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## Factors Related to First Year College Success in a Selected Group of Scholarship Recipients

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FACTORS RELATED TO FIRST YEAR COLLEGE SUCCESS IN  
A SELECTED GROUP OF SCHOLARSHIP RECIPIENTS

by

LaVerl C. Giles

A thesis submitted in partial fulfillment  
of the requirements for the degree

of

MASTER OF SCIENCE

in

Guidance and Counseling

Approved:

UTAH STATE UNIVERSITY  
Logan, Utah

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To my husband, Jim, and each of our four children my love and appreciation for the sacrifice they have made in order for me to complete this study.

LaVerl C. Giles

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## INTRODUCTION

### Statement of the Problem

The idea of a scholarship program is almost as old as the oldest institution of higher learning. The universality of such a program is almost completely comprehensive throughout the world. Although the purpose of scholarship programs has varied as much as each of the institutions varies, in most of the situations the programs have been well acclaimed. The success of these programs in terms of the student has often been tested or at least scrutinized. This type of study has been attempted several times. However, both Harris (11) and Endler (7), in reviewing the literature from 1931 to 1959, report that there is little agreement as to the relative merit of any particular kind of test, scores, grades, or other subjective evaluations used to select successful scholastic achievers. Henceforth, throughout this paper, these selective factors and others to be cited will be referred to as factors or variables predictive of academic success or predictive factors.

### Purpose of the Study

A more complex type of problem associated with the granting of scholarships has been that of predicting the

successful scholarship recipient. That is, the scholarship recipient who will be successful in college. An extensive review of the literature to date reveals only a few scientific studies on the predictors of successful scholarship holders. Most of the studies were conducted in an attempt to predict college success, using the grades for the first year of college as the criterion of success. Therefore, with confusion in the area of predicting college success as indicated by the author cited above, the need for such a study is evident.

The purpose of this investigation will be to identify some of the variables which appear to be predictive of or correlates of the successful scholarship recipient. In this study it will be necessary to define what the writer means by successful scholarship recipient. Hereafter the term successful scholarship recipient will refer to those students who have been able to maintain, during their freshman year of college, a grade point average of 3.0 or B average. Universities and colleges generally require that a student maintain at least a grade point ranging from C to B to retain his scholarship. He must also live in accordance with the rules and regulations of the institutions. Very few scholarship recipients, for example, lose their financial aids for reasons of incorrigibility. The criterion for success, therefore will be that of maintaining the grade point average required.

In this investigation the writer will attempt to answer the following questions: (a) What type of test scores, grades, evaluations or non-intellectual or biographical factors can be used to identify scholarship recipients who will be successful in college; (b) will the use of several factors together be more predictive of the academic success of scholarship recipients; (c) are non-intellectual or biographical factors useful in selecting scholarship recipients; (d) can the factors predictive of academic success now in use be validated.

### Hypotheses

To accomplish the purpose of this investigation the following hypotheses were formulated:

1. It is hypothesized that there are certain predictive factors which are characteristic of successful scholarship recipients. It is further hypothesized that these factors will be revealed by a follow-up study of those students who have received scholarships at Bonneville High School over the past three years.

2. It is hypothesized there will be certain biographical or non-intellectual factors, which will be predictive of recipients of high school scholarships.

3. It is hypothesized that high school grade point averages and college entrance examination scores will correlate most significantly with the success in college of these scholarship recipients.



4. It is hypothesized that high school teacher and counselor ratings of scholarship recipients will correlate significantly with the successful scholarship holder.

## REVIEW OF LITERATURE

The review of the literature will include studies which have attempted to find predictors of college success inasmuch as college success is the criterion for the successful scholarship recipient.

The predictive variable, around which the greatest number of studies have been conducted is that of high school grade point average or rank in the graduation class. Since the rank of the graduating class is based on the grade point average, these two terms are used synonymously. Rosen and Van Horn (20) conducted a study of Purdue University using 1100 freshman students. The grade point averages of the 1100 students were correlated with their freshman grade point averages in college. Rosen and Van Horn reported a correlation of .56 which was significant at the 1 percent level of confidence. They reported that a good grade point average in high school was the most promising predictive factor for college success.

Using college freshman, Pierson (18), attempted to predict college success with the use of high school grades. After using many personality variables and other factors to be reported in another section, he finally concluded that high school grades were the best single predictor of college success.

In a review of the literature from 1931 to 1939, Harris (11) also concluded that high school grades were the best single predictor. However, he did feel that other factors could be found to be of predictive value. This same finding was reported by Endler (7), who reviewed the literature from 1950 to 1959. He reported that:

There is little agreement as to the relative merit of any particular kind of predictive factor. In general, aptitude and achievement had a greater predictive value than social or personal factors. (p. 694)

Several other well-conducted studies concerning the prediction of college grades, have reported correlations of from .50 to .67 between aptitude and achievement factor and college success in terms of grades (6, 11, 21, 60, 9).

Meehl tested the value of predicting successful scholarship holders by a statistical procedure versus the subjective method. He (16), found that the statistical procedure using grade point average was more fruitful than scholarship committees' predictions based on their familiarity with the student. It was a new twist to almost the same situation.

Krugman (15), at Washington Square College of the University of New York, used all of the students' grades to identify scholarship holders. He found that the distribution of grades for scholarship students was considerably lower in the percentage of C, D, and F

grades. This was just another way of saying that successful scholarship recipients could be predicted by grades which they received. Thus, it appears that they were more successful in terms of better grades.

Meehl (16), reviewed twenty of the most significant studies in the area of scholarship selection and indicated the need for further study. He did say that it was apparent to him that tests were one of the factors which could be used advantageously in the selection of successful candidates for scholarships.

At Purdue, Rosen and Van Horn (20), correlated the Purdue Placement Test with the first semester grade point averages and obtained a correlation of .50. This correlation was second only to that obtained when high school grades were used as the predictors. Although the Purdue Placement Test is not a nationally used test, it appears to this writer that its correlations with college grades was about as significant as other standardized tests.

Mellenkopf (17), predicted college success using the Scholastic Aptitude Test (S.A.T.). He found that he was able to predict high scholarship achievement for those students who received scores on the S.A.T. at the 95th percentile or better. The National Merit Scholarship program uses this same test and makes awards to those students who score above the 97th percentile. And another study Mellenkopf (17), found that placement tests given

to freshman students were predictive of college success. His studies seemed to be too poorly reported to place much weight on them.

Endler (7), has done extensive study using achievement and aptitude tests to predict college success. He found that the tests which appeared to be the best predictors of college success were the Sequential Test of Educational Progress, an unidentified reading test, and the verbal and total scores on the School and College Ability Test. The Correlations ranged from .39 to .69 and all were significant at the 1 percent level of confidence. Middleton (17), reported that the results from his research indicate the best predictor of college success to be a combination of aptitude test scores and high school performance. He indicated that he felt that attempts should be made to improve the prediction by using non-intellectual factors such as interest and personality traits. Although his own research proved to be discouraging with the use of such variables, Middleton encouraged continued research with these kinds of predictors.

Pierson (18), made attempts at the use of personality traits to predict college success. The specific traits that he used were: industry, leadership, emotional stability, cooperation, initiative, and sociability, as they were judged by the teachers and counselors. All of

these personality traits, as defined by Pierson, proved to be of little predictive value. Even in multiple correlations the predictive value was very slight.

Jensen (14), used University of Utah freshman from general psychology classes as subject on which to test the use of the M.M.P.I. in predicting college success in academic areas. He reported that most personality traits, where success in academic areas is concerned have proven more fruitful with the non-achiever than the high achiever. He did not find any one personality trait or scale that had special predictive value for college success. In his report, however, he stated that high-achievers were more normal in their pattern on the M.M.P.I. than were low-achievers. This is not to say, however, that the high-achievers were all normal and the others were not. Hewitt and Rosenberg (12), also used the M.M.P.I. and found the results insignificant.

The prediction of academic achievement with the California Psychological Inventory (C.P.I.) was attempted by Rosen and associates (20). Using the 18 personality traits of the C.P.I., these researchers correlated them with the grade point averages of 162 freshman students. Only 3 of the 18 personality traits indicated a relationship with the grade point averages. These factors were: (a) Capacity for Status, which correlated .44; (b) Tolerance, which correlated .42; and (c) Achievement via Independence, which correlated .46. All of these correlations were

significant at the 1 percent level of confidence. Thus it appears that personality tests have not proven to be as good a predictor of college grades as have Tests of Aptitude & Achievement.

Goodstein and Heilbern (10), used the Edwards Personal Preference Schedule, with its 15 factors, to predict college achievement. Like other studies using personality traits their results were discouraging. They sampled 357 of the undergraduates at State University of Iowa and found the highest correlation to be .33 with the high ability group, and this was obtained on the factor of Intraspection. Their conclusion was that there would need to be more research with this particular instrument.

Another method used for predicting college success has been the subjective predictions by teachers, counselors and the students themselves. Robertson (19) reported a correlation of .38 between students' estimates of the grades they will receive in college and the grades they actually received. Counselors' estimates correlated with the actual grades earned by the students at .50. Young (24), found similar results in studies of the same nature, except that he found a correlation of .71 between student estimates and their actual grades. In Young's study, counselor estimates with actual grades showed a correlation of .68.

Budd (2), reported findings somewhat opposite to those of the previous writers. His studies indicated correlations between students' estimates and actual grades to be only .29, while that of the counselors' estimates and actual grades were .76. He indicated that counselors tend to over-rate the low achiever. Budd's study is in agreement with Freehill (8), who found a correlation of .25 between student estimates of their grades and their actual grades during the freshman year at college.

Pierson (18), used high school teachers' and counselors' estimates to predict college grades. He found a correlation of .58 between the actual grades and the combined estimates of the counselors and teachers. This correlation does not differ markedly from the results of studies previously reported. These studies do suggest however, that estimates of pupils, counselors, and teachers are better predictors of college success than social or personality tests.

Some writers have indicated that students who intend to be successful in college must take certain high school courses to prepare themselves. Cook and Martinson (4), studied the high school courses and the college success of 1000 men and 800 women, all of whom were freshman students. They reported that there were no particular set of high school courses which, when successfully completed, were predictive of college success. Especially did they find this true of English courses.



Thistlewaite (22), in a study of 6,276 scholarship applicants, found that neither college preparatory or non-college courses were predictive of successful scholarship recipients. He indicated that there were other reasons why students who were scholarship winners were also successful college students. He suggested that such factors as applying for more than one scholarship, being a male student, planning to enter science or math, where the father is in a professional or managerial field, and encouragement by counselors and teachers may be significant reasons why certain students succeed in college. Endler (7), reports that females showed higher G.P.A. in college than did the men. Females also showed an increase in their achievement while men showed a drop in achievement. Cole (3), Mellenkopf (17), and Harris and Schenk (11), have all indicated that financial need may play a role in the prediction of success. However, they have not attempted to support their ideas with research.

After reviewing the many studies which have been carried out in relation to the present study, it is even more evident that the conclusions of Harris (11), and Endler (18), concerning the inadequacy of predictors of academic success are correct. While one study contradicts another and adds more confusion to the situation, one cannot help but wonder about the research design,

sampling procedures, criteria employed, statistical procedures and biases of contradictory studies. It is evident that more scientific research needs to be done. New points of view and new approaches to research must be employed to reach the predictor or predictors of college success.

In general, researchers have found high school grade point averages have to be the best predictors of college success. Tests, which have been nationally, and in some cases locally standardized and used, seem to have the next best predictive value. Personality traits have not as yet been tested in such a way to prove to be of predictive value in determining college success. While estimates of grades to be earned have proven to correlate in the .50's with the actual grades received, these estimates appear to be based on factors already proven to be the best predictors, that is previous grades and standardized test scores. It is difficult, therefore, to determine what is teacher, counselor, and pupil estimate and what is actually prediction from previous achievement and knowledge of test scores.

It has been presented by research that courses of study are of some predictive value, but just how much value is in need of more and better study. Many other factors have been considered and suggested to possibly have predictive value in determining college success.

Some of these are applicable to predicting the successful scholarship recipient. However, at this time it is uncertain which factor can be used and which will be the most promising.

The endeavor of this writer will be, therefore, to research experimentally this problem with the determination of successfully proving the predictive value of such factors in determining successful scholarship recipients.

## METHOD OF PROCEDURE

### Locale of Study and Selection of Subjects

The present study was conducted in the Bonneville High School, Weber School District, Ogden, Utah. Data were collected for scholarship winners for the years 1961, 1962, 1963, etc. This school was selected because of the availability of the subjects and of the data and because it was felt that, in general, this school typified most college preparatory high schools. All of the students in the study were awarded scholarships to attend institutions of higher learning. The sample was positive and no attempt was made to equalize the sample on basis of sex or any other criterion.

### Procedure

Data collected for each student included cumulative records, counseling reports, test score records, the evaluations from teachers and counselors which were available from the Faculty Scholarship Selection Committee, and the results of college entrance examinations as reported to the school by the various institutions of higher learning. Confirmation of records which appeared to be questionable in any way was made through personal interview with the subjects involved. The various scores

and measures were tabulated on 5 x 8 cards to facilitate the copying of the information onto IBM data cards.

The following information was extracted from the individual's cumulative records: high school grade placement for the California Achievement Test, the high school overall grade point average, the number of children in the family, the father's occupation, the mother's occupation, the father's and mother's education, and identification data. From the records in the counseling service were obtained the teachers' evaluations and counselors' evaluations of the Scholarship Selection Board. The college placement scores were obtained from each of the colleges or universities on official record forms. The cooperation of the colleges and universities was solicited in sending each student's cumulative grade point average for his entire freshman year to the researcher. The college grade point average was used as the criterion of success in college.

The data were extracted from the 5 x 8 working cards and punched by the university key punch operators into IBM cards. Data for each student were punched into his individual card with identification data included. The data were then analyzed by three procedures:

1. Correlations between all of the predictive factors were computed using the Pearson correlation of coefficient.

2. Multiple correlations using all of the factors were computed to determine the significance of using all of the variables for predictive purposes.

3. In the calculation of the multiple correlation the variables which appeared to be most predictive of college success as indicated in the literature cited above was used at the first factor in the multiple correlation.

The correlations were computed between each of the variables and first year college grades as a means of determining which of the variable correlated highest for attempting to identify which of the scholarship recipients were most successful.

After this basic correlation was computed, each additional factor was added to the multiple correlation to determine the amount of relationship which would be added to the total multiple correlation by the added predictive variable. This procedure was followed in order to facilitate IBM programming.

The information concerning the father's occupation and the mothers' occupation were quantified by use of D. O.T. coding system. This information was gained from the Dictionary of Occupational Titles, which is a department of Labor Publication. The titles listed in the Dictionary of Occupational Titles were as follows: Professional, Semi-professional, Managerial, Clerical, Service, Skilled, Semi-skilled, Unskilled, and Agricultural. Quantifying these data by use of this

system was systematic and consistent. This quantification was done in order to show the relationship between the level of the occupation of the parents and the overall success in college, as well as of the other variables included in the study.

Inasmuch as each institution of higher learning that was used in the study uses a different placement examination to some extent, Weber and University of Utah use a locally standardized test, Brigham Young University and Utah State University use the ACT, it was necessary to use a national percentile score in order to make the data comparable.

## FINDINGS

The findings of this study are reported under three major headings:

1. The relationships between each of the variables used in the study.
2. The predictive validity of each of the independent variables in terms of the criterion.
3. The significant contributions of each of the predictive variables to the multiple correlation.

### The Relationships Between Each Of The Variables

The results of this study reveal a number of significant correlations between most of the variables. The correlations and the significance of these correlations are: (a) a correlation of .73 between the California Achievement Test and counselors evaluations, (b) a correlation of .72 between English and science college placement scores, and (c) a correlation of .61 between science and math college placement scores. These correlations were highly significant and show close relationships.

A second group of significant correlations were found in the relationships between high school grade point average and teacher's and counselor's evaluations, and between counselor's evaluation and the mother's education. Most of the insignificant correlations were obtained



between the biographical factors and the following: test scores, college grade point average, and the counselor's and teacher's evaluations.

A discussion of the predictive significance of these relationships follows the tables.

The Correlation Of Each Of The Independent  
Variables In Terms Of The Criterion

The correlation between each of these independent variables and the dependent variables are found in Table 2. The best correlate with the criterion, college grade point average, was the California Achievement Test taken in high school. This variables yielded a correlation of .48, significant at the 1 percent level. The second best correlate with the criterion was the counselor's evaluation, with a correlation of .43, significant at the 1 percent level.

Suprisingly, the next highest correlation was found between the criterion and the mother's education, with a correlation of .29, significant at the 1 percent level. Although this correlation does not indicate a close relationship, it does show some relation to college grade point average in this particular sample. A correlation of .25, significant at the 5 percent level, was found between teacher's and counselor's evaluations and the college grade point average. Other correlates which showed some relationship to the criterion

Table 1. Intercorrelations of coefficient between the 14 variables used in this study.

	High School G. P. A.	C. A. T.	English	Science	Math	Counselor evaluation	Teacher evaluation	Child	Place	Father's education	Mother's education	Father's occupation	Mother's occupation
College G. P. A.	.23*	.48**	.20	.22*	.13	.43**	.25*	-.07	-.19	.11	.29**	-.05	.04
H. S. G. P. A.		.45	.08	.03	.21*	.46**	.43**	.02	.01	.16	.05	.01	-.11
C. A. T.	.45**		.24*	.12	.28**	.73**	.43**	-.07	.27**	.22*	.37**	-.14	-.18
English	.08	.24*		.72**	.23*	.21*	.10	.07	-.06	.03	.15	.01	-.08
Science	.03	.12	.72**		.61**	.12	-.04	.09	-.12	.00	.15	-.01	-.03
Math	.21*	.28**	.49**	.61**		.27**	.21*	.02	-.13	.01	.11	.01	-.08
Counselors ratings	.46**	.73**	.46**	.12	.27**		.30**	.11	-.14	.30**	.49**	-.09	-.06
Teachers ratings	.43**	.43**	.43**	.12	.21*	.30**		-.16	-.07	.20	.09	-.10	-.20
Number of children in family	.02	-.07	.07	.05	-.02	.11	-.16		.24*	.02	.01	-.02	.39**
Place of child in family	.01	-.27*	.06	-.12	-.13	-.14	-.07	.24*		-.29**	-.24*	.16	.13
Father's education	.16	.22*	.03	-.09	.01	.30**	.20	.02	-.29**		.37**	-.54**	-.00
Mother's education	.05	.37**	.15	.15	.11	.49**	.09	.01	-.24*	.37**		.18	-.20
Father's occupation	.01	-.14	.01	-.01	.01	-.09	-.10	-.02	.16	-.54**	-.18		-.02
Mother's occupation	-.11	.18	-.18	-.03	-.06	.06	-.22*	.39**	.13	.00	-.20	-.02	

\*Significant at the .05 level of confidence

\*\*Significant at the .01 level of confidence

Table 2. Correlation of coefficients between 13 predictive variables and college grade point average, the criterion of successful scholarship recipients

Prediction Variable	College G. P. A.	Sig.
High school G. P. A.	.23	.05
C. A. T.	.48	.01
English	.20	None
Science	.22	.05
Math	.13	None
Counselors ratings	.43	.01
Teachers ratings	.25	.05
Number of children in family	.07	None
Place of child in family	-.19	None
Father's education	.11	None
Mother's education	.29	.01
Father's occupation	-.05	None
Mother's occupation	.04	None

were the high school grade point average, with a correlation of .23, and the science placement scores with a correlation of .22. Both of these correlations were significant at the 5 percent level.

The Significant Contributions Of Each Of The  
Variables To The Multiple Correlation

To determine the significant contributions of each of the variables to the multiple correlation of .36, which is significant at the 1 percent level, it was necessary to follow the program designated as the standard partial regression coefficient. In this procedure, the multiple correlation was determined with and without each of the variables. The contributions of each variable then is the standard predictive regression correlation. The data concerning the contributions of each of the 13 variables to the final multiple correlation are presented in Table 3. As shown, the larger the coefficient the more contribution it makes to the predictive multiple correlation. The data reveal that six variables contributed positively with the final multiple correlation. These were: science placement scores, California Achievement Tests, the mother's occupation, the counselor's evaluation, the teacher's evaluation, and the mother's education. Two variables, the number of children in the family and mathematics placement test scores, were found to contribute

Table 3. Contributions of each of the 13 predictive variables to the multiple-correlation

Predictive variables	Contributions	
Science	.34	
C. A. T.	.29	
Mother's occupation	.23	
Counselors ratings	.17	
Teachers ratings	.16	
Mother's education	.14	.12
Father's occupation	.02	.10
High school G. P. A.	.03	
English	-.05	
Place of child in family	-.07	
Father's education	-.09	
Number of children in family	-.14	
Math	-.23	
Total Multiple-correlation	.36**	

\*\*Significant at the .01 level of confidence

negatively to the multiple correlation. The total multiple correlation of .36 was significant at the 1 percent level.

## DISCUSSION

In general, the results of this study were similar to previous reports which have discussed various academic predictors. The first hypothesis was supported that there would be certain factors characteristic of successful scholarship recipients at the Bonneville High School. The three factors which correlated highest with college grade point average, as presented in Table II, were found to be: (a) the California Achievement Test, (b) the high school grade point average, and (c) the science placement scores, in that order.

This finding appears to validate most of the current practices of using these three variables for the selection of scholarship recipients. However, most of the writers on this subject had indicated that high school grades were the best predictors of college success. Contrary to the findings of other writers, this investigation found college placement science test scores more closely related to college success than the English scores of the same battery.

It was further hypothesized that there would be certain biographical or non-intellectual factors which would correlate significantly with college grades of high school scholarship recipients. The factors most

significant were: (a) the counselor's predictions, (b) the teacher's predictions, and (c) the mother's occupation. It was expected that significant correlations would obtain between even more non-intellectual factors and college grades; however, the results of this study revealed only the three variables as significant correlates.

The third hypothesis, which stated that high school grade point averages and college entrance examination scores would correlate most significantly with the success in college of the scholarship recipients, was confirmed only in part. The factors found most closely related to the criterion were those of the California Achievement Test scores and the counselor's evaluation. In this respect it is assumed that the counselors had a knowledge of the scholarship recipient's test scores and high school grades, which might account for the fact that the counselor's predictions correlated more significantly with the criterion.

The fourth hypothesis was supported by the results of this study, in that the high school tests and counselors ratings of scholarship recipients would correlate significantly with the scholarship holder's first year college grades.

A surprising number of intercorrelations, significant as both the 5 and 1 percent levels of significance, were found to exist among the variables studied. Factors



correlating significantly with the high school grade point average were California Achievement Test scores, the mathematics placement examination scores, counselor's and teacher's predictions, the place of the child in the family, the father's education, and the mother's education.

The college placement examination scores did not correlate with as many variables as one might have expected. The English placement examination scores correlated significantly with the California Achievement Test scores, the science placement examination scores, mathematics placement scores, and the counselor's predictions. Science, on the other hand, only correlated significantly with two other variables, the English placement scores, and the mathematics placement examination scores. Surprisingly, science was the only score in the college placement battery which correlated significantly with the college grade point average. Mathematics placement examination scores correlated significantly with high school grade point average, California Achievement Test scores, English placement scores, and the counselor's and teacher's predictions. The counselor's predictions of scholastic success of scholarship recipients was found to correlate significantly with high school grade point average, California Achievement Test scores, English placement scores, mathematics placement scores, a teacher's prediction of scholastic success, the father's education,

and the mother's education. These correlations were also higher than most of the correlations for other variables considered. The teacher's prediction of the success of high school scholarship recipients correlated significantly with the high school grade point average, California Achievement Test scores, English placement examination scores, the mathematics placement scores, and with the counselor's predictions.

As some would predict, the number of children in the family correlated significantly with only two factors. First, the place of the child in the family, and second, the mother's occupation. Surprisingly, the place of the child in the family correlated with four other variables. Three of these were negative correlations: the California Achievement Test scores, the father's education, and the mother's education. The place of the child in the family correlated significantly in the positive direction with the number of children in the family. The father's education correlated positively with the California Achievement Test scores, the counselor's predictions, the mother's education; and negatively with the place of the child in the family and also with the father's occupation.

It should be noted that a positive correlation does not indicate a cause and effect relationship, but rather one in which the increase of the score of one variable will be accompanied by a corresponding increase in the score of the second variable. For example, as California

Achievement Test score increased, there will be a corresponding increase in college grade point average.

It appears that the following implications may be drawn from this study: (a) Scholastic boards may continue to use the high school grade point average, California Achievement Tests, and college placement tests for the selection of scholarship recipients most likely to succeed in college. (b) It is unlikely that non-intellectual factors, with the exception of the mother's education, are usable for this purpose. (c) Rather than using one single test score or grade point average, the selection boards may profitably use a combination of the following: the California Achievement Test, high school grade point average, counselor's and teacher's evaluation, college placement science test scores, and the mother's education.

## SUMMARY AND CONCLUSIONS

One of the most difficult problems associated with the granting of scholarships is that of predicting which of the possible scholarship recipients will be most likely to succeed in college. The purpose of this study was to test the significance of the variables which appear to be correlates of the successful scholarship recipient. In this study, the term "successful recipient" referred to those students who were able to maintain, during their freshman year of college, a grade point average of 3.0, or a B average. The study involved a follow-up of 96 subjects drawn from Bonneville High School over a three year period. Data on each of the subjects were selected from colleges, scholarship selection boards, and high school cumulative records. The data were processed on IBM cards and correlations coefficient were determined by an IBM computer. Intercorrelations were computed among all of the predictive factors used in this study, as well as between each of the variables and the subjects' college freshman grades. A multiple correlation was also computed with the highest predictive variables. The mother's and father's occupations were quantified by use of the Dictionary of Occupational Titles, which is a department of Labor Publication.

The results of this study confirm the first hypothesis in that several correlates of the successful scholarship recipients were identified. The most significant of these were the California Achievement Test scores, the counselor's prediction of college grades, the mother's education, and high school grade point average. The mother's education was the only non-intellectual variable which yielded a significant correlation with the criterion, college grade point average. Other variables correlating with college grade point average were the high school grade point average and the science placement scores. These relationships were significant at the 5 percent level and of only some predictability. The third hypothesis must be accepted in as much as the highest correlation was in between the high school grade point average and college placement examination, as was hypothesized. The fourth hypothesis that teacher and counselor ratings of scholarship recipients would correlate significantly with the college success of the scholarship holder was confirmed, the teacher and counselor ratings yielding some of the highest correlations.

The multiple correlation of .36, which is significant at the 1 percent level, revealed that the best five predictors of the college grades of scholarship recipients were science placement scores, California Achievement Test scores, the mother's occupation, the counselor's and teacher's evaluations, and, to a lesser extent, the

mother's education. Possibly, therefore, the best variables for selecting scholarship recipients most likely to succeed in college would be intellectual variables. However, this study lends some encouragement to further experimentation with the predictive validity of non-intellectual or biographical variables.

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