment for one year may count the same student as many as four times and over a period of several years the same student might be counted as many as 12 or 16 times depending on the number of terms he was in school. For this reason it was decided to use per cents in making comparisons rather than actual numbers.

Table XII, pages 50-51 is a summary of the materials mentioned and presents a comparison of the per cent of Kappa Delta Pi members from each county and the per cent of the total enrollment from each county.

### B. Analysis and Results

There are 247 Kappa Delta Pi members in this section of the study. The number of members from each county was

Table XII  
 COMPARISON OF PER CENT OF KAPPA DELTA PI MEMBERS FROM  
 EACH COUNTY AND PER CENT OF TOTAL ENROLLMENT  
 FROM EACH COUNTY

Name of County	No. of K. D. P. Members	Per Cent K. D. P. Members	Per Cent Total Enrollment	Ratio K. D. P., Enrollment
Benton	2	.81	.51	1.60
Boone	3	1.21	.40	3.00
Clay	8	3.24	6.47	.50
Clinton	2	.81	.43	1.88
Crawford	1	.40	.61	.66
Daviess	5	2.02	2.97	.68
Dearborn	1	.40	.28	1.43
Decatur	1	.40	.12	3.33
DeKalb	1	.40	.11	3.64
Floyd	1	.40	.40	1.00
Fountain	1	.40	1.29	.31
Gibson	2	.81	1.15	.70
Grant	2	.81	.16	5.06
Greene	9	3.64	3.92	.93
Hancock	1	.40	.10	4.00
Harrison	2	.81	.96	.84
Hendricks	1	.40	.48	.83
Huntington	1	.40	.19	2.11
Knox	4	1.62	3.64	.45
Kosciusko	1	.40	.11	3.64



Table XII (continued)

Lake	2	.81	1.56	.52
Madison	1	.40	.23	1.74
Martin	1	.40	.80	.50
Miami	3	1.31	.10	12.10
Montgomery	2	.81	1.63	.50
Morgan	4	1.62	.98	1.65
Newton	1	.40	.19	2.11
Owen	2	.81	.79	1.03
Parke	6	2.43	3.59	.68
Perry	2	.81	.96	.84
Posey	2	.81	1.11	.73
Putnam	1	.40	1.65	.24
Ripley	2	.81	.33	2.45
Spencer	2	.81	.65	1.25
Sullivan	14	5.67	5.47	1.04
Tippecanoe	5	2.02	.81	2.49
Vanderburg	2	.81	1.32	.61
Vermillion	5	2.02	3.55	.57
Vigo	121	48.99	35.54	1.38
Warren	1	.40	.37	1.08
Wayne	1	.40	.36	1.11
Wells	2	.81	.06	13.50
White	2	.81	.28	2.89
Illinois	9	3.64	1.80	2.02
Other States	5	2.02	.46	4.39

divided by this number to find the per cent of Kappa Delta Pi members from each county. The total enrollment of each county was divided by the total enrollment of the college over the seven year period (59,508). This calculation gave the per cent of the total enrollment that was enrolled from each county.

The ratio of the Kappa Delta Pi enrollment to the total enrollment was found by dividing the per cent of Kappa Delta Pi members enrolled from each county by the per cent of the total enrollment from each county. These ratios appear in the last column in Table XII, pages 49-50.

#### C. Conclusions

Table XII, pages 49-50, as will be noticed, does not include all of the counties. There were forty-eight other counties from which students were enrolled in the school during the period of this study. These counties contributed 10.8 per cent to the school enrollment and no members to Kappa Delta Pi. The per cent of total enrollment from each of these counties is very small, the largest of them being that of Marion, whose students were 1.79 per cent of the total enrollment.

An inspection of the final columns<sup>n</sup> in Table XII, pages 49-50, will reveal which of the counties contributed heavily to Kappa Delta Pi membership when school population from the counties is taken into consideration. Ratios below one are cases where the school enrollment per cent

exceeded the Kappa Delta Pi membership per cent.

It will be noticed that Illinois students comprised 1.80 per cent of the total enrollment and contributed 3.64 per cent of the Kappa Delta Pi membership. Other states involving only .46 per cent of the school enrollment contributed 2.02 per cent of the membership.

The forty-three counties listed in Table XII, pages 49-50, furnished 87.9 per cent of the total enrollment and 94.34 per cent of the Kappa Delta Pi membership.

## IX. SUMMARY

### A. Findings

1. Scholarship. The study of the scholarship of Kappa Delta Pi members reveals the following facts:

- (1) The mean of the group is  $86.71 \pm .25$ .
- (2) The limits of the true mean are 85.71 and 87.71

(3) Kappa Delta Pi members rank far above the average of the school. This fact indicates that the eligibility requirements and the election to membership in the past have kept the standards of the society up to their proper place.

- (4) The variability of the group of members is low.

2. Scholarship Before and After Election. The comparison of scholarship before election and scholarship after election to membership proves these facts:

(1) The scholarship of Kappa Delta Pi members is higher after election to membership than it is before election.

(2) The election to Kappa Delta Pi probably spurs the student on to greater effort.

(3) There is an increase in variability in the group after election probably caused by the difference between the few students who fall below their previous

achievement and the others who maintain their previous record and in most cases raise it.

(4) The coefficient of correlation between scholarship before election and scholarship after election is  $.3583 \pm .0403$ , indicating that comparative rankings changed somewhat after election and that students who were highest in scholarship before election were not always highest after election.

3. Intelligence and Scholarship. The study of intelligence and scholarship shows these facts:

(1) The limits of the true mean of intelligence percentiles of Kappa Delta Pi members are 79.03 and 87.43.

(2) The limits of the true mean of scholarship in this section of the study are 84.96 and 87.60.

(3) Average scholarship of Kappa Delta Pi members is higher than their average intelligence percentile, but this difference is not entirely reliable.

(4) There is much greater variability in intelligence among the members of the society than would be expected.

(5) The coefficient of correlation is  $.2027 \pm .0530$ , which indicates a doubtful relationship.

4. Professional and Academic Scholarship. In the study of academic and professional scholarship among Kappa Delta Pi members, the following facts were established:

(1) Average academic scholarship is higher than

average professional scholarship.

(2) There is practically no difference in the variability of the group in academic and professional scholarship.

(3) The coefficient of correlation between academic and professional scholarship is  $.6514 \pm .0249$ , indicating high correlation.

5. Majors of Kappa Delta Pi Members. In the study of the distribution of Kappa Delta Pi members among the various major departments, no conclusions were reached because no basis for comparison could be obtained from available records. This fact seems to indicate that there is a need for additional records, or at least different records, for purposes of research.

6. County Distribution of Kappa Delta Pi Members. A study of the geographic distribution of Kappa Delta Pi members by counties yielded the following information:

(1) Forty-eight counties in the state, contributing 10.8 per cent to the total enrollment of the school during the years of this study, had no students who were elected to Kappa Delta Pi.

(2) Forty-three counties in the state furnished 87.9 per cent of the total enrollment of the school and 94.34 per cent of the Kappa Delta Pi membership.

(3) Students from Illinois comprised 1.80 per cent of the total enrollment and 3.64 per cent of the membership. Other states involving only .46 per cent of

the school enrollment contributed 2.02 per cent of the Kappa Delta Pi membership.

#### B. Recommendations

The arithmetic mean of the scholarship of Kappa Delta Pi members was found to be 86.71. If the standard deviation, which is 5.81, be added and subtracted from the mean, it will give the limits, 80.90 and 92.52, which will include 68 per cent of all the members. The lower limit, 80, is the index which is recommended for eligibility for election to Kappa Delta Pi.

In the past quite a few students whose scholarship records met the requirements for Kappa Delta Pi were overlooked and were not elected to Kappa Delta Pi. The ideals of the society seem to demand that all students who meet the requirements should be elected to membership, unless there is some exceptional reason for their exclusion. It is recommended that the Registrar furnish the membership committee of Kappa Delta Pi, after the close of each term, a list of all Juniors and Seniors having a scholarship index of 80 or more. All of these students should be considered for membership. Recommendations from three members of the faculty and from the dean might be required in addition to the scholastic requirement. If these recommendations are forthcoming, the student should be elected to membership without further question.

The increase in variability after election to membership occasions the suggestion of the advisability of dropping a member whose scholarship after election should lower his total scholarship index below 75. Such a precaution does not appear necessary from the results of this study, since none of the members included lowered their total scholarship index to this level.

Number of students graduating in each major department and number of students enrolled as majors in each department are data that are really needed for purposes of research. This study would have been greatly aided had there been records in the Office of the Registrar containing the number of students graduating in each department and the names of students enrolled as majors in each department.

### C. Conclusion

The results of this study show that the Alpha Kappa Chapter of Kappa Delta Pi has well upheld the high ideals of the society so far as scholarship is concerned. The data available did not give a basis for judging the achievement in other phases.

Although the new basis recommended for eligibility may tend to raise the scholastic standard somewhat, it is not a criticism of the scholarship of the membership, but merely



a feeling that in adopting a new standard it is better to raise the standard a little rather than run the risk of lowering it.

Data Sheet for Kappa Delta Pi Members

Name\*\*\* \_\_\_\_\_ \* \_\_\_\_\_ Date of Election \_\_\_\_\_

High School Graduated from \_\_\_\_\_

Location of High School \_\_\_\_\_  
(County and State)

Intelligence Percentile \_\_\_\_\_

Scholarship Index Previous \_\_\_\_\_ Scholarship Index After \_\_\_\_\_  
to Election \_\_\_\_\_ Election \_\_\_\_\_

Total A's \_\_\_\_\_ Total A's \_\_\_\_\_

Total B's \_\_\_\_\_ Total B's \_\_\_\_\_

Total C's \_\_\_\_\_ Total C's \_\_\_\_\_

Total D's \_\_\_\_\_ Total D's \_\_\_\_\_

Total F's \_\_\_\_\_ Total F's \_\_\_\_\_

Total Scholarship Index \_\_\_\_\_

Total Honor Points \_\_\_\_\_ Total Credit Points \_\_\_\_\_

Professional Schol. Index \_\_\_\_\_ Academic Schol. Index \_\_\_\_\_

Total A's \_\_\_\_\_ Total Honor Points \_\_\_\_\_

Total B's \_\_\_\_\_ Total Professional Honor Points \_\_\_\_\_

Total C's \_\_\_\_\_

Total D's \_\_\_\_\_ Total Academic Honor Points \_\_\_\_\_

Total F's \_\_\_\_\_ Total Credit Points \_\_\_\_\_

Total Professional Credit Points \_\_\_\_\_

Total Academic Credit Points \_\_\_\_\_

Major Subjects:  
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