A MATRIX OF SOCIAL AND PERSONALITY VARIABLES FOR THE PREDICTION OF SCHOOL ACHIEVEMENT

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ABSTRACT

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BY

Richard J. Gigliotti

This thesis is concerned with those personality and social variables which influence the level of achievement of high school students. The problem centers around the identifying of these variables and the development of a matrix of these variables to predict the level of achievement which can be expected when certain combinations of these variables exist together.

Two of the variables were the self concept of academic ability (SCAA) which a student has and, the importance to the student of his self identity student (ISIS). These were identified as the personality variables. Each of these variables was developed by means of a Guttman scale.

The other two variables were called the academic expectation level (AEL) and the degree of consensus. These were identified as the social variables. The AEL is a weighted sum of perceived parental, friends and teacher expectations. The degree of consensus is an index computed on the amount of consensus which existed about expectations among these three significant others. A high and low division was computed for each of these variables which resulted in sixteen possible

combinations, each of which was hypothesized to be related to a certain level of achievement.

Each of these variables alone was found to be significantly correlated with school achievement (G.P.A.) When combined into a matrix, it was found that significant chi-square values were achieved for combinations where either high or low achievement was hypothesized. However, for those combinations where moderate or moderate to low achievement was hypothesized, the results were for the most part in the desired direction, but non-significant.

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BY

Richard J. Gigliotti

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DEDICATION

This thesis is dedicated to all the unnamed, many forgetten, significants in my academic role set, both past and present, who have maintained high expectations. I hope I have upheld them.

ACKNOWLEDGMENTS

I would like to acknowledge Professor Wilbur B. Brookover who as a teacher, research director, and friend, first introduced me to problems of concern in this thesis. The patience which he has demonstrated during my work with him is of the first order.

I would also like to thank Dr. Denton Morrison and Professor William Faunce for their efforts in reading this thesis and making critical suggestions on it.

Finally I want to thank Carol C. Gigliotti who made my task a little easier both by typing the final draft of this thesis, and by being a positive source of encouragement.

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PROBLEM

The question of why students achieve differentially in school has intrigued researchers and theorists for many years. As with other problems in social science, this too cannot be solved by any monistic theory, although we oftentimes will hear it said that student A performs better in school than student B because he is "smarter" or in other words his I.Q. is higher. To rely on such a factor as the sole answer is of course absurd. I.Q. is singled out because it is the most popular explanation. Just what an intelligence test measures has come into serious question in recent years. At one time it was believed that they measured something close to a native capacity or potential. Today it is believed that they probably measure some particular kind of performance which is neither innate or constant. [1] This suggests the possibility that there might not be complete independence between one's I.Q. score and his achievement in school. The argument however, is against trying to present one explanation for differential achievement, and in this case there shouldn't be any question that it hasn't been accomplished to date, and may never be. In the case of I.Q., research has indeed shown

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1. Carl W. Backman and Paul F. Secord, A Social Psychological View of Education, p. 29.

that there is a high correlation between I.Q. score and grade achievement, but that this correlation declines significantly when other variables are partialled out.[2]

Once we have eliminated monistic theories, as we must of course do, we open up a Pandora's box of influencing factors. Attention has also been directed to the importance of social structural variables. The socio-economic status (SES) of the student's family has been explored to gain insight into the influencing factors of academic achievement. Implicit in such an attempt is the idea that SES reflects the value system of the family which is influenced by the type of entertainment and recreation participated in, the type of people with which they associate, the type of occupation engaged in, and so on. Other researchers have expanded this orientation and studied the general SES composition of the school, and even of the neighborhood.[3]

Research such as this has its recognized merits as has been shown by the recent attempts to eliminate neighborhood school districts which foster perpetuation of poor academic performance in low SES neighborhood schools.[4] The problem with

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2. Brookover, Wilbur B. et. al., Self Concept of Ability and School Achievement, III, p. 100, found that I.Q. score and GPA have a zero order correlation of 0.52 at the 11th grade level, but when one's self concept of academic ability score is partialled out, the correlation is reduced to 0.28.

3. For a recent example of this type of orientation see Robert E. Herriott and Nancy Hoyt St. John, Social Class and the Urban School.

4. For a discussion of this whole area see U.S. Commission on Civil Rights, Racial Isolation in Public Schools also United Stated District Court for District of Columbia Civil Action No. 82-86, 1967.

much of this research however is that it is not explanatory enough. There are too many exceptions to hypotheses such as "individuals who come from families which place a high value on academic achievement will be high academic achievers."

What we need to do is identify and isolate those social and personality variables which influence an individual in his role as a student and therefore influence his academic performance level.

The orientation of this thesis is that a consideration of "innate intelligence," "fixed learning ability," "intellectual capacity" or what have you, is irrelevant to successful explanation of academic achievement as it is formulated here. I am in accord with Brookover and Associates when they say that "although such fixed learning ability may exist we have no way of identifying the limits of most students learning potential at this time."[5] We do however know that extreme ranges of objective achievement occur within very narrow ranges of I.Q. scores. What are the causes of this pheonomenon? It is postulated that the interaction of the individual with his environment is a crucial area of exploration in attempting to arrive at a satisfactory explanation.

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5. Brookover, et. at., op. cit. p. 3

THEORY AND LITERATURE

The concepts of "significant other," "referent other," and "self" are crucial for this thesis. As initially formulated by G. H. Mead, the concept "self" refers to the idea that the individual experiences himself not directly but indirectly through interaction with significant others. In this sense the individual becomes an object which he can evaluate in the development of his "self," by taking into account the attitudes which he perceives others have of him. The importance of "self" as Mead formulates it is that it "is essentially a social structure, and it arises in social experiences."[6] A "self," or conception of self can only arise through interaction or "communication" with others.

Wilbur Brookover, in the attempt to utilize the concepts of "significant other" and "self" in research, has referred to a "significant other" as a real or imaginary person who influences the individual's beliefs about himself. In the context then of a particular role-set, those relevant individuals who are significant for ego, will play an important part in determining how ego conceives of his ability and performance in the particular role. Brookover notes that

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6. George Herbert Mead, Mind, Self and Society, p. 140.

ego will tend to behave in terms of what he perceives others expect of him and in terms of how he perceives they evaluate his behavior. The crucial variable here is ego's perception of the significant other's expectations and evaluations.

That the perception of expectations is important in influencing a student's performance, is illustrated by the results of an experiment conducted by Rosenthal and Jacobson.[7] They administered Flanigan's nonverbal intelligence test to all children in an elementary school and disguised it as a test designed to predict academic "blooming" or intellectual gain. There were six grades with three classrooms for each grade. In each of the the eighteen classes an average of twenty percent of the children were assigned to the experimental condition by means of a table of random numbers.

The names of these children were given to each teacher and they were told that the scores for these children on the "test for intellectual blooming" indicated that they would show unusual intellectual gains during the academic year. Eight months after the experimental conditions were instituted, all the children were retested with the same I.Q. test and a change score was computed for each child. The results showed that for the school as a whole, those children from whom the teachers had been led to expect great intellectual gain, showed a significantly greater gain in I.Q. score and school performance than did the control group. This was particularly evident in the very early years

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7. Robert Rosenthal and Lenore Jacobson, Psychological Reports Vol. 19., 1966.

where teacher attitudes about the ability of specific children were not yet well formed.

The variable of expectations needs further exploration by taking into consideration the differential expectations of significants as well as the varying influences of significant others on ego. In this respect then, it is also necessary to consider the degree of consensus about expectations in the role set. It seems logical to assume that the probability of ego achieving all A's in school would be higher if he perceived all of his significants as expecting him to perform at that level then if only a few of them did. In the former, the expectations of each significant are reinforced by the others in the role set. In the latter, there is a degree of dissensus which must be resolved in some way.

The personality variables which are considered to be important in influencing the level of academic achievement are the self concept which the individual has of his academic ability, and the importance which he attaches to his self identity as a student.

Brookover hypothesizes that for the expectations of others to be functional in a particular individual's behavior, they must be internalized and become part of ego's conception of himself. Thus, in Brookover's conception, ego's self concept of academic ability is an intervening variable which is a necessary but not sufficient condition for determining academic achievement. Ego's self concept of academic ability functions to limit the quality and quantity of learning attempted. He hypothesizes

that "to the extent that a society is increasingly characterized by students who have learned that they all ought to acquire high levels of academic skill, but that only a few of them are so capable, an increasing association may be observed between academic achievement and self concept of academic ability."[8]

The fourth variable of concern and the second personality variable is that of the importance of the identity, student, to ego. Faunce[9] proposes a tendency towards isomorphism between the personality structure and the social structure. He holds that in a society characterized by an immense number of vertically and horizontally stratified roles one will find personality structures which are similar. That is, an individual will have many roles, and many self identities. The self identities will be vertically ordered in terms of importance to the individual's self-esteem maintenance process. Therefore those identities which an individual regards as important will be highly conscious and will receive considerable investment of self. It will be those identities which are most important to the individual which will receive the most attention in terms of time and ego investment. Therefore, the individual who regards his self identity of a student as being important theoretically will consciously strive to perform at a level which will maintain a high self esteem. It is, however, entirely possible for an individual to attach a low importance to his self

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8. Brookover, et. al., p. 13

9. Lecture notes from a graduate course in "Social Structure and Personality" taught by Faunce in the Winter term of 1968 at Michigan State University.

identity student and still perform at a high level.

The fact that an individual may have a high self concept of academic ability, that is that he feels he has high ability to achieve academically, does not necessarily mean that he also regards his student identity as important. Theoretically, an individual may have the conception of himself as one with high academic ability but perform poorly because he does not regard his student identity as important and therefore does not invest time and effort.

DEFINITIONS, ASSUMPTIONS, AND OPERATIONALIZING OF CONCEPTS

The four variables which I have isolated as being the most important in influencing the level of academic achievement are:

1. The Academic Expectation Level defined as the combined and weighted expectation level which ego perceives his significant academic others hold for him.
2. The Degree of Consensus defined as the degree of consensus among the units of the role set regarding the perceived expectations for ego. The units are defined as each role occupant in the role set.
3. Self Concept of Academic Ability defined as ego's conception of the level at which he is able to perform academically.
4. Importance of the Self Identity Student defined as the relative degree of investment placed in the identity student, for self esteem maintenance.

The assumptions accepted for this thesis are:

1. That ego has no physiological or emotional problems which will inhibit his ability to learn under normal classroom procedures.
2. That the orientation or value in the American society is to high academic achievement. By this I mean that the signif-

cant others do not value low academic achievement. It does not imply that expectations may not be low.

3. That individuals strive to maintain a favorable self image.

The model originally intended for this thesis could not be strictly used because the data which are needed were not collected. Instead, an existing pool of data was used. This data approximates the data needed for the model, enough so that it could be used, however it is anticipated that distortions will occur.

Envisioned was a role set with ego as the central role occupant. In the role set there were to be six individuals whom ego would identify as being most significant for him in his role as a student. Instead, data is available for only three significants, parents, who are considered as one, friend and teacher. What was envisioned was a method of determining the relative degree of influence which each significant had on ego. This was to be done by forcing ego to make a judgement on several different dimensions. For each identified significant other it was intended to have ego answer several questions in the attempt to rank order and hypothetically weight the influence of each significant. In so doing it was hoped that we could approach the influence of the respective expectations on a weighted basis. That is, an influence factor for each significant was to be developed and this was to be used to weight the perceived expectations for that significant. By approaching the problem this way it was hoped that we could arrive at a more accurate index of the influence which

expectations have on grades. In addition we would be able to use one expectation score which considered the whole role set, instead of considering several different expectations.

As was mentioned earlier, the data which I had would not allow me to do this. Instead, I was able to take the expectation score for each of the three significants and weight it according to a crude indicator of influence which was construed out of research findings by Brookover. Parents' expectations were given a weight of 1, friends were given a weight of .10, and teachers were given a weight of .40. These combined, weighted, expectation scores yielded a single score which I call the Academic Expectation Level of ego's role set.

The second variable, that of the "degree of consensus " was derived from the first by calculating a consensus factor from the perceived grade expectations of each significant. This was done by calculating the mean of the three expectation scores and determining the standard deviation from that. The lower the standard deviation the higher the consensus.

The third variable, SCAA, was derived by the development of a Guttman Scale with eight items. These items are one through eight in the questionnaire. Then the total score of the eight items was used as the index.

The fourth variable, that of importance of self identity student (ISIS) was constructed similarly from existing items in the pool of data. These items are nine through fifteen and thirty four through thirty eight. For this variable, as for the degree of structuring, the items were not the same as those

which would have been constructed if original data were used, however they came close enough to the intended purpose to allow their use.

The data used in this study was part of an ongoing longitudinal study carried out by Brookover and his associates, of a high school population in a midwestern city. The study began while the students were in seventh grade and continued until two years after high school graduation. The data for this thesis was taken from the results of the tenth grade study. The selection of the tenth grade sample was done for several reasons. The first is that a high drop out rate should not yet have occured. This allowed for a wider range of academic achievement levels. Also considered is the fact that the tenth grade is located in the middle of the high school years, a point at which the student is sufficiently stabilized in the high school environment, yet not so far along that he is beginning to envision a life outside of the school environment. The N for this study is 1290 students, with females equaling 696 and males equaling 594.

HYPOTHESES

It is recognized that the four variables to be used may not be independent from one another. For example, the Academic Expectation Level in ego's role set probably influences both his self concept of academic ability (as Brookover has demonstrated) and also the importance to ego of his self identity student. But the degree of consensus probably also influences these two personality variables. But, influencing is not determining. There are many factors which combined in a matrix, determine these two personality variables. But an attempt to isolate all of them would be like trying to isolate all of those factors, which combined would determing the overall personality of an individual.

Brookover, utilizing the Meadian theory of symbolic interaction has shown in his research [10] that the following propositions are true:

Academic expectation level for ego → ego's perception of his academic ability

↑ego's perception of his AA→↑SCAA

↑Academic expectation level for ego→↑SCAA

↑SCAA→↑Academic achievement (GPA)

↑Academic expectation level for ego→↑Academic achievement (GPA)

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10. Op. Cit.

However by Brookover's own admission, that is not sufficient. There is a time factor involved from the point at which expectations change, are perceived, become part of the self concept and materialize in level of academic achievement. This can be diagramed as follows:

T_1 T_2 T_3 T_4

Expectations ------ perceptions ------ self concept --- behavior

Brookover's research has shown that a time lag of two or more years is not unusual before a significant association between even self concept and behavior occurs. This fact alone justifies using Academic Expectation Level and SCAA as separate variables. Theoretically then SCAA should be more highly associated with school achievement (GPA) than is the Academic Expectation Level, Thus:

Hypothesis 1: The self concept of academic ability (SCAA) of a student is positively associated with his level of school achievement. (GPA)

Hypothesis 2: The Academic Expectation Level of a student's academic significant others role set is positively associated with his level of school achievement. (GPA)

The other two variables, i.e. degree of consensus and importance of self identity student have never been empirically tested. That they will play a significant part in accounting for much of the remaining variance is theoretically implied but not empirically proven. Thus:

Hypothesis 3: The importance to a student of his self identity as a student is positively associated with his level of school achievement. (GPA)

The fourth variable, the degree of consensus cannot by itself be associated with school achievement for its referent is the consensus which surrounds the expectations of the units in the role set. It must be considered in conjunction with the Academic Expectation Level. Theoretically an individual's school achievement would be high if the Academic Expectation Level was high and there was a high consensus about this. Similarly an individual's school achievement would be low if the Academic Expectation Level was low and there was a high consensus about this. The other possible combinations would yield varying levels of achievement.

If these two variables were put into a matrix with the other two variables the result would be sixteen possible combinations, each of which would be associated with a level of school achievement. The matrix would be as follows, with the dependent variable being grade point average. (see Table 1 on the next page.)

Such a formulation would yield the following hypotheses:

Hypothesis 4: A high SCAA plus a high ISIS plus a high AEL with a high degree of consensus is positively associated with a high GPA.

Hypothesis 5: A high SCAA plus a high ISIS plus a high AEL with a low degree of consensus is positively associated with a high GPA.

In a situation such as this it would not seem unlikely that there are probably one or two significants who exert considerably more influence on ego than the others in the role set. These significants would hold very high expectations.

TABLE 1
Hypothetical table for Prediction of Academic Achievement Level (G.P.A.)

		HI		LO		SCAA
↓ISIS	AEL↓	HI	LO	HI	LO	Consensus
HI	HI	HI	HI	MOD	MOD	
	LO	MOD	MOD	LO	MOD-LO	
LO	HI	HI-MOD	MOD	MOD-LO	LO	
	LO	MOD-LO	MOD-LO	LO	LO	

Hypothesis 6: A low SCAA plus a high ISIS plus a high AEL with a high degree of consensus is positively associated with a moderate GPA.

In this situation ego has probably experienced consistent and relatively defined poor grades in school for some reason which cannot be explained by the theory (poor eyesight? personality quirks?)

Hypothesis 7: A low SCAA plus a high ISIS plus a high AEL with a low degree of consensus is positively associated with a moderate GPA.

Here ego is probably expected by some important significant to perform at a high level but there is not consensus about this.

He feels that being a good student is important but is giving only a limited effort because of the dissensus existing in the role set.

Hypothesis 8: A high SCAA plus a high ISIS plus a low AEL with a high degree of consensus is positively associated with a moderate GPA.

Such a situation, if it exists, should not occur very often. With a low Academic Expectation Level, ego should have or be tending towards a low SCAA. However, a high degree of consensus about low expectations theoretically would not allow a high SCAA or high ISIS unless there are other significants who haven't been included in the role set, and hold high expectations. The more likely situation is that ego is at the beginning of a significant change to a lower SCAA and ISIS.

Hypothesis 9: A high SCAA plus a high ISIS plus a low AEL with a low degree of consensus is positively associated with a moderate GPA.

With a low AEL and a high SCAA it would seem likely that either a change has occurred in the attitudes of ego's significant others or the significants have changed. However, with a low degree of consensus there is considerable dissensus about the expectations for ego. It is likely that the perceived parental expectations have changed from high to low with the other significants maintaining reasonably high expectations. There should be a tendency toward the lowering of SCAA and ISIS.

Hypothesis 10: A low SCAA plus a high ISIS plus a low AEL with a high degree of consensus is positively associated with a low

GPA.

A situation such as this where the expectations are low and the consensus about them high, coupled with a low SCAA would outweigh the fact that ego places a high investment in his self identity as a student. His role-set gives him negative support for high achievement.

Hypothesis 11: A low SCAA plus a high ISIS plus a low AEL with a low degree of consensus is positively associated with a moderate to low GPA.

Here we have a situation where some significant (probably friend and/or teacher) regards the student role as important and feels that ego can achieve highly. Ego regards his student role as important but because of his uncertainty about his ability and the dissensus in his role set, he performs at a moderate to low level.

Hypothesis 12: A high SCAA plus a low ISIS plus a high AEL with a high degree of consensus is positively associated with a high to moderate GPA.

Here is a situation where ego probably has other identities which are more important to him for self esteem maintenance than the identity student. He feels that he has the ability to perform well but is probably investing less time and effort than he would if the identity student was very important to him.

Hypothesis 13: A high SCAA plus a low ISIS plus a high AEL with a low degree of consensus is positively associated with a moderate GPA.

The combined expectations for ego are marginally high with

some significant (s) having very high expectations and some low, yielding much dissensus. It is probable that ego's parents have the high expectations and the other significants have low expectations.

Hypothesis 14: A low SCAA plus a low ISIS plus a high AEL with a high degree of consensus is positively associated with a moderate to low GPA.

A situation such as this would not be very likely unless ego regards the student role as so very unimportant that the significants in his role set are unimportant in the rest of his life space.

Hypothesis 15: A low SCAA plus a low ISIS plus a high AEL with a low degree of consensus is positively associated with a low GPA.

The high expectations are probably marginal as indicated by the low degree of consensus which exists in the role set. With a situation such as this, performance should be slightly less than that in Hypothesis 14.

Hypothesis 16: A high SCAA plus a low ISIS plus a low AEL with a high degree of consensus is positively associated with a moderate to low GPA.

A situation such as this should not occur too often. Ego does not place much importance in his student identity, and this is reinforced by high consensus in his role set regarding low expectations. Yet ego still feels that he has high academic ability. This is an unstable situation in which ego's self concept should be decreasing.

Hypothesis 18: A low SCAA plus a low ISIS plus a low AEL with a high degree of consensus is positively associated with a low GPA.

This should be one of the stable and frequent situations. All of the variables are consonant and the conditions are perfect for low achievement.

Hypothesis 19: A low SCAA plus a low ISIS plus a low AEL with a low degree of consensus is positively associated with low GPA.

This situation is essentially the same as that for Hypothesis 18 except that the consensus for low expectations is low. Because the personality variables are low however, this should still result in low achievement.

ANALYSIS

The entire analysis for all nineteen hypotheses was carried out separately for males and females. Previous research of this nature has shown that quite different results often do occur on the same variables for males and females.

Hypothesis one stated that "the self concept of academic ability of a student is positively associated with his level of school achievement." As Table 2 shows, the correlation coefficients for both males and females are very high and significant beyond the 0.001 level. Brookover reports similar results [11] in the sample which he used. He found correlations of 0.62 for the males with an N of approximately 255, and 0.53 for the females with an N of 307. For both males and females the samples which I used were over twice as large as the ones which Brookover used, and yet it's interesting to note the results which he initially obtained have been fairly well maintained in this retest.

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11. Ibid. p. 88

TABLE 2

Pearson Product Moment Correlation
between SCAA 10th grade and GPA 10th grade

	Males N=594	Females N=696
r	0.59	0.58
	t=17.78	t=18.76

Both sig. beyond 0.001

Hypothesis two states that "the AEL of a student's academic significant others role set is positively associated with his level of school achievement." Table three shows that this is indeed the case for both males and females as expected.

TABLE 3

Pearson Product Moment Correlation
between AEL 10th grade and GPA 10th grade

	Males N=594	Females N=696
r	0.55	0.58
	t=16.02	t=18.76

Both sig. beyond 0.001

The variable AEL you will remember, is a composite of the weighted expectations of ego's parents, friends and teachers. Correlations were run between the mean expectations of each of the three and GPA. As Table 4 shows, we were able to achieve

a greater positive association between expectations and GPA when the variable AEL was developed then when the unweighted expectations of each significant were considered separately. The difference, though not great, is in the direction hoped for. If we keep in mind that the variable AEL had to be developed in a way which I feel does not allow for its best predictive value, then the possibility that a much greater association will result, is likely, when it is formulated the way it was originally intended to be.

TABLE 4

Pearson Product Moment Correlations between $\bar{x}$ expectations and GPA 10th grade

	Males N=594	Females N=696
Parents	0.53	0.56
Friends	0.42	0.48
Teachers	0.51	0.54

Hypothesis three tested whether "the importance to a student of his self identity as a student is positively associated with his level of school achievement." Table 5 shows that this is indeed the case although the association is not as great as that of SCAA or AEL.

TABLE 5

Pearson Product Moment Correlation
between ISIS 10th grade and GPA 10th grade

	Males N=594	Females N=696
r	0.30	0.30
	t=7.65	t-8.28

Both sig. beyond 0.001

The main attempt of this thesis is of course to find out what type of association and potential prediction exists between different combinations of the four independent variables and grade point average. High and low for the independent variables was arrived at separately for the male and female samples by taking the top half of all the scores for each and calling that high and taking the bottom half and calling that low. Thus, for each of the variables we had a different range for males and females.

Similarly, the dependent variable of GPA was divided into three sections for males and females, with the lower third corresponding to low GPA, and the top third corresponding to high GPA. The range for all the variables for both sexes is shown in Table 6.

TABLE 6

Range of scores for each variable in both sexes, including n's

		Males N=594		Females N=696	
		Range	n	Range	n
SCAA	High	28-40	297	28-40	348
	Low	8-28	297	8-28	348
ISIS	High	32-43	297	31-43	348
	Low	8-32	297	8-31	348
AEL	High	44.80+	297	43.60+	348
	Low	44.80-	297	43.60-	348
Cons	High	.00-.37	297	.00-.35	348
	Low	.37-1.60	297	.35-1.48	348
GPA	High	2.25-4.00	198	2.75-4.00	232
	Mod.	1.50-2.25	198	2.00-2.75	232
	Low	0.25-1.50	198	0.25-2.00	232

As we can see, for the cutting point on the four independent variables, there is not a great deal of difference. However, for the cutting points for the dependent variable of GPA there is a considerable amount of variance. The female sample shows that for moderate and high achievement the base point is 0.50 higher than it is for the males.

The question arose as to how one determines what constitutes high, moderate and low achievement. For me to determine it, or anyone else would of course introduce considerable bias. The other, and probably more important consideration is that of relative definition. The assumption which was necessary to work on was that achievement levels are defined relatively and informally by the populations of different schools. That is, high achievement in School A may be regarded as a 3.00 or better, whereas in School B it might be 2.50 or better. To circumvent this problem, I divided the samples into three equivalent groups for males and the same for females, by taking the highest third, middle third and bottom third in GPA. The result is a relatively defined situation of high, moderate and low achievement, not only on the basis of the sample, but also in terms of sex.

Because each of the three categories of the dependent variables (GPA) had exactly the same n, I was able to use this as a basis of analysis. That is, if there was no association then theoretically each cell should have one-third high, one-third moderate, and one-third low achieving students. Using this fact, I was able to establish an expected frequency by taking the n which occured in each cell, dividing it into

three and using each third as the expected frequency for high, moderate, and low achievement.

The observed frequency then, was what actually occurred in the three categories of the dependent variable. It was then possible to use a chi-square statistic on a 1:N table to test for association. Most of the hypotheses seek an association between the four independent variables and one of the three categories of the dependent variable. When this occurred, the remaining two categories were combined for analysis and assumed an expected frequency of two-thirds n. In some of the hypotheses the dependent variable was two of the three categories and similarly the expected frequency was two-thirds of n and the observed frequency was combined for the two.

TABLE 7

X^2 test for Association Between High SCAA plus High ISIS plus High AEL with high consensus and GPA

	Males		Females	
GPA	OBS.	EXP.	OBS.	EXP.
High	50	29	56	31
Mod-Lo	37	58	36	61
	n=87 X^2 = 22.81 d.f. = 1 Sig. beyond 0.001		n=92 X^2 = 30.41 d.f. = 1 Sig. beyond 0.001	

Table 7 shows the results for hypothesis four which stated that a high GPA would exist when these four independent variables occur together. As expected, a high degree of positive association exists for both males and females with the female sample showing a greater positive association than the male sample.

Hypothesis five also predicted a high GPA. As Table 8 shows, the hypothesis was well supported. The only surprise which exists is that the chi-square is greater here for the men than it was in Table 7. Theoretically this should not have occurred because unlike the previous situation where high expectations were supported by a high consensus, here they were supported by a low consensus. Therefore, the association should have been slightly less, as it is for the females.

TABLE 8

X^2 test for association between high SCAA plus high ISIS plus high AEL with a low consensus and GPA

	Males		Females	
GPA	OBS.	EXP.	OBS.	EXP.
High	52	27	60	34
Mod. + Lo	30	55	43	69
	$n=82$ $X^2 = 34.51$ d.f. = 1 Sig. beyond 0.001		$n=103$ $X^2 = 29.68$ d.f. = 1 Sig. beyond 0.001	

Hypothesis six stated that a moderate GPA would result when a matrix of low SCAA, high ISIS, high AEL, and high degree of consensus existed. Table 9 shows that although the results are in the positive direction, they are not significant at the .05 level which serves as a base level of significance for all the hypotheses.

TABLE 9

X^2 test for association between low SCAA plus high ISIS plus high AEL with a high consensus and GPA

	Males		Females	
GPA	OBS.	EXP.	OBS.	EXP.
Mod.	7	5	9	6
High + Lo	8	10	10	13
	n=15 X^2 = 1.20 d.f. = 1 n.s.		n=19 X^2 = 2.19 d.f. = 1 n.s.	

The results for hypothesis seven which predicted that a moderate GPA would result, again are not significant. Again, the results are in the positive direction, slightly for the males, more so for the females. Lower chi-square values should be expected here than those reported in Table 9 for hypothesis six. This is expected for the reason that in this present case the high expectations are supported by low consensus. As we see, the chi-square value is indeed lower for the males but higher for the females

TABLE 10

X^2 test for association between low SCAA plus high ISIS plus high AEL with a low consensus and GPA

	Males		Females	
GPA	OBS.	EXP.	OBS.	EXP.
Mod.	7	6	8	5
High+ Lo	11	12	6	9
	$n=18$ $X^2 = 0.25$ d.f. = 1 n.s.		$n=14$ $X^2 = 2.8$ d.f. = 1 n.s.	

Hypothesis eight predicts a moderate GPA given the situation stipulated. The results in Table 11 show this to be the case for both the male and female sample. It's interesting to note however that the chi-square value for the males is considerably higher. Because the samples are not very large however, it probably is not safe to speculate as to the reasons for this.

TABLE 11

X^2 test for association between high SCAA plus high ISIS plus low AEL with high consensus and GPA

	Males		Females	
GPA	OBS.	EXP.	OBS.	EXP.
Mod.	15	6	10	6
High + Lo	4	13	7	11
	n=19 X^2 = 19.73 d.f. = 1 sig. at 0.001		n=17 X^2 = 4.12 d.f. = 1 sig. at 0.05	

The situation in hypothesis nine is the same as that in eight except that now there is dissensus as to the high expectations for ego. Therefore, while moderate achievement was expected it was anticipated that the positive association with moderate achievement would not be as high as in eight. This is indeed the case as Table 12 shows. However, as one can see by the very low chi-square values and the non-significance resulting, the positive association is much lower than anticipated for the females and in the negative direction for the males.

TABLE 12

X^2 test for association between high SCAA plus high ISIS plus low AEL with low consensus and GPA

	Males		Females	
GPA	OBS.	EXP.	OBS.	EXP.
Mod.	5	6	6	5
High+Lo	12	11	8	9
	n=17 X^2 = 0.26 d.f. = 1 n.s.		n=14 X^2 = 0.31 d.f. = 1 n.s.	

The situation in hypothesis 10 calls for low achievement. Table 13 shows that the association for both samples is in the hypothesized direction with, however, only the male sample having a significant chi-square value.

TABLE 13

X^2 test for association between low SCAA plus high ISIS plus low AEL with high consensus and GPA

	Males		Females	
GPA	OBS.	EXP	OBS.	EXP.
Low	19	11	19	16
High+Mod	13	21	29	32
	n=32 X^2 = 8.87 d.f. = 1 sig. at 0.05		n=48 X^2 = 0.84 d.f. = 1 n.s.	

The next situation predicts a moderate to low achievement given a situation where a lack of consensus exists about low expectations. Here again the hypothesis (11) was upheld although the results were non significant for the male sample.

TABLE 14

X^2 test for association between low SCAA plus high ISIS plus low AEL with low consensus and GPA

	Male		Females	
GPA	OBS.	EXP.	OBS.	EXP.
Mod-Lo	21	18	36	27
High	6	9	5	14
	n=27 X^2 = 1.50 d.f. = 1 n.s.7		n=41 X^2 = 8.79 d.f. = 1 sig. at 0.05	

Hypothesis twelve calls for a high to moderate achievement level. For both samples the chi-square values are significant and the hypothesis can be safely accepted as Table 15 shows.

TABLE 15

X^2 test for association between high SCAA plus low ISIS plus high AEL with high consensus and GPA

	Males		Females	
GPA	OBS.	EXP.	OBS.	EXP.
High-Mod.	24	19	27	19
Low	4	9	2	10
	n=28 X^2 = 4.09 d.f. = 1 sig. at 0.05		n=29 X^2 = 9.77 d.f. = 1 sig. at 0.05	

Hypothesis thirteen predicted that a moderate GPA would exist given the combination of independent variables set up. Table 16 shows that the hypothesis cannot be accepted on the basis that the null hypothesis of no difference was upheld. As can be seen, the observed and expected frequencies for the female sample were the same, and almost the same for the males.

TABLE 16

X^2 test for association between high SCAA plus low ISIS plus high AEL with low consensus and GPA

	Males		Females	
GPA	OBS.	EXP.	OBS.	EXP.
Mod.	13	12	21	21
High+Lo	22	23	41	41
	n=35 X^2 = 0.13 d.f. = 1 n.s.		n=62 X^2 = 0.00 d.f. = 1 n.s.	

The same situations exist for hypotheses fourteen and fifteen. In both cases the hypotheses were not upheld. The results for hypothesis fourteen which predicted a mod-low GPA are reported in Table 17, and show a chi-square value of 0.00 for the females and a very low one for the males. Similarly, for hypothesis fifteen reported in Table 18, the observed and expected frequencies for the males are the same and the females show a negative association between the independent variables and the predicted low GPA. This negative association is very low however, and non-signficant.

TABLE 17

X^2 test for association between low SCAA plus low ISIS plus high AEL with high consensus and GPA

	Males		Females	
GPA	OBS.	EXP.	OBS.	EXP.
Mod.+Lo	11	10	6	6
High	4	5	3	3
	$n=15$ $X^2 = 0.30$ d.f. = 1 n.s.		$n=9$ $X^2 = 0.00$ d.f. = 1 n.s.	

TABLE 18

X^2 test for association between low SCAA plus low ISIS plus high AEL with low consensus and GPA

	Males		Females	
GPA	OBS.	EXP.	OBS.	EXP.
Low	6	6	5	7
High+Mod.	11	11	15	13
	n=17 X^2 = 0.00 d.f. = 1 n.s.		n = 20 X^2 = 0.88 d.f. = 1 n.s.	

Hypothesis sixteen asks for a moderate to low GPA given the situation existing. Table 19 shows that although the chi-square values for both the male and female samples are in the hypothesized direction, the results are non significant and therefore the hypothesis will have to be rejected.

TABLE 19

X^2 test for association between high SCAA plus low ISIS plus low AEL with a high consensus and GPA

	Males		Females	
GPA	OBS.	EXP.	OBS.	EXP.
Mod.-Low	10	9	14	12
High	4	5	4	6
	n=14 X^2 = 0.31 d.f. = 1 n.s.		n=18 X^2 = 0.99 d.f. = 1 n.s.	

Hypothesis seventeen predicts a moderate to low GPA as does hypothesis sixteen. The only difference is that in this present situation the low expectations are not supported by high consensus as in hypothesis sixteen. Therefore, the probability of positive association should be somewhat lower. This is indeed the case for the females where we find a change from a positive association with a X^2 value of 0.99 in hypothesis sixteen to a negative association with a chi-square value of 3.25 in hypothesis seventeen. Even though this expectation was upheld, nevertheless the hypothesis has to be rejected on the basis of a negative association with a non-significant chi-square for the females. The results for the male sample were, as can be seen in Table 20, in the expected direction, but non-significant.

TABLE 20

X^2 test for association between high SCAA plus low ISIS plus low AEL with a low consensus and GPA

	Males		Females	
GPA	OBS.	EXP.	OBS.	EXP.
Mod.-Low	11	10	6	9
High	4	5	7	4
	n=15 X^2 = 0.30 d.f. = 1 n.s.		n=13 X^2 = 3.25 d.f. = 1 n.s.	

Hypothesis 15 and 16, both of which predict low achievement, have both been upheld with very high chi-square values

and very high levels of significance in both the male and female samples. Tables 21 and 22 report the results for both of these hypotheses respectively. As anticipated, the situations which these hypotheses describe, have a large number of occurrences.

TABLE 21

X^2 test for association between low SCAA plus low ISIS plus low AEL with a high consensus and GPA

	Males		Females	
GPA	OBS.	EXP.	OBS.	EXP.
Low	42	29	66	39
High+Mod.	45	58	50	77
	n=87 X^2 = 8.74 d.f. = 1 sig. at 0.005		n=116 X^2 = 28.16 d.f. = 1 sig. at 0.001	

TABLE 22

X^2 test for association between low SCAA plus low ISIS plus low AEL with low consensus and GPA

	Males		Females	
GPA	OBS.	EXP.	OBS.	EXP.
Low	52	29	50	27
High+Mod.	34	57	31	54
	n=86 X^2 = 27.52 d.f. = 1 sig. at 0.001		n=81 X^2 = 29.39 d.f. = 1 sig. at 0.001	

DISCUSSION OF RESULTS AND CONCLUSION

A discussion of the results of the analysis was reserved until this section so that an overall picture of the results could be obtained. Questions arose such as what hypotheses were upheld for both males and females and what hypotheses were rejected for both males and females. More interesting however is the question of whether any partial combinations of the independent variables were consistently found to be associated with success or failure of hypotheses. Table 22 shows those hypotheses which were accepted for both the male and female sample. Acceptance of the hypotheses was at the minimum of a significance level of 0.05. The hypotheses are arranged from highest chi-square value to the lowest chi-square value.

Similarly Table 23 shows those hypotheses which were rejected for the male and female samples. Here the hypotheses are also arranged in descending order from the highest non-significant chi-square to the lowest non-significant chi-square value.

There are two very striking things to note in contrasting these tables. The first is that for both the male and female samples, those hypotheses whose results were significant had the most combinations of independent variables which might

TABLE 23

Hypotheses accepted, with n's, four independent variables and GPA_2 predicted - ordered from highest X^2 value to lowest

Males

	N	SCAA	ISIS	AEL	°Con.	GPA PRED.
Hyp. 5:	82	High	High	High	Low	High
Hyp. 19:	86	Low	Low	Low	Low	Low
Hyp. 4:	87	High	High	High	High	High
Hyp. 8:	19	High	High	Low	High	Mod.
Hyp. 10:	32	Low	High	Low	High	Low
Hyp. 18:	87	Low	Low	Low	High	Low
Hyp. 12:	28	High	Low	High	High	High-Mod.

Females

	N	SCAA	ISIS	AEL	°Con.	GPA PRED.
Hyp. 4:	92	High	High	High	High	High
Hyp. 5:	103	High	High	High	Low	High
Hyp. 19:	81	Low	Low	Low	Low	Low
Hyp. 18:	116	Low	Low	Low	High	Low
Hyp. 12:	29	High	Low	High	High	High-Mod.
Hyp. 11:	41	Low	High	Low	Low	Mod-Low
Hyp. 8:	17	High	High	Low	High	Mod

Hypotheses rejected, with n's, four independent variables and GPA predicted - ordered from highest X^2 value to lowest

Males

	N	SCAA	ISIS	AEL	°Con.	GPA PRED.
Hyp. 11:	27	Low	High	Low	Low	Mod.-Low
Hyp. 6:	15	Low	High	High	High	Mod.
Hyp. 16:	14	High	Low	Low	High	Mod.- Low
Hyp. 14:	15	Low	Low	High	High	Mod.- Low
Hyp. 17:	15	High	Low	Low	Low	Mod.- Low
Hyp. 7:	18	Low	High	High	Low	Mod.
Hyp. 13:	35	High	Low	High	Low	Mod.
Hyp. 15:	17	Low	Low	High	Low	Low
Hyp. 9:	17	High	High	Low	Low	Mod.

Females

	N	SCAA	ISIS	AEL	°Con.	GPA PRED.
Hyp. 7:	14	Low	High	High	Low	Mod.
Hyp. 6:	19	Low	High	High	High	Mod.
Hyp. 16:	18	High	Low	Low	High	Mod.- Low
Hyp. 10:	48	Low	High	Low	High	Low
Hyp. 9:	14	High	High	Low	Low	Mod.
Hyp. 13:	62	High	Low	High	Low	Mod.
Hyp. 14:	9	Low	Low	High	High	Mod.- Low
Hyp. 15:	20	Low	Low	High	Low	Low
Hyp. 17:	13	High	Low	Low	Low	Mod.- Low

TABLE 24

be called "theoretically congruent." That is, the combinations of independent variables in these hypotheses would seem to belong together more logically than the ones which were rejected. It is also interesting to note that the samples for these hypotheses were for the most part among the largest. The exceptions to this rule were hypotheses eight for the males and eight for the females. These as you will note, had relatively lower n's and were not as theoretically congruent as the others.

Similarly, if we look at Table 23 for those hypotheses which were rejected we will note that there is little theoretical congruence and that the n's are comparatively small, with a few exceptions in the samples of both male and female.

The other important result to note is that for those hypotheses which were not upheld, the GPA predictions were all either moderate or moderate to low. The exceptions were hypothesis 15 for the males and hypotheses 10 and 15 for the females. Similarly, the hypotheses which were held predicted either high or low achievement with the exceptions being hypotheses 8 and 12 for the males and 8, 11, and 12 for the females.

These hypotheses which called for high or low GPA are more logical and are also the polar extremes in four out of the seven situations.

The general conclusion which must be drawn is that although we obtained results which were in the hypothesized direction for practically all those where a moderate or moderate to low GPA was called for, the lack of logical consistency among the combinations of the four independent variables weakened the influence which each exerted upon the student, and

allowed for the influence of other variables to be exerted, in what at present appears to be a non-predictable fashion.

The attempt of this thesis which was to find a formula by which school achievement could be predicted was partially successful. I don't feel however that the attempt to improve this formula should end with this present research. In the first place, the operationalizing of the concepts of ISIS, degree of structuring, and degree of structural integration can be improved upon as mentioned earlier. A second area of explanation is that of determining what other variables are operating in those cells which predict moderate achievement, to counteract the influence of the four independent variables used here.

QUESTIONNAIRE

Bureau of Educational Research, Michigan State University

High School Study

Introduction:

The Bureau of Educational Research at Michigan State University has been doing a study to find out what high school students think about themselves, their school work and their future plans. Many of you have helped in one part of the study. The information that you gave us has been very useful and we thank you for your help. Now we would like you to help in this part of the study by answering the following questions as honestly as you can.

Please read carefully the directions on each part of the questionnaire before you answer. If you have any questions, raise your hand and someone will help you.

The answers you give will not be shown to your teachers or anyone else, and will in no way affect your grades. Noone will see the answers you give except the research staff.

YOUR HELP IN THIS STUDY IS GREATLY APPRECIATED!

PLEASE PRINT THE FOLLOWING INFORMATION

Name: _____, _____, _____

Birthdate: _____, _____, _____ Sex: M____ F____

Name of Present School : _____

What School Did you Attend Last Year? _____

Circle the letter in front of the statement which best answers each question.

1. How do you rate yourself in school ability compared with your close friends?

   A. I am the best.
   B. I am above average.
   C. I am average.
   D. I am below average
   E. I am the poorest.

2. How do you rate yourself in school ability compared with those in your class at school?

   A. I am among the best.
   B. I am above average.
   C. I am average.
   D. I am below average.
   E. I am among the poorest.

3. Where do you think you would rank in your high school graduating class?

   A. Among the best.
   B. Above average.
   C. Average.
   D. Below average.
   E. Among the poorest

4. Do you think you have the ability to complete college?

   A. Yes, definitely.
   B. Yes, probably.
   C. Not sure either way.
   D. Probably not.
   E. No.

5. Where do you think you would rank in your class in college?

   A. Among the best.
   B. Above average.
   C. Average.
   D. Below average.
   E. Among the poorest.

6. In order to become a doctor, lawyer, or university professor, work beyond four years of college is necessary. How likely do you think it is that you could complete such advanced work?

   A. Very likely.
   B. Somewhat likely.
   C. Not sure either way.
   D. Unlikely.
   E. Most unlikely.

7. Forget for a moment how others grade your work. In your own opinion how good do you think your work is?

   A. My work is excellent.
   B. My work is good.
   C. My work is average.
   D. My work is below average.
   E. My work is much below average.

8. What kind of grades do you think you are capable of getting?

   A. Mostly A's.
   B. Mostly B's.
   C. Mostly C's.
   D. Mostly D's.
   E. Mostly E's.

9. How important to you are the grades you get in school?

   A. Very important.
   B. Important.
   C. Not particularly important.
   D. Grades don't matter to me at all.

10. How important is it to you to be high in your class in grades?

   A. Very important.
   B. Important
   C. Not particularly important.
   D. Doesn't matter to me at all.

11. How do you feel if you don't do as well in school as you know you can?

   A. Feel very badly.
   B. Feel badly.
   C. Don't feel particularly badly.
   D. Doesn't bother me at all.

12. How important is it to you to do better than others in school?

   A. Very important.
   B. Important.
   C. Not particularly important.
   D. Doesn't matter to me at all.

13. Which statement best describes you?

   A. I like to get better grades than everyone else.
   B. I like to get better grades than almost everyone else.
   C. I like to get about the same grades as everyone else.
   D. I don't care about any particular grades.

14. In your school work do you try to do better than others?

   A. All of the time.
   B. Most of the time.
   C. Occassionally.
   D. Never.

15. How important to you are good grades compared with other aspects of school?

A. Good grades are the most important thing.
B. Good grades are among the important things in school.
C. Some other things in school are more important.
D. Good grades don't matter to me at all.

Please answer the following questions as you think your PARENTS would answer them. If you are not living with your parents answer for the family with whom you are living.

Circle the letter in front of the statement that best answers Each Question.

16. How do you think your parents would rate your school ability compared with other students your age?

A. Among the best.
B. Above average.
C. Average.
D. Below average.
E. Among the poorest.

17. Where do you think your parents would say you would rank in your high school graduating class?

A. Among the best.
B. Above average.
C. Average.
D. Below average.
E. Among the poorest.

18. Do you think that your parents would say you have the ability to complete college?

A. Yes, definitely.
B. Yes, probably.
C. Not sure either way.
D. Probably not.
E. Definitely not.

19. In order to become a doctor, lawyer, or university professor, work beyond four years of college is necessary. How likely do you think your parents would say it is that you could complete such advanced work?

A. Very likely.
B. Somewhat likely.
C. Not sure either way.
D. Somewhat unlikely.
E. Very unlikely.

20. What kind of grades do you think your parents would say you are capable of getting in general?

A. Mostly A's.
B. Mostly B's.
C. Mostly C's.
D. Mostly D's.
E. Mostly E's.

21. How far do you think your parents expect you to go in school?

A. They expect me to quit as soon as I can.
B. They expect me to continue in high school for a while.
C. They expect me to graduate from high school.
D. They expect me to go to secretarial or trade school.
E. They expect me to go to college for a while.
F. They expect me to graduate from college.
G. They expect me to do graduate work beyond college.

22. For your parents to be most pleased with you, what kind of grades should you get in school in general?

A. Mostly A's.
B. A's and B's.
C. Mostly B's.
D. B's and C's.
E. Mostly C's.
F. C's and D's.
G. Mostly D's.
H. D's and E's.
I. Mostly E's.
J. My grades do not make any difference to my parents.

Please answer the following questions as you think your closest friend would answer them.

Circle the letter in front of the statement that best answers each question.

23. How do you think your closest friend would rate your school ability compared with other students your age?

A. Among the best.
B. Above average.
C. Average.
D. Below average.
E. Among the poorest.

24. Where do you think your closest friend would say you would rank in your high school graduating class?

A. Among the best.
B. Above average.
C. Average.
D. Below average.
E. Among the poorest.

25. In order to become a doctor, lawyer, or university professor, work beyond four years of college is necessary. How likely do you think your closest friend would say it is that you could complete such advanced work?

A. Very likely.
B. Somewhat likely.
C. Not sure either way.
D. Somewhat unlikely.
E. Very unlikely.

26. What kind of grades do you think your closest friend would say you are capable of getting in general?

A. Mostly A's.
B. Mostly B's.
C. Mostly C's.
D. Mostly D's.
E. Mostly E's.

27. How far do you think your closest friend expects you to go in school?

A. He expects me to quit as soon as I can.
B. He expects me to continue in high school for a while.
C. He expects me to graduate from high school.
D. He expects me to go to secretarial or trade school.
E. He expects me to go to college for a while.
F. He expects me to graduate from college.
G. He expects me to do graduate work beyond college.

28. For your closest friend to be most pleased with you, what kind of grades should you get in general?

A. Mostly A's.
B. A's and B's.
C. Mostly B's.
D. B's and C's.
E. Mostly C's.
F. C's and D's.
G. Mostly D's.
H. D's and E's.
I. Mostly E's.
J. My grades do not make any difference to my closest friend.

Please answer the following questions as you think your favorite teacher would answer them. This teacher should be the one you like best; the one you feel is most concerned about your school work.

Circle the letter in front of the statement that best answers each question.

29. How do you think your favorite teacher would rate your school ability compared with other students your age?

A. Among the best.
B. Above average.
C. Average.
D. Below average.
E. Among the poorest

30. Where do you think your favorite teacher would say you would rank in your high school graduating class?

A. Among the best.
B. Above average.
C. Average.
D. Below average.
E. Among the poorest.

31. In order to become a doctor, lawyer, or university professor, work beyond four years of college is necessary. How likely do you think your favorite teacher would say it is that you could complete such advanced work?

A. Very likely.
B. Somewhat likely.
C. Not sure either way.
D. Somewhat unlikely.
E. Very unlikely.

32. What kind of grades do you think your favorite teacher would say you are capable of getting in general?

A. Mostly A's.
B. Mostly B's.
C. Mostly C's.
D. Mostly D's.
E. Mostly E's.

33. How far do you think your favorite teacher expects you to go in school?

A. He expects me to quit as soon as I can.
B. He expects me to continue in high school for a while.
C. He expects me to graduate from high school.
D. He expects me to go to secretarial or trade school.
E. He expects me to go to college for a while.
F. He expects me to graduate from college.
G. He expects me to do graduate work beyond college.

34. Would you rather be a good student or good in sports?

A. Good student.
B. Good in sports.
C. Can't decide.
D. Both.

35. Would you rather be a good student or well liked by others of your sex.

A. Good student.
B. Well liked by others of my sex.
C. Can't decide
D. Both

36. Would you rather be a good student or popular with those of the opposite sex?

A. Good student.
B. Popular with those of the opposite sex.
C. Can't decide.
D. Both

37. Would you rather be a good student or a leader in school activities?

A. Good student.
B. Leader in school activities.
C. Can't decide.
D. Both

38. If you were free to go as far as you wanted in school, how far would you like to go?

A. I'd like to quit right now.
B. I'd like to go to high school for a while.
C. I'd like to graduate from high school.
D. I'd like to go to business or technical training school.
E. I'd like to go to college for a while.
F. I'd like to graduate from college.
G. I'd like to do graduate work beyond college.

NOTE: (This is an abbreviated version of the original questionnaire)

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