

A COMPARATIVE STUDY OF THE SCHOLASTIC SUCCESS OF ATHLETES,
MUSICIANS, COLLEGE WOMEN AND COLLEGE MEN AT KANSAS STATE
TEACHERS COLLEGE OF EMPORIA FOR THE FIRST SEMESTER
OF THE ACADEMIC YEAR OF 1934-1935

A THESIS

SUBMITTED TO THE DEPARTMENT OF
EDUCATION AND THE GRADUATE COUNCIL OF THE KANSAS STATE
TEACHERS COLLEGE OF EMPORIA IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE

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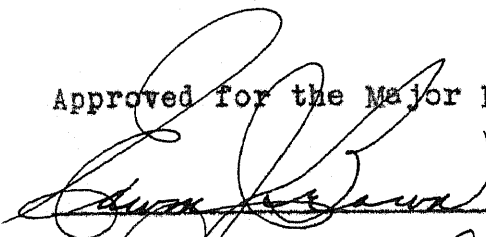
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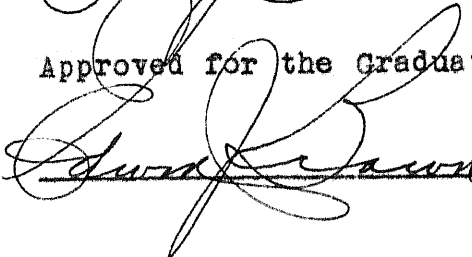
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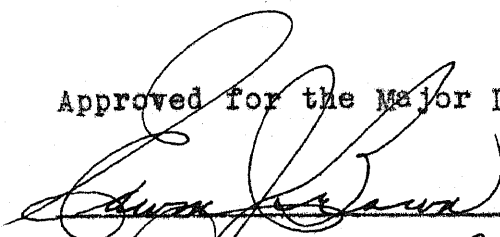
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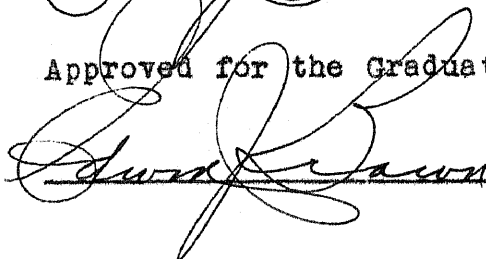
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ACKNOWLEDGMENT

The writer acknowledges with intense appreciation the assistance of two individuals:

To Doctor Edwin J. Brown, Professor of Education and Director of Graduate Division, who not only urged the making of this study, but rendered valuable assistance in guiding the study and correcting the manuscript.

He is also grateful to Doctor H. E. Schrammel, Professor of Psychology and Director of Bureau of Educational Measurements, for his statistical aid and helpful suggestions on the statistical compilations in this thesis.

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CHAPTER I

INTRODUCTION

THE NATURE OF THE STUDY

In few parts of the entire educational system have there been, within the past two score years, such noteworthy advances, not only in technical knowledge and skill, but also in participation and interest, as in the development of extra-curricula activities in the educational system.

Scholarship or extra-curricula activities? The older generation frequently complains that this is the question confronting the college student today. Along with the here-tofore sole channel of attention--scholarship--there exists a wide strata of intense interest--extra-curricula activities.

Some of the critics argue that the purpose for which the college was established is being thwarted. Others contend that the dual offering in the college provides a more lifelike situation. For the "promoter" activities are provided; for the real student the goal is scholastic honors. The constructive critics believe that the two interests can be combined. "What prominent educators seek is a well rounded type of student-- 'a sound mind in a sound body'."¹ The educators point out

¹ Ed. "College Athletics and Scholarship." Review of Reviews, LXXIII (April, 1926), p. 424.

many examples of those who take advantage of both opportunities. Thus the question is debated.

Emphasis upon activities has become exceedingly prevalent. The possibilities and the value of extra-curricula activities are expounded by some advocates to such an extent that activity takes precedence over the scholastic ideal. The subject is being studied with complete frankness.

It was not so long ago that our colleges were indifferent to physical education, and even opposed to student activity along athletic, dramatic, musical, journalistic, and present-day social lines. Intercollegiate athletics in many, if not most institutions struggled for years against faculty indifference and opposition, and found approval only after a new generation of faculty men had come into control. Since then occasional institutions like Reed College have ridden themselves entirely of the time-wasting and commercialized evils of athletics, while some like Columbia have abolished intercollegiate football only to reinstate it later under, what were considered, satisfactory conditions.

But the present, finds all the common phases of extra-curricula activities firmly established and recognized in most of our colleges and universities. This can not be said to be due to an inability and a fear to rid the university of undesirable features of university life, but rather to a changing ideal of the functions of the university and a desire to make possible the complete education of the man according to his abilities and the needs of the time. The feeling has developed that all these interests may be so restricted and directed as to secure a fuller realization of the student's possibilities as a scholar, as a leader, as a citizen and as a man. That there are valuable elements of training to be found in them, not ordinarily found in a class-room work, every one recognizes.

The fact remains, however, that such students finding their tasks too difficult and the personal attention given them by their instructors too meager, swell the ranks of the idlers or for consolation and diversion plunge into those activities that are within the range of their abilities, and lend their voices to the chorus, "Don't let

your studies interfere with your education."²

Current statistics show an ever-increasing enrollment of college students, with educational endowment campaigns on foot and ambitious architectural programs that would have astonished everybody twenty-five years ago. Meanwhile, the reasonable balance between scholastic pursuits and other student interests--among which athletics comes first--seems to be asserting itself most hopefully. The additional revenues are used to support plans for giving physical training of one kind or another to all students.

Speaking of Princeton's championship team of 1925, President John Grier³ said:

If a university with the stringent scholastic regulations and eligibility rules of Princeton could turn out such a team, each man being necessarily a successful student, did not this accumulation of genuine brain-power contribute to the victory? And is not such a victory an added incentive to scholarship?

Such contentions are well founded, for the competing athlete today must have on the average a higher class-room standing than the non-athletic student. A man may pass enough of his academic work to stay in college without being eligible for athletics, but he must receive satisfactory grades in all

² Paul P. Boyd, "Extra-Curricular Activities and Scholarship." School and Society, XIII (Feb. 5, 1926), pp. 158-63.

³ Ed. "College Athletics and Scholarship." Review of Reviews, LXII (April, 1926), pp. 423-424.

his subjects if he be allowed to participate on any team.

That this dual problem of scholarship and activities is a very pertinent matter in the schools of education is proved by the attitude of superintendents in their search for prospective teachers. The employees in the Appointment Office of the Kansas State Teachers College of Emporia say that the superintendents most frequently demand a teacher who has had broad participation in activities. The papers for each student reveal the recommendations of a few instructors, a general statement of the subjects studied, and a list of the activities pursued. Such an analysis satisfies the majority of superintendents. Some say that they prefer a teacher with average scholarship and many activities. Others insist that some of the superintendents desire to know either the student's scholastic ranking or his entire course of study. Scholarship, then, is not altogether a thing of the past.

Hence the writer has as his main objective a comparative study of the scholastic success of two groups, the main distinction being that the students be either active in extra-curricula activities or non-active. His purpose is to present an analysis of the scholastic records of these two groups to determine whether, being active in extra-curricula activities is detrimental or beneficial to the scholastic marks of a student; to make a comparison of the findings of this study with those of similar studies; and to conclude with a summary and conclusions

if such seem warranted.

PREVIOUS STUDIES

College faculties go on the assumption that the intellectual acumen and the power of concentration demanded of the man who takes high rank in his studies are valuable assets in the competition of business and professional careers, that persistence and perseverance, attention to details, the power of self-denial, the subordination of less important matters to matters of greater moment, and similar qualities, all characterize the honor man, and are all qualities, of permanent value. If this assumption is correct, then it should follow as a matter of course that students attaining high rank in their undergraduate careers will come to high places in professional and business life in larger numbers than students of lower grade, and it is anticipated that the percentage of success would be greatest for the so-called first honor men.⁴

No one can give a precise definition of success, and no list of successful alumni is much more than an opinion. Sometimes lists have been taken from such books as Who's Who. This method has the advantage of being measurably free from the bias of individual judgment, but all such lists are arbitrary

⁴ Louis Bevier, "College Grades and Success in Life." School and Society, LIV (November, 1917), pp. 325-33.

and of little value, except perhaps for comparison.

Success has often been measured by whether or not an individual has his name in Who's Who in America. This is only one phase of success; but such a criterion proved to be significant in at least one respect--the results of several studies were comperable.

Frank W. Nicholson of Wesleyan University made a study of "Success in College and After Life."⁵ He used living alumni of Wesleyan University. In the group of graduates for the period of 1860 to 1889, he found that fifty per cent of the men who had graduated with honors had a place in Who's Who, while only eleven per cent of those who had not ranked high in scholarship achieved this recognition.

E. G. Dexter⁶ made a study which measured in a similar manner success as indicated by Who's Who. He investigated the records of the living graduates of twenty-two colleges and found that 5.9% of the honor scholars and 2% of all graduates were listed in Who's Who.

In his study, "College Honors and Success if Life," John S. P. Tatlock displays a more conservative attitude toward honor students and their success in life. He warns the

⁵ Frank W. Nicholson, "Success in College and After Life." School and Society, II (August 14, 1915), pp. 230-31.

⁶ Daniel Starch, Educational Psychology. New York: Macmillan Co., 1921, p. 178.

reader against the fallacy of thinking that the industry of students in college is all that made them successful. The statistics reveal facts similar to those in the studies of Dexter and Nicholson.⁷

Of 76 men who graduated with honors at Pennsylvania between 1893 and 1898, 18 are in Who's Who in America for 1918-19, 24 per cent. Of 79 who graduated with high honors at Yale, 1896-8, 19 or 25 per cent are in Who's Who. Of 75 who took highest honors at Harvard, 1891-1900, 30 (that is 40 per cent) are in Who's Who. It will be noted that, the more select the group, the higher is the percentage.

Dr. Fredrick Butterfield Knight in his detailed study, Qualities Related to Success in Teaching,⁹ says that the general factor of interest in one's work becomes the dominant fact in determining one's success in teaching. He reached this conclusion after he found that only three correlations indicated any positive relationship. Teaching ability correlated slightly with each of three factors--with ability to pass a professional test, with normal school scholarship, and with intelligence.

Probably the most recent study in the field discloses a conclusion almost contrary to the results of the studies which have been mentioned. Ransom Bramblett made a study

⁷ John S. P. Tatlock, "College Honors and Success in Life." School and Society, XV (June 10, 1922), p. 647.

⁸ Ibid., p. 647.

⁹ Frederick Butterfield Knight, Qualities Related to Success in Teaching. Teachers College Contributions to Education, No. 120. New York: Teachers College, Columbia University, 1922, pp. viii-ix.

entitled A Correlation Between the Scholastic Record of Graduates of Indiana State Teachers College and Their Yearly Financial Success After Graduation. He reached the following conclusions:

1. The correlation is not very high between grades and salary for the men or women or for all of them put together
2. The correlation between grades in the major subject and financial success is very low.
3. The highest correlation is between the grades in professional work and the average yearly salary.
4. The fact that salary and grades do not correlate very well seems to prove that other factors which cannot be measured so readily enter into the financial success of teachers. Some of these may be personality, politics, luck, ability to maintain discipline, sympathy, etc.
5. It seems that the thing that is stressed in college is not the factor that draws the salary.¹⁰

A summary of the results of these studies indicates:

1. That high grades or scholastic honors are apparently indices of success as measured either by recognition in Who's Who or by the judgment of competent individuals.
2. That the effect of participation in college activities upon success in later life is not definitely known.
3. That there is no agreement regarding the factors of success in teaching profession.

¹⁰ Ransom Bramblett, A Correlation Between the Scholastic Record of Graduates of Indiana State Teachers College and Their Yearly Financial Success After Graduation. Unpublished Master's Thesis, Indiana State Teachers College, Terre Haute, 1929, p. 22.

THE SCOPE OF THE STUDY

1. This study is limited to a consideration of the scholastic marks acquired during the fall semester of 1934-1935 of one hundred-sixty students of the Kansas State Teachers College of Emporia. The selection of students was made by choosing four groups of forty each, pairing individual students in the four groups by decile rankings secured from the results of entrance tests given the students at the time they entered school.

2. The groups studied were limited to Group I--forty football men; Group II--forty music students who were selected from the K. S. T. C. Band and Orchestra; Group III--forty college women who were non-active in extra-curricular work; Group IV--forty college men who were not members of either the music or athlete groups, also they were non-active in extra-curricular activities.

3. The study purposes a better understanding of the past school activities play in determining scholastic excellence as determined by teacher's marks.

METHOD OF PROCEDURE

The first step in the research was to secure the subjects for this study. The general prerequisite for the whole group was that they be enrolled at the Kansas State Teachers College of Emporia during the first semester of the school

year of 1934-35. This time limit was made because the recency of the data is important and it was essential that all the subjects have earned their scholastic credits under the same administration with the same grading system being used. The subjects were selected from the Kansas State Teachers College of Emporia because data could be secured most conveniently and desirable uniformity existed in the outside conditions and factors that tend to influence a student's marks.

The four groups that were chosen, because they present a good sampling of those who are both active and inactive in out-of-class activities, are described in the following paragraphs.

For the group to represent the athletes forty football men were selected. Football men were selected due to the fact that this is the most time and energy consuming activity undertaken during the first semester.

Of the forty football men who were selected twenty-two received the "K" sweater award. The "K" award is given to men who participate in six football games or in sixteen or more quarters during the varsity football season. The remaining eighteen men were "out for football" the entire season, spent as much time, and went through the same practice sessions and drills as the award men but due to the laws of chance or other reasons were not qualified to receive the "K" award. However, eight of these men were given the provisional

award, which means, that if they are awarded a "letter" the next year the sweater will have two stripes instead of one.

The music group is composed of members of the Kansas State Teachers College Concert Band and the Kansas State Teachers College Symphony Orchestra. These two organizations were selected due to the fact that they devote practically an equal amount of time to musical activities as do the athletes to athletics during the first semester.

The following paragraph is needed here to explain what is meant by decile rating and how the term is found and used.

At the beginning of each semester the incoming freshmen at the Kansas State Teachers College of Emporia are required to take a battery of tests so that the relative degree of preparation of each student may be known. For example, the class entering in the autumn of 1929 took the following battery of tests: The K. S. T. C. Entrance Test (intelligence), the Barrett-Ryan English Test, the Compass Survey Arithmetic Test, the Whipple Reading Test, a vocabulary test, and a true-false test in spelling. The reliability of the tests is high. This battery of tests was administered, scored, and the distribution of scores computed. The students are classified into ten groups according to the following procedure. The raw scores made on each of the tests of the battery are weighted in such a manner that each test may contribute its equitable proportion toward the student's total score. For example, the possible

score on each test might be as follows: Intelligence, 140; reading, 20; vocabulary, 199; arithmetic, 60; English, 150; and spelling, 100. The scores a student made were weighted as follows: The total scores of the intelligence and reading test; one-half the total score of the vocabulary and arithmetic tests; and one-fourth the score of the English and spelling tests. The weighting is somewhat arbitrary. After the scores which each student made on the tests had been weighted, these derived scores were totaled. The distribution of these total scores was then divided into ten approximately equal groups. The students whose scores constituted the lowest 10 per cent composed group I; the next lowest 10 per cent, group II; the third lowest 10 per cent, group III; and so on up to the highest 10 per cent, who composed group X. In the following work the groups will be referred to as the first decile meaning the lowest 10 per cent; second decile, the next lowest 10 per cent; and so on.

The forty selected for the music group included eight who were selected from the Kansas State Teachers College Concert Band during the first semester of 1930-31 due to the fact that there were only six members of the 1934-35 band who were in the first decile, and since one of the requirements was that there be twelve first decile members in each of the four groups the remaining six were selected from the 1930-31 band. Two members for the second decile were selected from the 1930-31 band due to conditions existing in the second

decile that were similar to the first decile.

The grade index of the eight members selected from the 1930-31 band was found to have a high correlation with the respective members of the same decile rating of the 1934-35 band and the difference was found to be so small that it was statistically insignificant.

The third group, termed the college women, was composed of women who were not engaged in out-of-class activities during the first semester of 1934-35. They were neither musicians nor were they engaged in any particular campus activity which would take their time or energy. The women who were not active were selected in alphabetical order from the Student Directory, which is a catalogued roll call of the Kansas State Teachers College of Emporia student body.

The fourth group, termed the college men, forty in all, was selected in the same manner as were the college women. These men were neither athletes nor musicians nor were they connected with any particular time or energy consuming campus activity during the first semester of 1934-35. The men were selected in alphabetical order from the Student Directory.

The control group of this study is the college football men. The reason is quite obvious since there were a limited number of athletes competing during the first semester, while the Concert Band and Symphony Orchestra have memberships of approximately one hundred and fifty and the greater per

cent of the remainder of the student body, fifteen hundred, were eligible for the college women and college men groups.

First the forty athletes were selected. Then their decile ratings were ascertained since the study was of the scholastic success of the four groups and they were to be as nearly equal in mental capacity and scholastic equipment as could be secured, using decile ranking as criteria. The first survey revealed that there were twelve football men in the first decile, nine in the second, two in the third, two in the fourth, three in the fifth, three in the sixth, none in the seventh, two in the eighth, five in the ninth, and two in the tenth.

The above figures were used as controls and in each of the other three groups, the musicians, the college women and the college men, the same numbers of members were selected who fell in the same decile as the athletes. This opened the study with four groups with equal abilities and capacities as far as decile (scholastic entrance) rankings were concerned.

Factors of intelligence, chronological age, previous training, etc., were for this study assumed to be constant as the decile rankings correlate highly with I. Q. and other factors. As has been stated, the object of the research was to determine, if possible, whether time consuming out-of-class activities affected school marks, and if so to what extent. The question of out-of-class work for maintenance of the

student while in school was not considered as all members of groups were found to be working paractically without exception for all or a large part of their school support.

After the four groups had been selected and equated according to decile ranking, scholastic marks were studied and grade averages or grade indices were figured.

The grade index was figured according to the plan which is used by the Registrar at the Kansas State Teachers College of Emporia. For each semester hour's work, the grades receive the following assigned values:

A-----1
B-----2
C-----3
D-----4
F-----5

"Withdrawals" if passing were not considered neither were "incomplete" marks, but a withdrawal failing was considered as an F. The grade index was computed as follows: To illustrate, if a subject had a total grade value of forty-five and possessed fifteen hours credit, the grade value, forty-five, divided by the number of hours, fifteen, would yield a quotient or grade average of three. The grade index or grade average may be used synonymously.

SOURCES OF DATA

The greater part of the data used in this study was gathered from the records of the one hundred and sixty students which formed the four control groups. The decile

rankings were secured from the records in the Bureau of Educational Measurements' Office. The scholastic marks were secured from the Registrar's Office.

DEFINITION OF TERMS

The term athletic group is used to refer to the forty athletes who spent three and one-half hours a day at football.

The term music group is used to refer to the musicians selected from the Kansas State Teachers College Concert Band and Symphony Orchestra. Information shows that they devote relatively the same amount of time to their activity as do the athletes.

The activity group is used to refer to the athletes and musicians combined.

The term college women group is used to refer to the forty college women who were non-active in extra-curricular work. They neither played in the band nor were they active in any organization.

The term college men group is used to refer to the forty college men who were non-active in extra-curricular work. They neither played football nor were they in any other active organization.

The term non-active group is used to refer to the college men and women combined into one section.

CHAPTER II

PRESENTATION OF DATA

The purpose of this chapter is to present the data obtained from the statistical compilation of the semester grades of the four groups. This information was taken from the records of one hundred and sixty students of the Kansas State Teachers College of Emporia.

The first group selected was the athlete group, which is composed of forty football players. The second group of forty was selected from the Kansas State Teachers College Concert Band and Symphony Orchestra of the first semester of 1934-35. The third group selected was composed of forty college women who were non-active in any time or energy consuming activity during the first semester of 1934-35. The fourth group was composed of forty college men who engaged in no organized campus activity.

Although the athlete and music groups are as large as the college men and college women groups the first two are more select groups. The fact that they are more select groups is due to the limited number of football men and musicians at Emporia. Approximately forty-five men are out for football and the music group was selected from a total of about one hundred and fifty musicians.

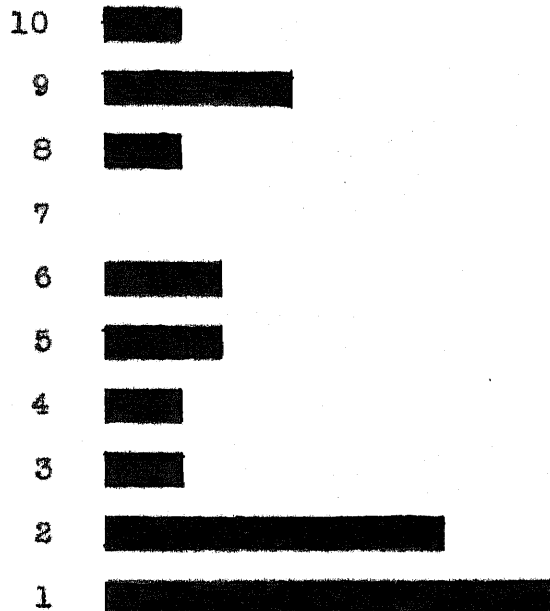
TABLE I

DECILE RANKING OF THE FOUR GROUPS

Decile Rank	Athletes	Musicians	Men	Women	Per Cent
I	12	12	12	12	30
II	9	9	9	9	22.5
III	2	2	2	2	5
IV	2	2	2	2	5
V	3	3	3	3	7.5
VI	3	3	3	3	7.5
VII	0	0	0	0	0
VIII	2	2	2	2	5
IX	5	5	5	5	12.5
X	2	2	2	2	5
Total	40	40	40	40	100

Read table thus: 12 athletes, musicians, men, and women were in the first decile. They were 30 per cent of the entire group.

Decile



Number of Frequencies

■ = one subject

FIGURE I

BAR GRAPH SHOWING NUMBER OF SUBJECTS IN EACH DECILE

Read table thus: Twelve subjects were in the first decile. Nine subjects were in the second decile.

The arrangement of the decile groups reveal^s the following information:

That football players as a whole are considerably below the average or median of the ten deciles or entrance tests.

A survey of the first decile reveals that the greatest per cent of the forty football men fall in this decile. There were twelve football men in the first decile, which is thirty per cent of the entire group of athletes.

A second decile is next in total number of athletes according to decile rankings. The second decile contains nine athletes which is twenty-two and one-half per cent of the entire group.

The third, fourth, eighth, and tenth deciles each contain two subjects which is five per cent of the entire group.

The fifth and sixth deciles each contain three subjects which is seven and one-half per cent of the entire group.

There were no members of the football group in the seventh ten per cent of the entire college rankings.

A study of the ninth decile presents a bit of interesting information. In this decile there are five members which is contrary to what one would expect to find. However this may be due to the commonly accepted fact that there are exceptions to most every rule and since the college team is composed of men from high schools through the state these five men are supposedly the exceptional cases.

The bar graph on page 19 shows in length how the various deciles compare. The seventh decile, it will be noted is left vacant, this is due to the fact that of the forty football men who made up the athlete group none was in the seventh decile, a total group of approximately one hundred-fifty students.

TABLE II

THE FREQUENCY DISTRIBUTION OF COLLEGE WOMEN, COLLEGE
MEN, MUSICIANS AND ATHLETE GROUPS

Grade Index	College Women	College Men	Musicians	Athletes
1.40-1.31	0	0	0	0
1.50-1.41	2	0	0	0
1.60-1.51	0	0	0	1
1.70-1.61	0	0	1	1
1.80-1.71	0	0	2	0
1.90-1.81	0	1	1	0
2.00-1.91	0	1	2	2
2.10-2.01	0	2	1	1
2.20-2.11	2	3	4	1
2.30-2.21	2	1	2	1
2.40-2.31	2	2	0	3
2.50-2.41	1	0	2	2
2.60-2.51	3	4	3	4
2.70-2.61	2	1	6	1
2.80-2.71	3	0	3	1
2.90-2.81	1	1	1	1
3.00-2.91	6	2	1	2
3.10-3.01	1	2	0	0
3.20-3.11	3	4	2	4
3.30-3.21	1	3	1	3
3.40-3.31	3	3	3	1
3.50-3.41	1	2	0	2
3.60-3.51	0	1	0	4
3.70-3.61	2	2	1	0
3.80-3.71	1	0	1	1
3.90-3.81	0	2	1	2
4.00-3.91	2	1	1	2
4.10-4.01	0	0	0	0
4.20-4.11	0	1	1	0
4.30-4.21	0	0	0	0
4.40-4.31	0	0	0	0
4.50-4.41	2	0	0	0
4.60-4.51	0	1	0	0
Total	40	40	40	40

Read table thus: In the interval 1.50-1.40 there are 2 college women, no college men, no musicians, and no athletes. Read in like manner for other grade index intervals.

TABLE III

GRADE INDEX OF THOSE COMPRISING THE FOUR GROUPS

Musicians		Athletes		College Women		College Men	
Sub.	Gr.	Sub.	Gr. Ind.	Sub.	Gr. Ind.	Sub.	Gr. Ind.
1	1.67	1	1.60	1	1.42	1	1.84
2	1.73	2	1.62	2	1.50	2	2.00
3	1.77	3	1.94	3	2.13	3	2.06
4	1.87	4	2.00	4	2.13	4	2.08
5	1.91	5	2.07	5	2.23	5	2.18
6	1.94	6	2.13	6	2.30	6	2.18
7	2.06	7	2.27	7	2.33	7	2.19
8	2.16	8	2.33	8	2.40	8	2.28
9	2.19	9	2.39	9	2.44	9	2.35
10	2.20	10	2.40	10	2.54	10	2.38
11	2.20	11	2.44	11	2.56	11	2.54
12	2.27	12	2.50	12	2.60	12	2.54
13	2.29	13	2.55	13	2.69	13	2.59
14	2.45	14	2.56	14	2.69	14	2.60
15	2.48	15	2.59	15	2.73	15	2.63
16	2.51	16	2.60	16	2.77	16	2.68
17	2.51	17	2.64	17	2.80	17	2.94
18	2.60	18	2.72	18	2.82	18	3.00
19	2.61	19	2.86	19	2.93	19	3.00
20	2.61	20	3.00	20	2.94	20	3.03
21	2.63	21	3.00	21	3.00	21	3.12
22	2.63	22	3.13	22	3.00	22	3.15
23	2.64	23	3.18	23	3.00	23	3.19
24	2.69	24	3.18	24	3.00	24	3.20
25	2.75	25	3.20	25	3.07	25	3.21
26	2.75	26	3.21	26	3.12	26	3.21
27	2.80	27	3.27	27	3.19	27	3.25
28	2.87	28	3.29	28	3.19	28	3.31
29	3.00	29	3.35	29	3.25	29	3.36
30	3.11	30	3.41	30	3.31	30	3.38
31	3.17	31	3.46	31	3.35	31	3.43
32	3.25	32	3.52	32	3.36	32	3.44
33	3.33	33	3.54	33	3.50	33	3.55
34	3.38	34	3.60	34	3.63	34	3.62
35	3.40	35	3.75	35	3.69	35	3.63

TABLE III (Continued)

GRADE INDEX OF THOSE COMPRISING THE FOUR GROUPS

Musicians		Athletes		College Women		College Men	
Sub.	Gr.	Sub.	Gr. Ind.	Sub.	Gr. Ind.	Sub.	Gr. Ind.
36	3.69	36	3.81	36	3.71	36	3.92
37	3.71	37	3.86	37	3.93	37	3.87
38	3.85	38	3.94	38	4.00	38	3.87
39	3.94	39	4.00	39	4.44	39	4.14
40	4.13	40	4.00	40	4.50	40	4.57

Read table thus: Subject No. 1 of the musicians had a grade index of 1.67. No. 1 of the athletes, 1.60. No. 1 of the college women, 1.42. No. 1 of the college men, 1.84. Read in like manner for subject No. 2.

Such arrangement of data reveals the following information:

The range of the grade index of the college women is greater than that of the other three groups, with the range of the college men second, the musicians third and the athletes fourth. This point is in favor of the activity group. The chief reason for the non-activity group having so great a range is due to the poor grade index made by some of the members of this group. Their respective average grade indices for the four groups are: 3.18, 2.73, 2.47, and 2.40.

The highest grade index is in the college women group. It is .18 of a point higher than the best of the athletes; 1.42 as compared with 1.60. The highest of the athletes is .07 of a point higher than the best of the musicians; 1.60 as compared with 1.67. The highest of the musicians is .17 of a point higher than that of the college men; 1.67 as compared with 1.84. This again favors the activity group with the exception of one case the activity group makes much higher scores.

The lowest grade index of the college men is 4.57 which is .07 of a point lower than the lowest of the college women and .44 of a point lower than the lowest of the activity group. This again is in favor of the activity group.

It is apparent that the range among the grade indices of the activity group is more gradual than that of the non-active

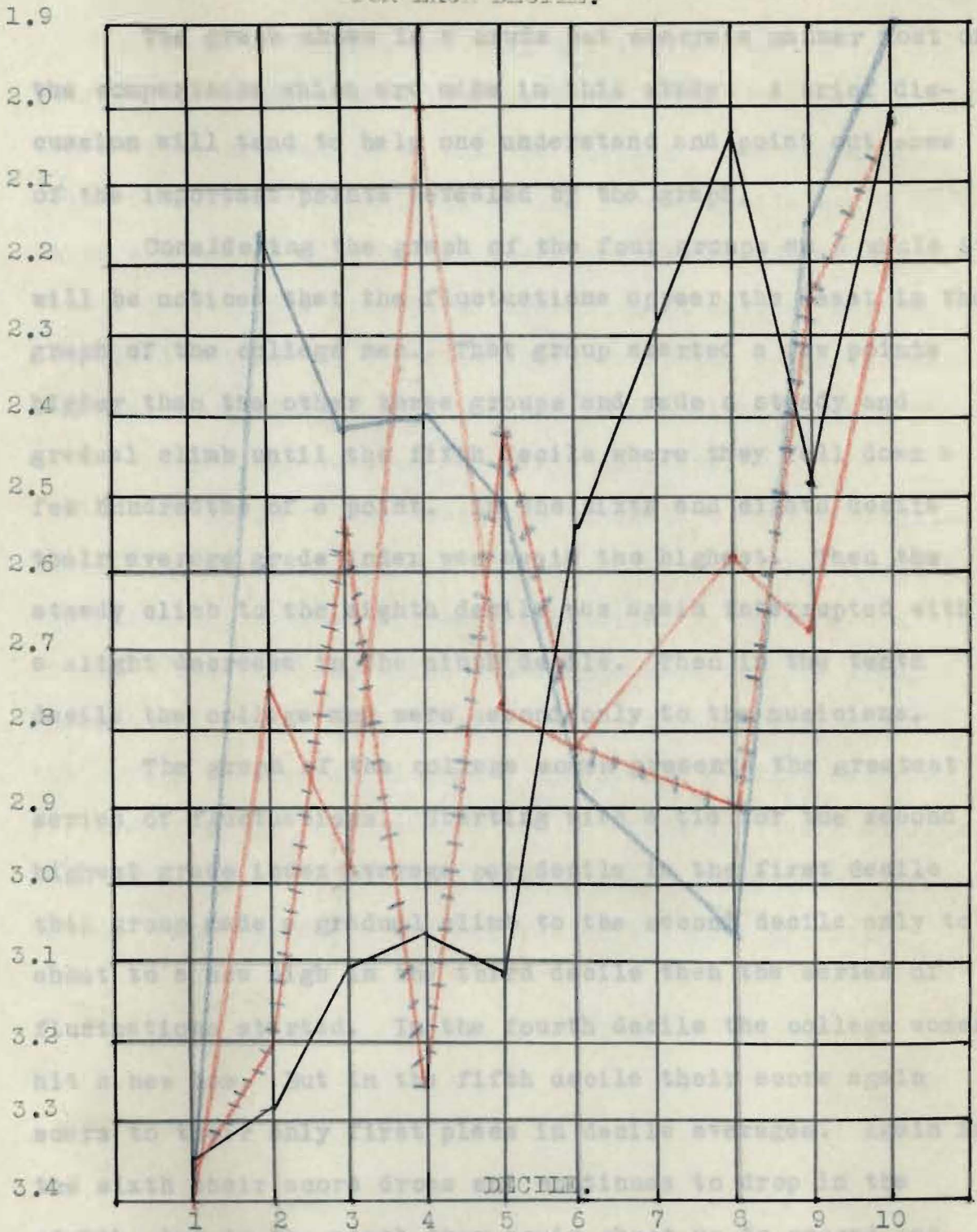
group. Again in favor of the activity group.

The quartile deviation shows that the grade indices are scattered in all groups. "Q1" and "Q3" mark off the limits within which fall the middle 50% of the measures in the distribution. "Q" . . . measures the average distance of the two quartile points from the median. . . if the scores are scattered, the quartiles will be relatively far apart and "Q" will be large.¹ "Q1" and "Q3" of the music group are 3.15 and 2.17, respectively. "Q" is .49. "Q1" and "Q3" of the athlete group are 3.45 and 2.41, respectively. "Q" is .52. "Q1" and "Q3" of the college women group are 3.33 and 2.54, respectively. "Q" is .395. "Q1" and "Q3" of the college men group are 3.41 and 2.17, respectively. "Q" is .45.

¹ Henry E. Garrett, Statistics in Psychology and Education. New York: Longmans, Green and Co., 1926, p.21.

SHOWING THE AVERAGE GRADE INDEX OF EACH GROUP

FOR EACH DECILE.



LEGEND: + + + + College Women. — College Men.
 — Musicians. — Athletes.

Read Graph Thus: Average grade index for the first decile of the College Women 3.39; College Men 3.35; Musicians 3.39 Athletes 3.41.

The graph shows in a crude but concrete manner most of the comparisons which are made in this study. A brief discussion will tend to help one understand and point out some of the important points revealed by the graph.

Considering the graph of the four groups as a whole it will be noticed that the fluctuations appear the least in the graph of the college men. That group started a few points higher than the other three groups and made a steady and gradual climb until the fifth decile where they fell down a few hundredths of a point. In the sixth and eighth decile their average grade index was again the highest. Then the steady climb to the eighth decile was again interrupted with a slight decrease in the ninth decile. Then in the tenth decile the college men were second only to the musicians.

The graph of the college women presents the greatest series of fluctuations. Starting with a tie for the second highest grade index average per decile in the first decile this group made a gradual climb to the second decile only to shoot to a new high in the third decile then the series of fluctuations started. In the fourth decile the college women hit a new low. But in the fifth decile their score again soars to their only first place in decile averages. Again in the sixth their score drops and continues to drop in the eighth, but in the ninth they again shoot up to second and finish third in the tenth decile.

The athletes present only one extreme that being in the fourth decile where they reached their highest average grade index score per decile of all the deciles. The score or grade index for the athletes in the fourth decile was 2.00 which was beaten only by the musicians in the tenth decile with a grade index average of 1.915. This extreme may be accounted for due to the fact that one of the subjects made a grade index of 1.62 which is the fourth highest grade index of the entire one hundred and sixty subjects.

The graph of the musicians presents a most unexpected curve. Starting with a tie for second in the first decile the musicians made an extreme fluctuation to reach a new high in the second decile, which was not reached by this group again until the ninth decile. From the second decile until the eighth the musicians made a steady and gradual decrease in average grade index scores but in ninth and tenth deciles they were highest. The musicians average grade index for the entire ten deciles was the highest of the four groups.

TABLE IV

A COMPARISON BETWEEN THE MEASURES OF THE FOUR GROUPS

Measures	Athletes	Musicians	Col. Women	Col. Men
Highest Gr. Ind.	1.60	1.67	1.42	1.84
Lowest Gr. Ind.	4.00	4.13	4.50	4.57
Range	2.40	2.46	3.18	2.73
First Quartile	3.45	3.15	3.33	3.41
Third Quartile	2.41	2.17	2.54	2.51
Quartile Deviation	.52	.49	.395	.45
Average	2.885	2.745	2.954	2.992
Median	2.95	2.63	2.93	3.21
P. E. Median	.099	.093	.0783	.090

Read table thus: Highest grade index for the athletes was 1.60; musicians, 1.67; college women, 1.42; college men, 1.84.

The measures of central tendency reveal the most condensed and apparent results of this study.

The average of the music group is 2.745 which is .14 of a point higher than the nearest group, the athletes. The combined average of the activity group is .11 of a point higher than that of the non-activity group. The average of the college women being 2.95 and the college men, 2.99.

The median, the point above which and below which fifty per cent of the grade index fall verifies these results with the single exception of the athlete and college women groups. In this particular case the college women are .02 of a point higher than the college men; 2.93 as compared with 2.95.

The "crude mode" or midpoint of the interval in which the most frequencies occur is higher for the music group but here again the same results appear as in the median in that the college women excel the athletes by .2 of a point, 2.95 as compared with 3.15. The mode also reveals that the college men come up to the same grade index as the athletes with 3.15 for each group.

The highest grade index is found in the college women group, and is .18 of a point better than the best of the athlete group, which is second; 1.42 as compared with 1.60. The music group had the third highest grade index and is .17 of a point better than the best of the college men; 1.67 as compared with 1.84.

The facts are that the musicians make the best scholastic marks or the highest grade indices, with the college football or athlete group second, followed by the college women and the college men make the lowest scholastic marks.

The measures of central tendency also show that the activity groups, that is the groups that participate in extra-curricula work that is time and energy consuming, do better scholastic work; or at least receive better marks, than do the groups who seemingly have no other purpose than to become proficient in scholastic work.

TABLE V

THE RELIABILITY OF THE DIFFERENCES BETWEEN
THE COMPARED GROUPS

Groups	Diff.	P.E. Diff.	$\frac{\text{Diff.}}{\text{P.E. Diff.}}$	Chances in 100
Mus.-Ath.	.32	.136	2.352	94
Mus.-C.W.	.30	.121	1.984	91
Mus.-C.M.	.58	.126	4.603	100
C.W.-Ath.	.02	.126	.158	54
C.W.-C.M.	.28	.115	2.434	95
Ath.-C.M.	.26	.131	1.984	91

Read table thus: In comparing the medians of the marks of the musicians and the athletes, there is a difference of .32 in favor of the former; the P.E. difference is .136; the ratio between the difference and the P.E. difference is 2.352; and this signifies that there are 94 chances in 100 of a true difference.

In order to make the significance of the data here-to-fore presented, to stand out more clearly, certain other statistical data have been computed. These are presented in Table V. From this table it will be observed that there was a difference of .32 between the median marks made by the musicians and the athletes. This difference was in favor of the former group. In order to comprehend the significance of this difference it must be noted that this difference divided by the P. E. of the difference yields a ratio, commonly known as the Critical Ratio, of 2.35. This ratio signifies that there are 94 chances in 100 of a true difference between these two groups. In the same manner it should be noted that there are 91 chances in 100 that the athletes median mark will exceed that of the college men. Also the musicians exceed the college women 91 chances in 100. The musicians exceed the college men 100 chances in 100. The college women exceed the college men 95 chances in 100. The college women exceed the athletes only 54 chances in 100. This is a definite factor in favor of the activity group excelling the non-activity group in grade marks. It will be noted that the musicians exceed all the groups, also that the athletes exceed the college men and the college women exceed the college men therefore the athletes who are all men do much better work than the college men in the face of the fact that the college women only barely exceed the athletes. These facts all

point to the supremacy of the activity group and show that the activity group makes better scores.

CHAPTER III

SUMMARY AND CONCLUSIONS

The purpose of this study has been to compare, on the basis of grade index scores, the scholastic success of four different groups of college students, to determine:

1. Whether participating in extra-curricular activities affect a student's grades
2. Whether it helps or is detrimental.

The four groups, the musicians, the athletes, the college women, and the college men were of equal scholastic ability, as far as decile ranking was concerned. The experimental factor was to extent to which students participated in out-of-class activities. The musicians and the athletes were very active in extra-curricula work, (it was found that they spent three and one-half hours per day with their activity) and the college men and women participated in no time-consuming campus activity. This division gives two groups, one the activity group and one the non-activity group. The data were collected from the Registrar's office of the Kansas State Teachers College of Emporia.

The groups are variable. The college women group is the most variable and the college men is the next most variable. The musicians are slightly more variable than are the athletes. This is a point in favor of participation in

extra-curricula activities. The range of the grade index of the college women is the greatest with 3.18. The range of the college men is second, the musicians third and the athletes fourth. Again this is in favor of the activity group, because there are more poor grades in the non-activity group than in the activity group.

The grade index of students who were active in extra-curricular work was generally higher than that of those of the non-activity group. The measures of central tendency show that the average and the median grade index of the activity group is .25 of a point higher than that of the non-activity group. This is a significant statistical difference.

From these data the writer would draw these conclusions:

1. That the scholastic work, as evidenced by marks, of students participating in extra-curricula work is of a better quality than that of students of equal abilities and qualifications who are not active in out-of-class work.
2. That the athletes make better scholastic marks than either the college women or college men but not better than the musicians.
3. That the college women receive better scholastic marks than the college men.
4. That the musicians receive better scholastic marks than any of the other three groups.

The measurement of college scholastic success of active and non-active students offers an abundance of opportunities for similar studies. Extensive research in this field will either verify or disprove the present conclusion--students

of equal native ability who participate in activities will as a whole reach a greater scholastic success than those who do not participate in extra-curricula activities.

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