

THE RELATIONSHIP BETWEEN SCHOLASTIC ACHIEVEMENT  
AND SOCIAL PARTICIPATION IN COLLEGE

by

EVERETT LEROY FIEDLER

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## INTRODUCTION

An important problem of education in years past has been to make adequate provision for the proper training of exceptional students. Better students in secondary schools have been retarded because of lack of facilities for advancement and because of a general belief that acceleration robs the student of much social training--one of the primary requisites of a well rounded education.

Recent trends have been to provide means of acceleration for capable students; and the man power shortage, as a result of war, has made such a great demand on colleges for trained men that various programs of acceleration are being adopted. The Educational Policies Commission of the National Educational Association recently proposed a plan for giving capable students as much training in three years as would normally take four years. In accordance with this proposal the universities and colleges of the State of Kansas recently approved a program whereby students in high school who have achieved senior standing at the end of the current semester and are not graduates and who rank in the highest ten percent of their class, may be recommended to the Board of Examiners for admission to College. The high school principal must make such recommendations and upon receipt of the nominations, the Central Office of the Board sends a test (or tests) for each

acceptable nominee to the principal with directions for administration. Tests are then returned to the Central Office for scoring and on the basis of these test scores and analysis of individual student data, the Board selects those it judges are qualified for entry into college.

To determine the results of studies made by previous writers, relative to the effect of acceleration on social training, the problem was reviewed from two angles: (1) social activities of students who are actually accelerated, (2) correlation of grades with social activities.

#### Effect of Acceleration on Social Training

That considerable acceleration need not impair scholarship or social adjustment is indicated by a study of the Hartman Junior High School of Hazelton, Pennsylvania. This study began in 1923 with the organization of special superior classes which completed the seventh and eighth grades in one year, i.e., reduced the junior high school period to two rather than the usual three years. Beginning in 1927, from 10 to 12 percent of the sixth grade students were selected on the basis of scholastic achievement, participation in extra-scholastic activities, social adaptability, and certain qualities of personality and health, for participation in this accelerated group. The experimental group were somewhat superior to their control group in American History and gen-

eral information test scores. Herr (1937), in summarizing this study, concluded that, "Acceleration in junior high school administered as described has not minimized the scholastic achievement of the accelerated pupils in senior high school". Such differences in academic achievement as were found were in favor of the rapid-progress group. A point system measurement of extra-scholastic participation shows the rapid-progress girls to be more active than the regular-progress girls; the rapid-progress boys are slightly more active than the regular-progress boys. The rapid-progress students ranked higher on social acceptability, as measured by self-ratings and by ratings of classmates.

Pressey (1943) made a study of acceleration and retardation as found among the students in the College of Education at Ohio State University over the past 20 years. He found that although in 1926-27 only 10 percent were accelerated (graduated younger than 21) by 1941-42 the number had fallen to a mere three percent. To find some evidence bearing on the argument that acceleration tends to cause social maladjustment, he made a count of the number of extra-curricular activities engaged in by each of the 437 students graduating in the school years 1941-42 and 1936-37. He found that the accelerated students averaged more participation than students of modal age (22) while still older students averaged less. The youngest group had 39 percent that participated in six or more activities as compared with 10 per-

cent for the oldest group. His conclusion was that, "So far as this evidence goes, accelerated students are not social isolates; rather the reverse is true".

#### Correlation of Grades with Social Activities

Remmers, Thompson, and Vaurio (1942) matched an experimental group, composed of 143 women and 139 men in one or more extra-curricular musical organizations, with a control group of equal size for ranks on two orientation tests, sex, classification, and schools. The experimental group achieved a slightly higher grade-point average for the given semester than did the control group; the difference is not statistically significant. Comparison of the experimental group with students in general at Purdue University indicates that better-than-average students participate in extra-curricular music activities.

Remmlein (1939) found a correlation of .25 between leadership and scholarship. She also found that the difference between school grades and intelligence test scores bore little or no relationship to the extent of participation in extra-curricular activities. She concluded that extra-curricular activities cannot be considered an important factor in determining low scholarship of intelligent students.

In a study of 512 high school students in Minnesota,

Smith (1936) found a direct relationship between ability and the number of activities participated in. He concluded that there was need for a study based on an equated system of activity data, a system which would differentiate between a managing editor on a publication and a reporter for that publication.

Wilkins (1940) attempted to carry out Smith's recommendation in a study of Oberlin College students in 1937-38 and 1938-39, he used a set of four ratings to determine the intensity of activities engaged in. The first rating, "O", designated, in general, officership or committee chairmanship; the second, "A", committee membership or other special major activities; the third, "M", minor special activities or memberships without special activities; and fourth, "X", included memberships in organizations which had no activity requirement. He found that 87.7 percent of all students participated in at least one organization, and that the average amount of participation was 2.46 activities. Activities increased only slightly from the freshman to the senior year, and as a whole those who were more active, socially, tended to have higher grades.

Bonar<sup>1</sup> developed an individual social development scale for ranking major social groups and a scale for determining

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<sup>1</sup> Thesis in preparation by Mr. Roy E. Bonar, Kansas State College, 1943.

the weight of various leadership levels. Seventeen individuals, most of them instructors at Kansas State College, were asked to rank 11 major social groups so that their comparative value for social development to the participating individuals would be indicated by the rank assigned. The raters were asked to make a percentage rating of the contributions of various kinds of social participation to social development in college. The presiding officership was taken as the standard of social participation, being given a percentage rating of 100. Membership and other officerships were each given a percentage rating of this value. A weighted scale was developed on the basis of these rankings and ratings. A copy of this scale, together with sample forms used in obtaining rankings and ratings, appears in the Appendix.

### Plan of Study

Previous writers have obtained a low-positive correlation by merely counting the activities participated in. Others, have examined students actually accelerated in college but found that only a small portion were accelerated. The question arises as to whether or not more students might be accelerated without serious loss of social training. It is believed that a worth-while acceleration program might well include more students than are now accelerated and should involve more discriminating measures than a mere count of activities participated in by each student. The present study



attempts to meet these requirements by collecting data on all college graduates in selected divisions, and by making use of a scale that takes into account different values of the various activities in which students participate.

#### METHODS AND PROCEDURE

The scholastic records of all the class of 1942 in the Schools of Arts and Sciences, Agriculture, and Home Economics, who attended Kansas State College the full four years were used. These data were taken from official records in the Registrar's Office and included the achievements of 113 graduates. The records of the social activities of these students were obtained from the College Year Book in the Royal Purple Office. The social activity scale developed by Bonar (Appendix) was used in the statistical analysis of this group.

In examining the relationship between scholastic achievement and social participation two scatter diagrams were prepared. One diagram contained the data showing the relationship between social leadership and scholastic achievement as determined by honor points. The other was made up of the data showing the relationship between general social participation and scholastic achievement. From these diagrams were determined the "product-moment" coefficients of correlation and the correlation ratios.

## RESULTS

Comparison by Correlation Coefficients  
and Correlation Ratios

Results of correlation between general social participation and scholastic achievement is considered first. The correlation coefficient found was .293 for the entire group of 113 college graduates with a probable error of .058. This coefficient is more than four times its probable error and is therefore significant. The correlation ratios were .553 and .363 with probable errors of .045 and .055 respectively. "Blakeman's Test" for linearity revealed that  $N(\eta^2 - r^2) = 23.41$  and  $N(\eta^2 - r^2) = 5.189$  with an average of 14.303, indicating that the regression may be treated as nonlinear.

The results of correlation between leadership and scholastic achievement were as follows: The correlation coefficient was .345 with a probable error of .055. The correlation ratios were .374 and .479 with probable errors of .055 and .049 respectively. The correlation coefficient and correlation ratios are more than four times their respective probable errors and hence may be considered significant. Applying "Blakeman's Test" for linearity,  $N(\eta^2 - r^2) < 11.37$ , it is found that  $N(\eta^2 - r^2) = 2.356$  and  $N(\eta^2 - r^2) = 12.47$  with

an average of 7.413. This result indicates that the regression may be treated as linear.

#### Correction for Nonlinear Regression

Moore's (1937) method of correction for nonlinear regression was applied to these data. By Moore's method a theoretical average is determined by drawing a straight line connecting the actual average in the first column with the actual average in the last column of a scatter diagram. The averages of all cases falling in the intervening columns are then corrected to make the actual average of each column coincide with the theoretical average, i.e., to make all column averages fall on the straight line mentioned above. Having made these corrections, a new scatter diagram is used on which is located each of the corrected scores. The effect of this correction is clearly shown by the two scatter diagrams in the Appendix. Having made this correction, new correlation coefficients were determined. By this method the correlation between leadership and scholastic achievement rose from .345 to .623 with a probable error for the latter of .039. The correlation between general social participation and scholastic achievement rose from .293 to .448 with a probable error in the new  $r$  of .050. The average  $\gamma$  value of social development vs. grades was .458 which is very close to the .448 value obtained by the Moore method.

### Comparison by Ranking

As a further basis of comparison the 113 students were ranked according to their honor-point scores. These scores ranged from .86 to 2.93. Leadership and social participation scores were then arranged according to this ranking and were totaled by fifths. Table 1 shows the results of this tabulation.

Table 1. Differences and reliability of differences between means for leadership.

Level in: fifths :	Mean :	S.D. of: mean :	Diff. of means	S.D. of diff. :	Critical ratios
I*	12.805	2.978			
II	8.282	1.897	(M <sub>I</sub> -M <sub>II</sub> ) = 4.523	3.531	1.28
III	5.792	2.042	(M <sub>I</sub> -M <sub>III</sub> ) = 7.013	3.611	1.94
IV	5.061	1.617	(M <sub>I</sub> -M <sub>IV</sub> ) = 7.744	3.388	2.29
V	2.218	0.749	(M <sub>I</sub> -M <sub>V</sub> ) = 10.587	3.071	3.45
Mean of entire group	6.911				

\* Roman numeral (I) represents the first or highest fifth, (II) the second fifth, and so on down to (V) which represents the fifth or lowest fifth.

Table 2. Differences and reliability of differences between means for general social participation.

Level in: fifths :	Mean :	:S.D. of: mean :	Diff. of means	:S.D. of diff. :	:Critical ratios
I*	24.784	3.939			
II	15.561	2.124	( $M_I - M_{II}$ ) = 9.223	3.167	2.91
III	11.862	2.682	( $M_I - M_{III}$ ) = 12.922	4.149	3.11
IV	11.819	2.578	( $M_I - M_{IV}$ ) = 12.965	4.083	3.18
V	13.263	1.879	( $M_I - M_V$ ) = 11.521	3.682	3.13
Mean of entire group	15.674				

\* Roman numeral (I) represents the first or highest fifth, (II) the second fifth, and so on down to (V) which represents the fifth or lowest fifth.

The gain in mean leadership scores of the highest fifth over each successive fifth, together with the significance of each gain was as follows: Gain of first over second 4.432; standard deviation of gain 3.531; critical ratio 1.28. This result indicates that the chances are 90 in 100 that the obtained difference is positive. Gain of the first over the third 7.013; standard deviation of gain 3.611; critical ratio 1.94. The chances are 97 in 100 that this difference is positive. Gain of first over fourth 7.744; standard deviation of gain 3.388; critical ratio 2.29. There are 99 chances in 100 for this difference to be positive and only one chance in 100 for it to be negative. The gain of the first over the fifth 10.588; standard deviation 3.071; critical ratio 3.45. There are 999 chances in 1000 for the difference

$M_I - M_V$  to be positive and only one chance in 1000 for it to be negative.

The gain in general social participation scores of the highest fifth over each successive fifth were: First over second 9.223; standard deviation 3.167; critical ratio 2.91. First over third 12.922; standard deviation 4.149; critical ratio 3.11. First over fourth 12.965; standard deviation 4.083; critical ratio 3.18. First over fifth 11.521; standard deviation 3.682; critical ratio 3.13. The chances are a little better than 998 in 1000 that the difference of the first fifth over the second is positive and for all other differences the chances are better than 999 in 1000 that they are positive. In other words, if the critical ratio is 3.00 or more, it may be said that the difference is certain beyond reasonable doubt.

Data in Tables 1 and 2 indicate that the highest or most scholarly fifth of students show nearly 50 percent more social participation than the second highest fifth. As compared with the middle, or third, fifth, the highest fifth participated in over 100 percent more social and leadership activities. The highest fifth show over 100 percent more leadership participation than the mean participation of the entire group; and 60 percent more general social participation than the mean.

## SUMMARY AND INTERPRETATION

This study was made to determine the relationship between participation in extra-curricular activities and scholastic achievement in college.

Participation in extra-curricular activities was divided into two types: leadership and general social participation. As determined by correlation coefficients and correlation ratios, the correlation between leadership and scholarship was found to be higher than between general social participation and scholarship.

The correlation coefficients were low but significant. They were higher than those obtained, by previous writers, relying entirely upon a mere count of the number of social activities participated in by individual students. The scale, by which social participation was measured in this study, is imperfect in that it fails to make proper distinction between those cases falling near the zero point. This is evidenced by the fact that 18 of the 113 graduates were given no general social participation score and 43 out of 113, no social leadership score. It is unreasonable to assume that an individual could attend college four years without having acquired some social training. It is highly probable that leadership is more general than revealed by a

scale based primarily on an officership basis. Since it is entirely possible that one who is but a member of an organization will contribute as much as an officer or perhaps more in the way of leadership, it is reasonable to assume that out of the 43 graduates given no leadership score, some may have made a contribution in this respect.

Two factors may be responsible for failure to obtain scores for many students. In the first place there would have been no participation in extra-curricular activities reported for those students who belong to no social organization. Secondly, the records in the Royal Purple Office may be incomplete due to failure, on the part of students, to report all their activities or perhaps to return questionnaires sent to them for making such reports.

Failure to obtain scores for students at the lower end of the scale may well be responsible for obtaining correlation coefficients lower than their true values. Even the higher values indicated by the correlation ratios and by Moore's method would tend to be lowered somewhat by this defect in scaling. It is difficult to see how this defect can be corrected so long as social participation and leadership are rated by the activities indicated in the College Year Book.

The ranking of students according to grade-points revealed that those having the highest scholarship were more active, not alone from the standpoint of leadership, but in



general participation in extra-curricular activities as well.

The results of this study make some additions to the findings of previous writers. Higher correlations between scholarship and participation in extra-curricular activities were obtained. It is felt that the results of this study would justify an acceleration program that would include a much larger number of college students than are now being accelerated, without fear of endangering the social development of the accelerates. Observation of social tendencies by student counselors may well exclude some students from acceleration who rank high in scholarship and perhaps include some whose scholarship ranks lower. In general, however, there is every reason to believe that with few exceptions at least the highest fifth of college students would obtain adequate social training in less than four years of college attendance. Since all abilities are positively correlated it is reasonable to assume that the developmental value of superior social participation in the highest fifth would be further augmented by their greater rapidity of learning from equal amounts of experience.

A study of student participation in extra-curricular activities throughout four years of college attendance might be worth while if definite plans were made for complete recording of all activity participation and for proper evaluation of those activities.

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**APPENDIX**

## COMPARATIVE SOCIAL VALUES DEVELOPED BY BONAR

## Social fraternities and sororities

President	7.21
Vice-president	4.27
Secretary	3.97
Treasurer	5.17
House manager	6.73
Pan-hellenic Rep.	3.84
Inter-Frat. Rep.	3.79
Social chairman	3.97
Member	3.04

## Athletic or physical ed. clubs

President	4.24
Vice-president	1.48
Secretary	3.01
Treasurer	2.50
Member	1.40
Intra-mural Part.	1.78
Intra-mural Mgr.	3.86

## Student governing organizations

President	6.44
Vice-president	5.73
Secretary	5.54
Treasurer	3.80
Council member	3.41

## Independent social groups

President	5.34
Vice-president	3.10
Secretary	2.35
Treasurer	2.46
Social chairman	6.02
Member	1.66

## Religious organizations

President	6.30
Vice-president	3.59
Secretary	4.10
Treasurer	4.66
Cabinet member	4.60
Member	2.02

## Departmental clubs

President	4.92
Vice-president	2.31
Secretary	4.38
Treasurer	3.35
Member	1.97

## Class organizations

President	2.33
Vice-president	1.07
Secretary	1.82
Treasurer	2.03

## Literary societies

President	4.36
Vice-president	2.57
Secretary	2.53
Treasurer	1.92
Inter-society council Rep.	1.53
Member	0.96

## Athletic squads

Captain	4.28
Varsity letterman	3.12
Squadman	2.31

## Publication staffs

Editor	5.87
Assistant editor	4.11
Business manager	4.58
Assistant business manager	3.52
Other staff Mem.	3.17
Reporters	1.94

## Miscellaneous

President	3.71
Vice-president	1.60
Secretary	1.86
Treasurer	1.74
Member	1.08

(Sample of the Form Used by Bonar in Obtaining the Ranks of the Eleven Major Groups of College Activities.)

### INDIVIDUAL SOCIAL DEVELOPMENT SCALE

Social development as used in this particular problem is a broad term which includes mastery of common social conventions, ability to work with people, qualities of leadership, and in general those qualities which the individual needs to live with other people throughout life.

In order that a scale be set up whereby individual social development through participation in social activities may be determined, it will be necessary to weight the various major fields of social activity from the standpoint of individual social development derived from each.

In using this ranking scale it will be necessary to keep in mind that the individual social development is being considered and not the value to the particular organization or to the institution at large.

Eleven major social groups of the college are listed below. Will you rank them so that their comparative value for social development to the participating individuals will be indicated by the rank assigned? For example; the rank of "one" should be given to the group in which the participating individuals usually receive the greatest amount of social development, a rank of "two" should be given the group in which the participating individuals receive the second greatest amount of social development, and so on through the eleven groups.

Rank

- \_\_\_\_\_ College fraternities and sororities; includes all organized Greek social groups both local and national.
- \_\_\_\_\_ Independent social groups; includes all independent social societies under the supervision of the college.
- \_\_\_\_\_ Departmental clubs; includes all societies which might come under the head of departmental organizations. Musical groups, agriculture economics club, and scabbard and blade would be examples.

- \_\_\_\_\_ Class organizations; includes the four regular undergraduate class organizations.
- \_\_\_\_\_ Literary societies; includes such organizations as Ionians, Hamiltons, etc.
- \_\_\_\_\_ Athletic or physical education clubs; includes such organizations as W. A. A., K fraternity, and intramural groups.
- \_\_\_\_\_ Athletic squads; includes squad members in all major sports.
- \_\_\_\_\_ Religious organizations; includes all religious societies which serve college students.
- \_\_\_\_\_ Publication staffs; includes such groups as Royal Purple staff, Collegian staff, and Kansas State Engineer (student publication) staff.
- \_\_\_\_\_ Student governing organizations; includes such organizations as student council, inter-fraternity for men, Panhellenic for women.
- \_\_\_\_\_ Miscellaneous; includes those organizations which cannot be classified under any of the above groups. Examples of such organizations would be the collegiate 4-H club or glider club.

(Sample of the Form Used by Bonar in Obtaining the Comparative Contributions of Various Kinds of Social Development in the Various Social Groups. The Form Used for Religious Organizations Was Representative of the Form Used For All Eleven Groups.)

COMPARATIVE CONTRIBUTIONS OF VARIOUS KINDS OF SOCIAL PARTICIPATION TO SOCIAL DEVELOPMENT IN COLLEGE

Social development as used in this problem is a broad term which includes mastery of common social conventions, ability to work with others, qualities of leadership, and in general those qualities which help the individual to live with other people.

With the presiding officership taken as the standard of socializing value, will you state what percent of this standard value you attribute to each of the other officerships or kinds of participation? For example; if in your judgment the secretaryship contributes one-fourth as much social development as the presiding officership contributes, then participation as secretary would be given a twenty-five percent rating. Please note that it is possible to give a kind of participation a rating higher than 100 percent. Please base ratings on average individual social development and not upon a maximum amount of development.

Religious organizations (all religious societies serving college students)

Percent rating	office or kind of participation
<u>100</u>	president
_____	vice-president
_____	secretary
_____	treasurer
_____	cabinet member
_____	member



Table 3. Correlation between honor points and general social participation  
(Present study).

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total
		0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	
1	.80			1		1												2
2	.95		1	1		1												3
3	1.10		2	3	2	1			1									9
4	1.25	6	4		1			1	2									14
5	1.40	4	2	5	2	1	1	1										15
6	1.55	1	5	4	3			1						1				15
7	1.70	3	4	2	2													10
8	1.85	1	2	2	2	1						1						9
9	2.00		2	3	3	5	1			1								15
10	2.15	3		1	1	1												6
11	2.30		1	3	2										1			7
12	2.45				2				1									3
13	2.60							1	1								1	3
14	2.75				1													1
15	2.90								1									1
Total		18	23	24	21	11	2	3	6	1	0	1	0	1	1	0	1	113

Table 4. Correlation between honor points and general social participation after making Moore's correction for nonlinear regression (Present study).

	:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total
		0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	
1	.80																	0
2	.95			1		2												3
3	1.10		1	3	2	1	2											9
4	1.25		2	6	2		1	1		1								13
5	1.40			2	4	1	2			1	2							12
6	1.55		1		1	5	2	1	2									12
7	1.70			1	7	3	1		1	1								14
8	1.85			1	1	3	5	1										11
9	2.00				2	3	1	1										7
10	2.15				2	3	1	4	1			1						12
11	2.30					1	3	2	1	1				1				9
12	2.45				1	2										1	1	5
13	2.60								1	1				1				3
14	2.75				1	1												2
15	2.90								1									1
<b>Total</b>		0	4	14	23	25	18	10	7	5	2	1	0	2	0	1	1	113