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# Shared Perceptions Between College Teacher And Student

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SHARED PERCEPTIONS BETWEEN COLLEGE TEACHER AND STUDENT

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SHARED PERCEPTIONS BETWEEN COLLEGE
TEACHER AND STUDENT

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THESIS

Submitted in Partial Fulfillment of the
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ABSTRACT OF THESIS

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# SHARED PERCEPTIONS BETWEEN COLLEGE TEACHER AND STUDENT

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The Problem. Previous research concerned with teacher-student relationships indicates that teacher accuracy of perception about students facilitates effective teaching; however, most studies focused exclusively on teacher perceptions of students' affective dimension. Given college professors' interest in students' cognitive dimension, the purpose of this investigation was to compare the accuracy of perceptions between professors and students at the University of New Mexico about students' cognitive and affective dimensions.

Procedure. Twenty-one male professors and 180 students at the University of New Mexico completed a questionnaire based on the Interpersonal Perception Method (IPM) adapted from Laing, Phillipson, and Lee (1966). The 21 professors, whose average age was 41 years, were randomly chosen from the male faculty of the College of Arts and Sciences who conducted classes with 30 to 50 students during the Fall Semester of 1975. A random sample of 15 students from each class was asked to participate.

Results. Professors and students share high accuracy of perception about student task and social behavior. There

is little perceptual difference between the two categories of task and social activity, with the exception of professors' feeling of being more understood about student sociability than about academic performance. Professor and student agreement about their relationship is negatively correlated with perceptual accuracy about student task and social skill in terms of agreement. Agreement about the relationship is also negatively correlated with perceptual accuracy about student task skill in terms of professors' and students' understanding, and with perceptual accuracy about student social activity in terms of professors' and students' realization. There is no correlation between professor and student agreement about their relationship and perceptual accuracy about student task and social skill in terms of professors' and students' feeling of being understood.

Conclusion. Students' academic performance was not found to be more accurately perceived by professors and students at the University of New Mexico than student sociability was. The highest level of perceptual accuracy was achieved by professors in the category of feeling of being understood about student social behavior. Professors and students feel that they have a good relationship generally, but this has either a negative correlation or no correlation with shared perceptual accuracy. Generally, there was high accuracy of perception, in both social as well as task dimensions, between professors and students in the seven major

variables of the IPM, i.e., agreement, professors' understanding, students' understanding, professors' realization, students' realization, professors' feeling of being understood, and students' feeling of being understood.

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# CHAPTER I

# INTRODUCTION

In understanding or perceiving a person or his message, the meaning that counts is the one created by the receiver. For example, students respond to a teacher's message according to their past experience, selectivity of perception, and importance attached to the message. Similarly, teachers respond to students' messages. The flow of communication between teacher and student may be either accurately or inaccurately assessed by the receiver. The study of communication in the classroom suggests that teachers and students influence the behavior of the other (Rosenthal and Jacobson, 1966), and that there is some "ideal match" between teachers and students which fosters effective teaching (H.A. Thelen, quoted in Guskin and Guskin, 1970).

## The Problem

The purpose of this study was to investigate whether there was more shared accuracy of perception about student academic performance than there was about student sociability. Studies concerned with teacher-student relationships on the college level are mainly concerned with teacher effectiveness (Combs, Blume, Newman, and Wass, 1974; Fox and Hein, 1971; Usher and Hanke, 1971), but no studies focus on shared perceptual accuracy between teacher and student about student

behavior, a determinant of effectiveness.

The questions examined in this study were:

(1) Do professors and students more accurately perceive students' cognitive dimension than they do students' affective dimension?

(2) Do professors and students share a high degree of perceptual accuracy when they agree about the goodness of their relationship?

## Significance of the Study

Studies concerned with communication in the classroom have stressed the importance of communication, but have failed to measure what is being communicated, and what is being perceived. An analysis of the different reactions of teachers and students to each other can help determine the success and failure of this interaction (Laing, Phillipson, and Lee, 1966). The aim of this interaction is what Laing calls an "ideal match," a balanced state between two people in which perceptions are congruent.

In order to determine what shared accuracy of perception exists between dyads, Laing has developed the Interpersonal Perception Method (IPM), which measures three levels of perceptions with respect to a range of key issues. Comparisons of these three perspectives, related to criteria for success in the classroom, have not been made on the college level. Accordingly, this study attempted to determine to what extent professors and students were accurate in their shared perceptions, specifically with reference to student behavior. The goal is increased understanding of teacher-student interaction, understanding which may serve as the

basis for helping to improve classroom relationships and teacher effectiveness.

## Operational Definitions

(1) Cognitive dimension: students' academic performance, as measured by (a) high academic performance, (b) being above average, (c) intellectual maturity,and (d) eagerness to learn.

(2) Affective dimension : students' sociability, as measured by (a) honesty, (b) likeableness, (c) fairmindedness, and (d) interest in others.

IPM Variables:

(3) Agreement or disagreement: comparison between the two direct perspectives on the same issue; matching of professor's answer A with student's answer A.

(4) Understanding or misunderstanding: comparison between one person's metaperspective and the other person's direct perspective; matching of professor's answer B with student's answer A if the understanding is the professor's, or matching of student's answer B with professor's answer A if the understanding is the student's.

(5) Realization or failure of realization: comparison between one person's meta-metaperspective and the other person's metaperspective on the same issue; matching of professor's answer C with student's answer B if the realization is the professor's, or matching of student's answer C with professor's answer B if the realization is the student's.

(6) Feeling of being understood or misunderstood: comparison between one person's meta-metaperspective and his or her own direct perspective; matching of professor's answer A with his answer C, or student's answer A with his or her answer C.

(7) Conjunction: matched comparison of two answers of "true" ("Yes, that is a true statement"), or two answers of "false" ("No, that is not a true statement"); also known as congruence.

(8) Disjunction: matched comparison of one answer of "true" ("Yes, that is a true statement") and one answer of "false" ("No, that is not a true statement").

# CHAPTER II

# REVIEW OF THE LITERATURE

The perspective of this study is the investigation of students' affective and cognitive dimensions. Hence, studies on perceptual accuracy about the affective and cognitive aspects of students are stressed. This review is divided into three sections: (1) perceptual accuracy related to students' affective dimension, which is categorized by (a) sociometric status, (b) adjustment, and (c) attitude; (2) perceptual accuracy related to students' cognitive dimension; and (3) rationale and hypotheses.

## Perceptual Accuracy Related to Students' Affective Dimension

Sociometric Status: The sociometric score of a student is the degree of acceptance he or she experiences in the group in which he or she associates. The result of such a score is often called the student's "sociometric status," and is generated by questionnaires.

An early study by Bonney (1943) examined the accuracy of three fifth grade teachers' judgments about 103 fifth graders' sociometric scores. Teachers were asked to assign the students to groups of popularity, from highest to lowest. Forty percent of the students were placed in the same group of popularity status on both lists; 48.5% differed by one

group; 10.6% differed by two groups; and .9% differed by three groups. Bonney suggested that teachers tended to rate students as popular if they performed well in school work and group activities. Accordingly, they rated those children more highly than did students. If the conclusions from research concerned with "self fulfilling" prophecy are correct (Cooper and White, 1974), overrating students may encourage a positive interaction between teacher and student while underrating them produces a negative one.

Bonney (1947) conducted a follow-up study to investigate how well seventeen high school teachers could identify 291 students having the most and least friends. A personality rating scale generated three groups of students with a high, middle, or low number of friends respectively. Teachers were more accurate about the high and middle groups than they were about the low group, i.e., they identified the well-accepted students better than they did the poorly-accepted ones. This finding was confirmed by Jackson who found that "satisfied" students were more easily selected than "dissatisfied" ones. Bonney concluded that greater accuracy was related to the more positive relationships.

Gronlund (1951) studied the accuracy of forty sixth grade women teachers' judgments concerned with the degree to which 1,258 students were acceptable to their classmates. The coefficients of teacher judgments for girls on the three criteria were .640 for work companions, .531 for play, and .624 for seating, while for boys, coefficients were .593 for

work companions, .569 for play, and .614 for seating. Teacher preferences, measured by their mean scores with students' sociometric scores, revealed that teachers tended to overrate students listed as most preferred and to underrate students listed as least preferred. The self-fulfilling prophecy may apply to this situation in which positive perceptions tend to engender a positive relationship, whereas negative perceptions tend to engender a negative relationship. As in other studies, the preferred students tend to be perceived more easily than the less well-liked ones.

Ausubel, Schiff, and Gasser (1952) investigated two third, fifth, and seventh grade teachers' ability to predict their pupils' sociometric status as determined by classmates. Coefficients for the third, fifth, and seventh grades respectively were .804, .648, and .548. Teachers' accuracy declined as students' ages increased, although accuracy remained high generally.

Gage, Leavitt, and Stone (1955) studied the understanding that 84 female and 19 male fourth, fifth, and sixth grade teachers shared with their 2,885 students about the students' social status. The questionnaires of students and teachers were scored by summing the squared differences between each student's rank and the teacher's prediction of his or her ranking. Teachers' range, from .40 to .58, generated a mean score of .48 with a standard deviation of .19. Since a low score was an accurate score, teachers predicted with a better-than-chance accuracy.

Female teachers were found to be more accurate than were the male teachers; they were also rated by students as exuding more warmth and kindness, while male teachers were perceived to be more knowledgeable. Hence, this study suggests that teachers who predicted students more accurately were perceived by students as warm and kind.

Adjustment: Brown and Macdougall (1973) studied the shared perceptions between 14 teachers and their 400 pupils from grades one through six, about student self-perception. The authors devised a Personal Competency Inventory with two parts, peer acceptance and self-perception, which included the student's view of self with peers, and self with teacher. Teachers' accuracy was greater for students who had positive ratings of themselves. Students who had rated themselves low on the first test gained in positive self-perception the second time, although teachers judged such students lower in social skill than the students did. This study corroborates the findings of Jackson and Bonney that the better-adjusted students, or those who have good self-concepts, are more easily perceived than less well-adjusted students.

Gage, Leavitt, and Stone (1955) studied the understanding that 84 female and 19 male fourth, fifth, and sixth grade teachers shared with their 2,885 students about the emotional aspects of students. The scores reflected the squared differences between students' and teachers' answers. Teachers' correlational scores, ranging from .35 to .53,

generated a mean score of .43 with a standard deviation of 3.99. Inasmuch as a low score indicated accuracy, teachers scored with a better-than-chance accuracy.

Dorr, Rummer, and Green (1973) investigated the accuracy of teacher perceptions about 214 fourth and 213 sixth graders' adjustment and self-esteem scores. Statistical correlations of teachers' and childrens' scores were .43, .30, and .44 for "personality," "social," and "total" scores respectively for fourth graders. For the three criteria for sixth graders, the correlations were .33, .19, and .30. Correlations between teacher and student scores for self-esteem were .35 for fourth graders, and .31 for sixth graders. Teachers scored with a better-than-chance accuracy in this study. Dorr's conclusions support those of Ausubel, et. al., i.e., teacher accuracy declines as the students' ages increase.

Attitude: An early study by Gage and Suci (1951) investigated the interaction between 20 high school teachers and their 200 students as a function of the accuracy of teachers' perceptions of pupils' attitudes about scholastic, recreational, and student government issues. The teachers who were rated favorably by students had an average correlation of .50 with the mean rating of students' answers. Hence, the hypothesis was tentatively upheld that accuracy of social and scholastic achievement perception between teacher and student was positively related to the effectiveness of their interpersonal relationships.

Jackson (1972) examined teachers' predictions of 293

sixth graders' responses to a school attitude questionnaire. Teacher "hits," or accurate scores, for satisfied girls averaged 60%, and for dissatisfied girls 18.7%, while teacher "hits" for satisfied boys averaged 35.4% and dissatisfied boys 46.1%. Apparently, satisfied girls and dissatisfied boys were most accurately judged while dissatisfied girls and satisfied boys were least accurately judged. The implication of this finding rests on the sex-stereotype of grade school girls being good students and satisfied with themselves, while grade school boys are categorized as relatively poor students and dissatisfied with school.

Student IQ scores were examined in relation to teachers' "misses," or inaccurate scores, about predicting students' attitude about school. Jackson found that teachers rated students with high IQs as more satisfied than they were, and students with low IQs as less satisfied than they were. However, teachers as a group were more accurate about students with high IQs than they were about other students. This finding supports Bonney's, i.e., the better students are perceived more easily than the poorer students, and with Gronlund's finding that the preferred students are overrated by their teachers.

Spuck et. al. (1973) investigated 296 high school teachers' predictions of 225 freshmen and 268 seniors about the students' attitudes on political power, race, religion, law and order, sex, and the work ethic. Teachers were found to misperceive students as being more "emergent," or

wanting to change society radically, than students were in all categories. Teachers especially misjudged the categories of work ethic, law and order, and political power. The authors concluded that teachers' traditional values generate lack of understanding and poor communication; hence, they are unable to teach effectively.

Bryant (1974) matched answers of 20 female teachers with 20 pairs of male students on Laing's Interpersonal Perception Method (IPM). Each pair of students consisted of one external locus-of-control child, who perceived he was controlled by forces outside himself, and one internal locus-of-control child, who perceived he was controlled by himself. External students were found to have more disturbed relationships with teachers than did internal students, and viewed both themselves and teachers negatively. Both teachers and internal students perceived each other more accurately, than did the dyads of teachers and external students. The self-fulfilling prophecy applies to this situation, in which students who blame others for their failures tend to receive negative feedback, while students who take responsibility for their failures tend to be viewed positively and view others positively as well.

Summary: The studies related to teachers' perceptions of students' affective evaluations reveal that there is a high degree of shared accuracy between teachers and students with regard to students who (1) are the most well-liked or well-accepted by teachers and students, (2) are satisfied girls

or dissatisfied boys, (3) have a high self-esteem, (4) have a high IQ, (5) perform well in school, and (6) take responsibility for their failures. On the other hand, teachers also overrate the "preferred" students, and those who have high IQs. The implication may be that the students with high IQs are preferred by both faculty and students, combining the student's cognitive and affective activities. However, most studies about shared accuracy between teachers and students concern students' affective dimension rather than their cognitive one, and separate the two, while in fact, the two aspects of students are interdependent. Teachers tend to be least accurate about the least popular students; and as students' age increases, teachers' perceptual accuracy declines, perhaps because students' personalities gain complexity as they grow older.

Results of predictive accuracy also show that much variation exists among teachers. While some are highly accurate, others are not. Those who are most accurate have been shown to be rated most favorably by students. Hence, accurate perception generates a positive relationship, while misperception tends to cause misunderstanding and lack of communication. Female teachers may tend to be more accurate about their students than male teachers; also, while female teachers are perceived as warm, male teachers are perceived as more knowledgeable. Female teachers outnumber their male colleagues in grades one through twelve. Hence, they are often asked to participate in studies to the exclusion

of males. Similarly, males tend to dominate the ranks of college professors, and were therefore asked to participate in this study to the exclusion of female professors.

## Perceptual Accuracy Related to Students' Cognitive Dimension

Gage, Leavitt, and Stone (1955) studied the understanding that 84 female and 19 male fourth, fifth, and sixth grade teachers shared with their students about students' cognitive level. By predicting the difficulty of standardized items against percentages of students who passed, teachers had a range of .39 to .57, and a mean score of .47 with a standard deviation of 4.16. A low score was an accurate one because it reflected the sum of the squared differences between teachers' and students' answers. Compared to their mean score of .43 for emotional empathy with the students, and their mean score of .48 for social perception, teachers showed more predictive accuracy in cognitive perception than they did in social perception, but less accuracy than they had for emotional empathy. However, there was a greater variance of scores in cognitive perception than there was in the other two areas.

Brown and Macdougall (1973) studied the shared perceptions between 14 elementary school teachers and their 400 pupils in grades one through six about student self-perception of task effectiveness. Scoring results indicated that teachers judged all students higher on task effectiveness than did the students. Whereas Bonney found

that teachers rated only students who performed well in tasks as being popular, this study suggests that even though teachers may rate students low socially, they may also rate those students high on task skill.

Pickup and Anthony (1972) studied accuracy of perception between teachers and students related to student academic performance from the students' point of view. An examination of 243 secondary school students' predictions of teachers' marks revealed that on the pre-test, 10% of the students were accurate in their predictions, while 81.3% of those who were inaccurate overestimated their marks. On the second test, the only significant change from the pre-test findings was that girls who expected higher grades than they received tended to reduce their expectations on the second test. The implication of this study may be that students who have high expectations of themselves will produce the best effort for the teachers who expect equally high results from the students.

Summary: Only three studies have been conducted which focused on shared perceptions of student academic performance between teacher and student. However, there appears to be agreement that there is little shared accuracy between teachers and students in this area. Teachers misperceive students, and students misperceive their performance.

## Rationale and Hypotheses

The purpose of this study was to determine whether students' cognitive dimensions were more accurately perceived than their affective dimensions by college professors. Studies on shared perceptual accuracy show more accuracy exists between teachers and students about students' affective than their cognitive dimensions in grade school. This may be due to (1) a predominance of affective studies, (2) a predominance of female teachers, and (3) the fact that teachers and students regard this dimension more important than the cognitive one for that age group. A high degree of shared accuracy between dyads appears to be related to positive relationships. In the affective realm of students, high expectations engender positive interaction while low expectations engender negative interaction, if the predictions of the self-fulfilling prophecy apply to the classroom.

The perspectives of the majority of the studies have been either teachers' perceptions of students, or students' perceptions of teachers, but not the perceptions of both teacher and student about each other. For example, teachers tend to perceive students according to their own values, which may not be shared with the students. Similarly, students perceive teachers according to their own values, which may not apply to teachers. However, Bryant, using Laing's IPM, studied more than a single viewpoint, and investigated accuracy of both teacher and student about the other.

Similarly, this study probed the three levels of perception that humans share with each other.

Teacher and student accuracy about the cognitive dimension of students, found to be generally low by Brown and Macdougall, and Pickup and Anthony, has not been studied on the college level. However, since college students are frequently perceived by their professors through class discussions and grades, professors are apt to be more familiar with that aspect of their students rather than students' affective activity. Moreover, Davis (1964) suggests that students' academic performance is more important to professors than is the sociability factor.

To test whether college teachers and students perceived each other more accurately in the cognitive or affective realms, the following research hypotheses were posited paralleling Laing's seven major variables:

(1) There is more agreement in shared perception between professor and student, when direct perspectives are matched, about student academic performance than student sociability.

(2) There is more understanding by the professor in shared perception between professor and student, when the professor's metaperspective is matched with the student's direct perspective, about student academic performance than about student sociability.

(3) There is more understanding by the student in shared perception between professor and student, when the student's metaperspective is matched with the professor's direct perspective, about student academic performance than about student sociability.

(4) There is more realization by the professor in shared perception between professor and student, when the professor's meta-metaperspective is matched

with the student's metaperspective, about student academic performance than about student sociability.

(5) There is more realization by the student in shared perception between professor and student, when the student's meta-metaperspective is matched with the professor's metaperspective, about student academic performance than about student sociability.

(6) There is more feeling of being understood by the professor in shared perception between professor and student, when the professor's direct perception is matched with his own meta-metaperspective, about student academic performance than about student sociability.

(7) There is more feeling of being understood by the student in shared perception between professor and student, when the student's direct perception is matched with his or her own meta-metaperspective, about student academic performance than about student sociability.

(8) Professor and student agreement about the goodness/badness of their relationship is a better predictor of perceptions of student academic than social performance, when considering agreement (re: hypothesis 1).

(9) Professor and student agreement about the goodness/badness of their relationship is a better predictor of perceptions of student academic than social performance, when considering understanding of the professor (re: hypothesis 2).

(10) Professor and student agreement about the goodness/badness of their relationship is a better predictor of perception of student academic than social performance when considering understanding of the student (re: hypothesis 3).

(11) Professor and student agreement about the goodness/badness of their relationship is a better predictor of perceptions of student academic than social performance when considering realization of the professor (re: hypothesis 4).

(12) Professor and student agreement about the goodness/badness of their relationship is a better predictor of perceptions of student academic than social performance when considering realization of the student (re: hypothesis 5).

(13) Professor and student agreement about the goodness/badness of their relationship is a better predictor of perceptions of student academic than social performance when considering the feeling of being understood by the professor (re: hypothesis 6).

(14) Professor and student agreement about the goodness/badness of their relationship is a better predictor of perceptions of student academic than social performance when considering the feeling of being understood by the student (re: hypothesis 7).

# CHAPTER III

# METHOD

## Experimental Design

The "average" professor at the University of New Mexico is a 44-year old male. Therefore, a random sample was drawn from the male faculty of the College of Arts and Sciences. Twenty-one professors, whose average age was 41 years, agreed to participate in the survey.

The "average" class at the University of New Mexico is a relatively small one of approximately 25 undergraduate students. For each of the twenty-one professors participating in this study, a total of 180 undergraduate students were randomly selected from their classes containing 20 to 30 students each. The mean age of the students was 23.4. There were approximately 50% Anglo students, 30% Spanish, 9% Indian, and 1% Black; 10% of the students did not respond to this question. The proportion of Anglos, Spanish, Indian, and Black subjects is approximately the same as that of the population of UNM. The smallest response from a class was three students, and the largest response was fifteen students, although fifteen questionnaires were issued in each class, if possible.

The students who responded may have been those who believed they shared perceptual accuracy with their professors.

However, approximately 10% of the students made unfavorable comments about their professors, indicating that not all responses were favorable.

Of the professors who participated in this study, two were from the English Department, one from History, two from Modern Languages, one from Economics, one from Journalism, one from Biology, two from Mathematics, one from Speech Disorders, two from Speech Communication, two from Political Science, one from Philosophy, one from Linguistics, three from Sociology, and one from Geology. Each professor was given questionnaires about his students who participated in the study. Students were also given the External Control Test (Robinson and Shaver, 1970). However, because some students refused to take the test, while others were dissatisfied or unhappy with it because it insulted their intelligence or was too simplistic, the External Control Test was not included in the data analysis of this study (see Appendix C). In summary, students completed one IPM styled questionnaire, and each teacher completed IPM styled questionnaires equal to the number of his students who participated in the study (one for each student).

## Procedure

Each subject was given a questionnaire that included eight questions, each with three parts, and instructed to answer the questions with specific reference to the particular class with the participating professor. The subjects were limited to undergraduates who were willing to participate in

the study. The questionnaires were collected during class if the professor allowed time for the project; otherwise, they were collected during the following class period. The subjects were asked to be as honest as possible inasmuch as their responses would be treated anonymously and confidentially.

## The Instrument

Questionnaires: The questionnaires used in this study, adapted from Laing's Interpersonal Perception Method, examined the interactions between teachers and students, in terms of three perspectives: (1) the teacher's view of the student with respect to a particular aspect of the student's behavior (direct perspective); (2) the teacher's view of the student's view of a particular aspect of the student's behavior (metaperspective); and (3) the teacher's view of the student's view of the teacher's view of a particular aspect of the student's behavior (meta-metaperspective). Similarly, the students' view of the three perspectives were: (1) his or her view of a particular aspect of his or her behavior (direct perspective); (2) his or her view of the teacher's view of a particular aspect of his or her behavior (metaperspective); and (3) his or her view of the teacher's view of his or her view of a particular aspect of his or her behavior (meta-metaperspective).

Laing's issues were not used in this study, but rather, those issues developed by Davis (1964) which apply to the evaluations of college students by college teachers. Davis

analyzed 696 sets of ratings of students by 407 faculty raters from Amherst, California Polytechnic Institute, Cornell, Dartmouth, Massachusetts Institute of Technology, Rutgers Polytechnic Institute, Rutgers University, and Stanford. The Student Rating form employed included 80 traits of student behavior which were factor-analyzed. Two factors emerged: student performance and student "desirability." Desirability of students was generated by faculty members' perceptions of the good students apart from academic performance. In this study, the factor "desirability" will be referred to as "sociability" to parallel other studies on students' affective dimension.

The following four traits of student behavior had the highest factor loadings on the factor representing academic performance: (1) high academic performance, (2) being above average, (3) intellectual maturity, and (4) eagerness to learn. The following four traits of student behavior had the highest factor loadings on the factor representing "desirability": (1) honesty, (2) likeableness, (3) fairmindedness, and (4) interest in others. These eight issues, randomly ordered, comprised the questionnaire. Parts 1, 2, 4, and 6 constitute the question of academic performance, while parts 3, 5, 7, and 8 constitute the question of sociability The last question, 9, asks if the professor and student believe they have a good relationship. (See Appendix A and B for a sample of the students' and professors' IPM questionnaires, respectively.)

## Analysis of the Data

The data were analyzed by means of a computer program that scored the questionnaires according to Laing's method of matching perspectives (see Appendix E). The program also generated both the cognitive and affective responses for each student. The seven major categories were (1) agreement and disagreement, (2) understanding and misunderstanding of professors, (3) understanding and misunderstanding of students, (4) realization and failure of realization of professors, (5) realization and failure of realization of students, (6) the feeling of being understood and misunderstood by professors, and (7) the feeling of being understood and misunderstood by students. Each of the seven combinations of perspectives was analyzed with respect to the students' cognitive and affective dimensions.

Perfect matching between teacher and student generated seven points, a difference of one generated six points, a difference of two generated five points, a difference of three generated four points, a difference of four generated three points, a difference of five generated two points, and a difference of six generated a score of one point. In each category, both conjunction and disjunction were possible. The scores of both conjunction and disjunction were averaged by dividing the total number of points for each question by the number of scores,e.g., a perfect conjunction of four 7's would total 28 points, divided by 4 would yield a perfect score of 7. The higher the score, the greater the

agreement or conjunction, since the higher scores reflected less disparity between answers.

Within the agreement and disagreement scoring category, professors' and students' direct perspectives were matched. If the student, said, "I think I am interested in others," and the professor said, "I think the student is interested in others," conjunction has been achieved. However, if the student said, "I think I am interested in others," and the professor said, "I do not think the student is interested in others," disjunction is apparent.

Within the understanding and misunderstanding category on the professor's part, professors' metaperspectives were matched with students' direct perspectives. If the professor said, "The student would say that he is interested in others," and the student said, "I think I am interested in others," conjunction has been achieved. However, if the professor said, "The student would not say that he is interested in others," while the student said, "I think I am interested in others," disjunction has occurred.

Within the understanding and misunderstanding category on the student's part, students' metaperspectives were matched with professors' direct perspectives. If the student said, "The professor would respond that I am interested in others," and the professor said, "I think the student is interested in others," conjunction is achieved. However, if the student said, "The professor would not respond that I am interested in others," while the professor said, "I think the

student is interested in others," disjunction has occurred.

Realization on the professor's part is the conjunction of his meta-metaperspective with the student's metaperspective. If the professor said, "The student would respond that I have responded that he is eager to learn," while the student said, "The professor would respond that I am eager to learn," the professor has realization. However, disjunction is the failure of realization for the professor, in which he might say, "The student would respond that I have responded that he is eager to learn," while the student responded, "The professor would not think that I am eager to learn."

Realization on the student's part is the conjunction of his or her meta-metaperspective with the professor's metaperspective. If the student said, "The professor would think that I have responded that I am eager to learn," while the professor said, "The student would respond that he or she is eager to learn," the student has realization. However, disjunction is the failure of realization for the student, in which he or she might say, "The professor would not think that I have responded that I am eager to learn," while the professor responded, "The student thinks that he is eager to learn."

The feeling of being understood on the professor's part is the conjunction of his own direct and meta-metaperspectives. If the professor said, "I think the student has intellectual maturity," and also said, "The student would think that I think he has intellectual maturity," he has the feeling of

being understood. However, disjunction generates the feeling of not being understood, in which the professor said, "I do not think the student has intellectual ability," and also said, "The student would think that I feel he or she has intellectual ability."

The feeling of being understood on the student's part is the conjunction of his or her own direct and meta-metaperspectives. If the student said, "I think that I am fairminded," and also said, "The professor thinks that I have responded that I am fairminded," he or she has the feeling of being understood. However, disjunction generates the feeling of not being understood, in which the student said, "I do not think I am likeable," but also said, "The professor would think that I think I am likeable."

Question 9, which asked about the goodness of the professor and student relationship, was scored in a manner similar to that of the other eight questions. A perfect matching between teacher's and student's answers generated five points, a difference of one generated four points, a difference of two generated three points, a difference of three generated two points, and a difference of four generated a score of one point.

The bivariate correlations between each student's score for question 9, and each of his or her fourteen means (seven for academic and seven for social categories) were computed using the Pearson Product Moment correlation, as organized in the SPSS program (1971). A Fisher logarithmic transformation

of each significant correlation was computed (critical value of $z$ = 2.58; n = 180; p. $<$ .05).

The Bonferroni $t$-test (Games, 1971), which controls family-wise Type 1 error by reducing the per experiment Type 1 error rate (family-wise error rate = .05; number of individual tests = 7; $\frac{.05}{7}$ = .007), was computed to test the mean difference between the cognitive and social dimensions for each of the seven major categories of the IPM. According to Dunn's Tables, the critical value of $t$ is $t$ 2.69.

## Results of the Data

Of the seven null hypotheses which predicted no difference between academic and social perception of the seven IPM variables, one was rejected. In the category of professors' feeling of being understood, social perception was felt to be more accurate than academic perception. Table 1 presents the means and standard deviations of academic and social perceptions, for each of the seven major categories.

The null hypothesis associated with the first research hypothesis predicted no significant difference between the accuracy of perception between professor and student about students' academic performance and sociability in terms of agreement. The null hypothesis was retained ($t$ = -.9143, p.$>$ 007).

TABLE 1

MEANS AND STANDARD DEVIATIONS
OF IPM VARIABLES

| CATEGORY | ACADEMIC | | SOCIAL | |
|---|---|---|---|---|
| | Mean | S.D. | Mean | S.D. |
| Agreement/Disagreement.... | 5.86 | .8631 | 5.94 | .7963 |
| Understanding/Misunderstanding of Professor..... | 6.06 | .7357 | 6.03 | .6937 |
| Understanding/Misunderstanding of Student..... | 5.92 | .7531 | 5.90 | .7447 |
| Realization/Failure of Realization of Professor.. | 6.00 | .6944 | 5.93 | .7225 |
| Realization/Failure of Realization of Student.... | 5.96 | .8303 | 5.91 | .7442 |
| Feeling of Being Understood/Misunderstood of Professor..... | 6.31 | .5639 | 6.59 | .4713 |
| Feeling of Being Understood/Misunderstood of Student..... | 6.45 | .5877 | 6.35 | .6583 |

The null hypothesis associated with the second research hypothesis predicted no significant difference between the accuracy of perception between professor and student about students' academic performance and sociability in terms of professors' understanding. The null hypothesis was retained ($t$ = .3979, p. $>$ .007).

The null hypothesis associated with the third research hypothesis predicted no significant difference between the accuracy of perception between professor and student about students' academic performance and sociability in terms of students' understanding. The null hypothesis was retained ($t$ = .2535, p. $>$ .007).

The null hypothesis associated with the fourth research hypothesis predicted no significant difference between the accuracy of perception between professor and student about students' academic performance and sociability in terms of professors' realization. The null hypothesis was retained ($t$ = .9371, p. $>$ .007).

The null hypothesis associated with the fifth research hypothesis predicted no significant difference between the accuracy of perception between professor and student about students' academic performance and sociability in terms of students' realization. The null hypothesis was retained ($t$ = .6017, p. $>$ .007).

The null hypothesis associated with the sixth research

hypothesis predicted no significant difference between the accuracy of perception between professor and student about students' academic performance and sociability in terms of professors' feeling of being understood. The null hypothesis was rejected ($t$ = 5.1095, p. < .007); the alternative (research) hypothesis was retained.

The null hypothesis associated with the seventh research hypothesis predicted no significant difference between the accuracy of perception between professor and student about students' academic performance and sociability in terms of students' feeling of being understood. The null hypothesis was retained ($t$ = 1.5198, p. > .007).

Of the seven null hypotheses which predicted no difference between the correlations related to professor and student agreement about the goodness/badness of their relationship and academic and social perception, three hypotheses were retained: agreement; and professors' and students' feeling of being understood. Four hypotheses were rejected: professors' and students' understanding, and professors' and students' realization. The correlations were significantly different for academic and social perceptions.

Table 2 presents the correlations of question 9 with the seven major categories of the IPM.

The null hypothesis associated with the eighth research hypothesis predicted no significant difference between the correlations related to professor and student agreement about their relationship, and shared accuracy of perception

TABLE 2

CORRELATIONS OF #9 WITH IPM VARIABLES

| CATEGORY | ACADEMIC | SOCIAL |
|---|---|---|
| Agreement/Disagreement..... | -.3861 | -.3900 |
| Understanding/Misunderstanding of Professor..... | -.3925 | .1699 |
| Understanding/Misunderstanding of Student..... | -.3899 | .1612 |
| Realization/Failure of Realization of Professor..... | .1184 | -.3929 |
| Realization/Failure of Realization of Student..... | -.1224 | -.3921 |
| Feeling of Being Understood/Misunderstood of Professor..... | .1411 | .0805 |
| Feeling of Being Understood/Misunderstood of Student..... | .0860 | .0946 |

about student academic and social behavior in terms of agreement. The null hypothesis was retained (academic r = -.3861, and social r = -.3900, both p. < .01): the difference between the two correlations was found to be nonsignificant (z = -.055, p. > .01).

The null hypothesis associated with the ninth research hypothesis predicted no significant difference between the correlations related to professor and student agreement about their relationship, and shared accuracy of perception about student academic and social behavior in terms of professors' understanding. The null hypothesis was rejected (academic r = -.3925, p. < .01, and social r = .1699, p. > .01): the difference between the two correlations was found to be significant (z = -5.4889, p. < .01).

The null hypothesis associated with the tenth research hypothesis predicted no significant difference between the correlations related to professor and student agreement about their relationship, and shared accuracy of perception about student academic and social behavior in terms of students' understanding. The null hypothesis was rejected (academic r = -.3899, p. < .01, and social r = .1612, p. > .01): the difference between the two correlations was found to be significant (z = -5.391, p. < .01).

The null hypothesis associated with the eleventh research hypothesis predicted no significant difference between the correlations related to professor and student agreement about their relationship, and shared accuracy

of perception about student academic and social behavior in terms of professors' realization. The null hypothesis was rejected (academic r = .1184, p. $>$ .01) and social r = -.3929, p. $<$ .01): the difference between the two correlations was found to be significant ($z$ = 5.0025, p. $<$ .01).

The null hypothesis associated with the twelfth research hypothesis predicted no significant difference between the correlations related to professor and student agreement about their relationship, and shared accuracy of perception about student academic and social behavior in terms of students' realization. The null hypothesis was rejected (academic r = -.1224, p. $<$ .01, and social r = -.3921, p. $<$ .01): the difference between the two correlations was found to be significant ($z$ = 2.7396, p. $<$ .01).

The null hypothesis associated with the thirteenth research hypothesis predicted no significant difference between the correlations related to professor and student agreement about their relationship, and shared accuracy of perception about student academic and social behavior in terms of professors' feeling of being understood. The null hypothesis was retained (academic r = .1411, and social r = .0805, both p. $>$ .01): no difference between the two correlations was found.

The null hypothesis associated with the fourteenth research hypothesis predicted no significant difference between the correlations related to professor and student

agreement about their relationship, and shared accuracy of perception about student academic and social behavior in terms of students' feeling of being understood. The null hypothesis was retained (academic r = .0860, and social r = .0946, both p.> .01: no difference between the two correlations was found.

# CHAPTER IV

# DISCUSSION, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

## Discussion

This study attempted to investigate the accuracy of perceptions between professors and students at the University of New Mexico. More specifically, this study investigated whether there was more shared accuracy of perception about student academic performance than there was about student sociability.

A sample of 21 male professors and 180 students completed questionnaires about their perceptions regarding student academic performance and sociability. The questions, generated by Davis (1964) who sampled college faculty about issues important to them, were patterned after Laing's Interpersonal Perception Method (IPM) (1966). The IPM asks for three types of perspectives: direct, or "I feel;" metaperspective, or "I feel that you feel;" and meta-metaperspective, or "I feel that you feel that I feel." Subjects were also asked if they felt they had a good relationship with each other.

Apparently, there is a high degree of shared perceptual accuracy between professors and students, although most of the classes evidenced some areas of disagreement. Interestingly, students' academic performance, thought to be of major

importance at the university level of learning, was not perceived more accurately by professors and students than was students' sociability. Of the seven major categories generated by Laing's IPM, only the difference between the task and social dimensions in one category was found to be significant. In the category of teachers' feeling of being understood, teachers had more of a feeling of being understood about students' social activity than they had about students' task performance. That is, teachers' direct perspectives were more congruent with their own meta-metaperspectives about students' sociability than they were about students' task skill. This finding tends to support studies showing that teachers are generally accurate about students' sociability (Bonney, 1943, 1947; Gronlund, 1951; Gage, Leavitt, and Stone, 1955), and inaccurate about task skill (Brown and Macdougall, 1973). The suggestion is that teachers feel that students feel that they, the professors, know about students' honesty, fairmindedness, likeableness, and interest in others. Professors have more of a feeling of being understood than students in terms of their own direct perspectives and meta-metaperspectives, indicating that they are less apt to be confused about their own beliefs. Students, on the other hand, are still forming their ideas, and are less apt to have their perceptions in order with each other.

The means between students' task and social dimensions across the seven categories of the IPM ranged from 5.90 to

6.59. The lowest mean, 5.90, was in the category of students' understanding about their sociability, resulting in their metaperspective, or "I think that you think," being slightly disjunctive with the professors' direct perspectives, or "I think." Students apparently feel, although,given the high mean, to no great extent, that professors either are unaware of their social characteristics, or misperceive them. This supports Spuck's finding (1973) that teachers misperceive students' attitudes and values.

The highest mean, 6.59, was in the category of teachers' feeling of being understood about students' sociability. Whereas professors feel that students know that they perceive students' social domain accurately, students tend to perceive that professors do not understand them as well socially as they do academically.

Scores on the questionnaires, representing both conjunction and disjunction, ranged from 1 to 7, and were high generally. Thus, the means reflected the high perceptual accuracy that apparently exists between college professors and students. There was therefore more conjunction than disjunction in all seven categories. Students' *t*-tests between the two sets of means of students' academic and social performance generated no significant differences between them, with the exception of professors' feeling of being more understood about student sociability. The high level of congruency on both the academic and social perspectives

indicates the potential for the most effective teaching to take place on the college level (Gage and Suci, 1951).

Scores generated from question 9, ranging from 2 to 5, revealed that the majority of professors and students closely agree about their relationship. Fifty-nine dyads agreed on sharing a very good relationship (33%); 86 agreed on sharing a relatively good relationship (48%); and 35 did not agree on their relationship (19%); whose scores on question 9 were generally low indicating disjunctions about the lack of goodness of their relationship.

The correlation between question 9 scores, and the students' scores on the IPM variable of agreement indicated that both social and academic perceptions were inversely related to professor and student agreement about their relationship. As professor and student dyads more closely agreed about their relationship, perceptual accuracy about IPM variable agreement declined. Since agreement measures direct perspectives, a student may say, "I think I have high academic performance," while the professor says, "The student has high academic perfomance," if conjunction is to be achieved. In social perception, the student may say, "I think I am likeable," while the professor says, "This student is not likeable," if disjunction has occurred. Apparently, even though professors and students were slightly disjunctive on the direct perspective level, they maintained a good relationship, or did not deny the possibility of having one (with the inclusion of the answer

"maybe").

One explanation for this inverse relationship may be that students feel that they know their academic and social behavior better than their professors, and thus do not feel bound to teachers' values about themselves. Although students may have been strongly influenced by teachers in grade school (Rosenthal and Jacobson, 1966), they may feel that once in college, they are not constrained to accept all that teachers assert or predict. Students may believe that teachers respect them for their differences of opinion, and hence have a better relationship with them, than if students continually acceded to teachers' values and judgments, especially with reference to themselves.

Another plausible explanation is that the more time teachers and students spend considering the goodness of their relationship, the less time they spend trying to understand each others' perspectives relating to the cognitive and social dimensions. Perceptual accuracy, however, was high throughout, indicating that though a significant inverse relation was found, it may not be very important.

In the second and third categories of professors' and students' understanding, an inverse relationship appears to exist between perceptual accuracy about student academic performance, and professor and student agreement about their relationship. Understanding measures one person's metaperspective with the other's direct perspective. Hence, a professor may say, "I think the student is eager

to learn," while the student says, "I am eager to learn," if the professor's understanding is to be achieved. The student may say, "The professor thinks I am above average," while the professor says, "The student is above average," if the student's understanding has been achieved. The conjunction of understanding decreases as professor and student dyads more closely agree about their relationship.. Apparently, understanding each other about student task skill is not important to professors' and students' relationships. Students may feel that they have higher academic performance than teachers feel they do, which would agree with Pickup and Anthony's finding (1972) that students misperceive their task skill as being higher than teachers judge it to be. Pickup and Anthony also suggested that good students will perform better if they get lower marks than they think they should, which may be reflected in students' maintaining a good relationship with their professors in spite of disagreement about task skill.

The inverse relationship between understanding of professors and students, and their agreement about the relationship does not apply to social perception. Rather, there is almost no correlation between social perception of professors' and students' understanding, and their relationship. Hence, agreement about a good or bad relationship does not predict perceptual accuracy about student sociability. Professors may understand students' sociability, but do not share a good relationship, or students may not

understand professors' feelings about their sociability, but enjoy a good relationship with them. This finding supports those of Bonney, Davis, and Jackson, that teachers prefer students who have high task skill, and perceive them most accurately. This may suggest that students' sociability is not crucial to the teacher-student relationship.

In summary, professor and student agreement about their relationship does not predict more perceptual accuracy about student task skill than student sociability. Agreement about the relationship predicts an inverse relationship to task perception, while it is not a predictor of social perception in terms of professors' and students' understanding.

Similarly, professors and students have an inverse relationship of social perception about professors' and students' realization, with agreement about their relationship. Realization measures one person's meta-metaperspective with the other's metaperspective. Hence, the student may say, "I think the professor thinks I think I am fairminded," while the professor says, "I think the student is fairminded," if the student's realization is achieved. If the professor said, "The student thinks that I feel she is likeable," while the student said, "The professor thinks I am likeable," the professor's realization is achieved. The conjunction of realization decreases as professor and student dyads more closely agree about their relationship. This may be explained in part by professors'

and students' not knowing each other well enough to perceive accurately in the meta-metaperspective domain. Some professors and students expressed in the "comment" section that they did not know the other well enough, but would complete the questionnaires as best they could. Another explanation may be that neither professors nor students attribute much importance to student sociability on the university level (Davis, 1964), but still either maintain a good relationship, or do not deny the possibility of having one (with the inclusion of "maybe" as an answer). Professors and students can disagree about students' honesty, fairmindedness, interest in others, and likeableness, but nevertheless agree on a good relationship.

In summary, professor and student agreement about their relationship does not predict more perceptual accuracy about student task skill than student sociability. Agreement about the relationship predicts an inverse relationship to social perception, while it is not a predictor of task perception in terms of professors' and students' realization.

The last two categories of professors' and students' feeling of being understood apparently have no correlation with professor and student agreement about their relationship. The feeling of being understood measures one person's direct perspective with his or her own meta-metaperspective. Hence, the professor may say, "The student has high academic performance," and also says, "The student thinks that I think that he has high academic performance," if the professor's

feeling of being understood is to be achieved. Similarly, the student may say, "I have interest in others," and also says, "The professor thinks that I think that I have interest in others," if the student's feeling of being understood is to be achieved. The lack of correlation may be due to the fact that the feeling of being understood concerns mainly the person who is feeling understood. The feeling may be accurate or inaccurate, but since it is not a surface feeling (Laing, 1967) it may not affect the person's behavior. A person's feeling of being understood would therefore have little or no effect on another's behavior, or the professor and student relationship. A good or bad relationship is not a predictor of either academic or social activity in terms of the feeling of being understood.

In summary, professors and students share high accuracy of perception about student task and social behavior. There is little perceptual difference between the two categories of task and social activity, with the exception of professors' feeling of being more understood about student sociability than about student academic performance. Professor and student agreement about their relationship is negatively correlated with perceptual accuracy about student task and social skill in terms of agreement. Agreement about the relationship is also negatively correlated with perceptual accuracy about student task skill in terms of professors' and students' understanding, and with perceptual accuracy about student social activity in terms of professors'

and students' realization. There is a zero-order correlation between professor and student agreement about their relationship and perceptual accuracy about student task and social skill in terms of professors' and students' feeling of being understood.

## Conclusions

Students and professors share generally high perceptual accuracy, as reflected in the high mean scores, with little variance, for the two questions of social and task behavior. Students' academic performance was not found to be more accurately perceived by professors and students at the University of New Mexico than was student sociability. The highest level of perceptual accuracy was achieved by professors in the category of feeling of being understood about student social activity. Professors and students feel that they have a good relationship generally, but this has either a negative correlation or no correlation with shared perceptual accuracy.

## Implications and Recommendations

Although educators have addressed themselves to the criteria that distinguish "effective" from "ineffective" teachers, objective criteria are difficult to come by. Effective teaching is dependent on many variables, including the particular teacher, attitudes and method of teaching, the environment, and the student. One means teachers may employ to develop an atmosphere conducive to learning is

to increase the interpersonal perception they share with the students. This may be achieved by consciously implementing instruments, written or oral, adapted from Laing's IPM.

The quality of interpersonal relationships in the classroom influences how students respond (Rosenthal and Jacobson, 1966; Combs, Blume, Newman, and Wass, 1974; Bryant, 1974). According to Combs, et. al. (1974), teachers should have accurate perceptions about their students in order to achieve a "helping" relationship with them. To the extent that there is a "balanced state" of perceptual accuracy between teachers and students, teachers are more effective in the classroom (Flanders, quoted in Guskin and Guskin, 1971).

Unfortunately, however, according to Laing (1966), dyadic relationships may possess patterns of disjunctions and conjunctions unknown to either member, but which influence the way they interact. To the extent that this study has examined both perceiver and perceived to determine what relationships exist, it may provide insight about how professors and students react to each other. Hopefully, more studies will be undertaken that employ Laing's IPM. A future investigation may expand the present study, and include a larger sample and other variables correlated with perceptual accuracy, such as race, sex, age, and years of teaching experience. For example, are members of one sex more perceptive about their own or the opposite sex? Is teaching

experience a criterion of perceptual success? Is a member of one race more accurate about his own or another race? Future investigations may determine how communication in the classroom may be improved.

If it is true, as Laing suggests, that a person's behavior generates a spiraling effect of perception, action, and reaction with another, analysis of classroom interaction includes an assessment of the quality of communication. Presently, there is little information about how students' cognitive dimension is perceived, or how such perception may be made more accurate. This study suggests that students' task skill is perceived as accurately as is students' social behavior, corroborating Bonney's finding that the well-accepted students are also the ones who have high task performance. However, affirmation of teacher and student perceptual accuracy requires further study, as it is not always true that the "slow" and "fast" learners have been accurately perceived and categorized.

# APPENDIX A

# STUDENTS' QUESTIONNAIRE

STUDENT

NAME:
AGE:
SEX:
RACIAL GROUP:
SIZE OF CLASS:
NAME OF CLASS:
NAME OF PROFESSOR:

You will see that each of the 8 items on the questionnaire has 3 sections: A, B, and C. In Section A, the statement is direct. In Section B, you are asked to indicate the answer that you think the professor would give. In Section C, you are asked to indicate the answer that the professor thinks you would give about that statement.

If you think the statement is very true, circle the 7.
If you think the statement is true, circle the 6.
If you think the statement is more true than false, circle the 5.
If you do not know how to respond, circle the 4.
If you think the statement is more false than true, circle the 3.
If you think the statement is false, circle the 2.
If you think the statement is very false, circle the 1.

1. A. I think I have high academic performance.

1 2 3 4 5 6 7

B. The professor would respond that I have high academic performance.

1 2 3 4 5 6 7

C. The professor would think that I have responded that I have high academic performance.

1 2 3 4 5 6 7

2. A. I think I am intellectually mature.

1 2 3 4 5 6 7

B. The professor would respond that I am intellectually mature.

1 2 3 4 5 6 7

C. The professor would think that I have responded that I am intellectually mature.

1 2 3 4 5 6 7

3. A. I think I am interested in others.

1 2 3 4 5 6 7

B. The professor would respond that I am interested in others.

1 2 3 4 5 6 7

C. The professor would think that I have responded that I am interested in others.

1 2 3 4 5 6 7

4. A. I think I am eager to learn.

1 2 3 4 5 6 7

B. The professor would respond that I am eager to learn.

1 2 3 4 5 6 7

C. The professor would think that I have responded that I am eager to learn.

1 2 3 4 5 6 7

5. A. I think I am honest.

1 2 3 4 5 6 7

B. The professor would respond that I am honest.

1 2 3 4 5 6 7

C. The professor would think that I have responded that I am honest.

1 2 3 4 5 6 7

6. A. I think I am above average.

1 2 3 4 5 6 7

B. The professor would respond that I am above average.

1 2 3 4 5 6 7

C. The professor would think that I have responded that I am above average.

1 2 3 4 5 6 7

7. A. I think I am fairminded.

   1 2 3 4 5 6 7

   B. The professor would respond that I am fairminded.

   1 2 3 4 5 6 7

   C. The professor would think that I have responded that I am fairminded.

   1 2 3 4 5 6 7

8. A. I think I am likeable.

   1 2 3 4 5 6 7

   B. The professor would respond that I am likeable.

   1 2 3 4 5 6 7

   C. The professor would think that I have responded that I am likeable.

   1 2 3 4 5 6 7

9. Is your relationship with this particular professor a good one?

   Definitely yes Mostly yes Maybe Mostly no

   Definitely no

   Explain your response:

10. Do you have further comments to make about this professor?

# APPENDIX B

# PROFESSORS' QUESTIONNAIRE

PROFESSOR:

NAME:
AGE:
RACIAL GROUP:
YEARS OF TEACHING EXPERIENCE:

Each of the 8 items below has 3 sections: A, B, and C. In Section A, the statement you are asked to respond to relates to your direct perception of a student. In Section B, you are asked to indicate the answer that you think the student would give. In Section C, you are asked to indicate the answer that the student thinks you would give about that statement.

If you think the statement is very true, circle the 7.
If you think the statement is true, circle the 6.
If you think the statement is more true than false, circle the 5.
If you do not know how to respond, circle the 4.
If you think the statement is more false than true, circle the 3.
If you think the statement is false, circle the 2.
If you think the statement is very false, circle the 1.

Each questionnaire that you fill out will apply to each individual student.
Student's Name: _____

1. A. I think the student has high academic performance.

   1 2 3 4 5 6 7

   B. The student would respond that he/she has high academic performance.

   1 2 3 4 5 6 7

   C. The student would think that I have responded that he/she has high academic performance.

   1 2 3 4 5 6 7

2. A. I think the student is intellectually mature.

   1 2 3 4 5 6 7

   B. The student would respond that he/she is intellectually mature.

   1 2 3 4 5 6 7

C. The student would think that I have responded that he/she is intellectually mature.

1 2 3 4 5 6 7

3. A. I think the student is interested in others.

1 2 3 4 5 6 7

B. The student would respond that he/she is interested in others.

1 2 3 4 5 6 7

C. The student would think that I have responded that he/she is interested in others.

1 2 3 4 5 6 7

4. A. I think the student is eager to learn.

1 2 3 4 5 6 7

B. The student would say that he/she is eager to learn.

1 2 3 4 5 6 7

C. The student would think that I have responded that he/she is eager to learn.

1 2 3 4 5 6 7

5. A. I think the student is honest.

1 2 3 4 5 6 7

B. The student would say that he/she is honest.

1 2 3 4 5 6 7

C. The student would think that I have responded that he/she is honest.

1 2 3 4 5 6 7

6. A. I think the student is above average.

1 2 3 4 5 6 7

B. The student would say that he/she is above average.

1 2 3 4 5 6 7

C. The student would think that I have responded that he/she is above average.

1 2 3 4 5 6 7

7. A. I think the student is fairminded.

1 2 3 4 5 6 7

B. The student would say that he/she is fairminded.

1 2 3 4 5 6 7

C. The student would think that I have responded that he/she is fairminded.

1 2 3 4 5 6 7

8. A. I think the student is likeable.

1 2 3 4 5 6 7

B. The student would respond that he/she is likeable.

1 2 3 4 5 6 7

C. The student would think that I have responded that he/she is likeable.

1 2 3 4 5 6 7

9. Is your relationship with this particular student a good one? (Circle 1)

Definitely yes Mostly yes Maybe Mostly no

Definitely no

Explain your response:

10. Do you have further comments to make about this particular student?

# APPENDIX C

# EXTERNAL CONTROL TEST

## INTERNAL VS. EXTERNAL CONTROL

(Correlations are those of each item with total score, excluding that item.)

| | | |
|---|---|---|
| 1.a. | Children get into trouble because their parents punish them too much. | |
| b. | The trouble with most children nowadays is that their parents are too easy with them. | Filler |
| 2.a. | Many of the unhappy things in people's lives are partly due to bad luck. | .26 |
| b. | People's misfortunes result from the mistakes they make. | |
| 3.a. | One of the major reasons why we have wars is because people don't take enough interest in politics. | |
| b. | There will always be wars, no matter how hard people try to prevent them. | .18 |
| 4.a. | In the long run people get the respect they deserve in this world. | |
| b. | Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries. | .29 |
| 5.a. | The idea that teachers are unfair to students is nonsense. | |
| b. | Most students don't realize the extent to which their grades are influenced by accidental happenings. | .18 |
| 6.a. | Without the right breaks one cannot be an effective leader. | .32 |
| b. | Capable people who fail to become leaders have not taken advantage of their opportunities. | |
| 7.a. | No matter how hard you try some people just don't like you. | .23 |
| b. | People who can't get others to like them don't understand how to get along with others. | |

| | | |
|---|---|---|
| 8.a. | Heredity plays the major role in determining one's personality. | |
| b. | It is one's experiences in life which determine what they're like. | Filler |
| 9.a. | I have often found that what is going to happen will happen. | .16 |
| b. | Trusting to fate has never turned out as well for me as making a decision to take a definite course of action. | |
| 10.a. | In the case of the well prepared student there is rarely if even such a thing as an unfair test. | |
| b. | Many times exam questions tend to be so unrelated to course work that studying is really useless. | .24 |
| 11.a. | Becoming a success is a matter of hard work, luck has little or nothing to do with it. | |
| b. | Getting a good job depends mainly on being in the right place at the right time. | .30 |
| 12.a. | The average citizen can have an influence in government decisions. | |
| b. | This world is run by a few people in power, and there is not much the little guy can do about it. | .27 |
| 13.a. | When I make plans, I am almost certain that I can make them work. | |
| b. | It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow. | .27 |
| 14.a. | There are certain people who are just no good. | |
| b. | There is some good in everybody. | Filler |
| 15.a. | In my case getting what I want has little or nothing to do with luck. | |
| b. | Many times we might just as well decide what to do by flipping a coin. | .29 |
| 16.a. | Who gets to be the boss often depends on who was lucky enough to be in the right place first. | .31 |

b. Getting people to do the right things depends upon ability, luck has little or nothing to do with it.

17.a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control. .36

b. By taking an active part in political and social affairs the people can control world events.

18.a. Most people don't realize the extent to which their lives are controlled by accidental happenings. .31

b. There really is no such thing as "luck."

19.a. One should always be willing to admit mistakes.

b. It is usually best to cover up one's mistakes. Filler

20.a. It is hard to know whether or not a person really likes you. .27

b. How many friends you have depends on how nice a person you are.

21.a. In the long run the bad things that happen to us are balanced by the good ones. .15

b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

22.a. With enough effort we can wipe out political corruption.

b. It is difficult for people to have much control over the things politicians do in office. .23

23.a. Sometimes I can't understand how teachers arrive at the grades they give. .26

b. There is a direct connection between how hard I study and the grades I get.

24.a. A good leader expects people to decide for themselves what they should do.

b. A good leader makes it clear to everybody what their jobs are. Filler

| | | |
|---|---|---|
| 25.a. | Many times I feel that I have little influence over the things that happen to me. | .48 |
| b. | It is impossible for me to believe that chance or luck plays an important role in my life. | |
| 26.a. | People are lonely because they don't try to be friendly. | |
| b. | There's not much use in trying too hard to please people, if they like you, they like you. | .20 |
| 27.a. | There is too much emphasis on athletics in high school. | |
| b. | Team sports are an excellent way to build character. | Filler |
| 28.a. | What happens to me is my own doing. | |
| b. | Sometimes I feel that I don't have enough control over the direction my life is taking. | .24 |
| 29.a. | Most of the time I can't understand why politicians behave the way they do. | .11 |
| b. | In the long run the people are responsible for bad government on a national as well as on a local level. | |

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Note: Score is the total number of underlined choices (i.e., external items endorsed).

# APPENDIX D

# DATA

Legend for following charts of data:

A/D = agreement, disagreement

U/M-T = understanding, misunderstanding of teachers

U/M-S = understanding/misunderstanding of students

R/F-T = realization, failure of realization of teachers

R/F-S = realization, failure of realization of students

FBU/M-T = feeling of being understood, misunderstood by teachers

FBU/M-S = feeling of being understood, misunderstood by students

CHART 1

ACADEMIC SCORES, CLASSES 1-21

| CLASS | A/D | U/M-T | U/M-S | R/F-T | R/F-S | FBU/M-T | FBU/M-S |
|---|---|---|---|---|---|---|---|
| 1 | 6.00 | 6.25 | 6.00 | 6.00 | 6.25 | 5.75 | 6.00 |
| | 6.75 | 6.75 | 6.25 | 6.50 | 6.50 | 6.75 | 6.75 |
| | 5.25 | 5.00 | 6.00 | 6.00 | 4.75 | 7.00 | 5.25 |
| | 6.50 | 6.75 | 5.50 | 5.50 | 6.50 | 7.00 | 6.25 |
| | 6.25 | 6.50 | 6.25 | 6.25 | 6.25 | 7.00 | 6.75 |
| | 6.00 | 5.75 | 6.00 | 6.00 | 5.00 | 6.50 | 5.25 |
| | 4.75 | 4.50 | 4.75 | 5.00 | 3.50 | 6.75 | 6.00 |
| | 6.50 | 6.25 | 6.75 | 6.50 | 6.50 | 6.75 | 6.75 |
| | 7.00 | 6.75 | 6.25 | 7.00 | 6.25 | 6.25 | 6.50 |
| | 6.75 | 6.75 | 6.50 | 6.50 | 5.00 | 6.50 | 4.75 |
| | 6.75 | 6.75 | 5.50 | 6.00 | 4.75 | 6.50 | 5.00 |
| | 6.00 | 5.75 | 5.75 | 6.25 | 5.50 | 6.50 | 6.75 |
| | 5.00 | 5.25 | 4.75 | 5.50 | 5.00 | 6.25 | 6.75 |
| | 6.25 | 5.75 | 6.00 | 6.50 | 5.75 | 6.00 | 7.00 |
| 2 | 6.75 | 6.50 | 6.50 | 6.25 | 5.75 | 6.50 | 6.50 |
| | 6.00 | 5.75 | 6.25 | 5.75 | 5.75 | 6.00 | 7.00 |
| | 5.25 | 5.00 | 5.50 | 6.00 | 6.75 | 6.50 | 4.75 |
| | 6.50 | 6.50 | 6.75 | 6.25 | 5.25 | 6.75 | 6.75 |
| | 5.75 | 5.50 | 5.75 | 5.50 | 6.25 | 6.25 | 7.00 |
| | 6.25 | 6.50 | 6.25 | 6.50 | 5.75 | 6.00 | 6.75 |
| | 5.50 | 6.00 | 5.75 | 6.25 | 4.75 | 6.00 | 6.25 |
| | 4.00 | 4.50 | 4.25 | 4.75 | 6.00 | 6.50 | 6.25 |
| | 5.50 | 6.00 | 5.50 | 6.00 | 7.00 | 6.25 | 7.00 |
| | 5.25 | 6.25 | 6.00 | 6.75 | 5.75 | 7.00 | 6.25 |

CHART 1
(Continued)

| CLASS | A/D | U/M-T | U/M-S | R/F-T | R/F-S | FBU/M-T | FBU/M-T |
|---|---|---|---|---|---|---|---|
| 3 | 5.75 | 5.75 | 5.75 | 5.75 | 6.50 | 7.00 | 7.00 |
| | 6.50 | 6.50 | 6.25 | 6.25 | 6.50 | 5.75 | 7.00 |
| | 6.25 | 6.75 | 6.25 | 6.00 | 6.50 | 5.75 | 6.25 |
| | 6.50 | 6.50 | 6.25 | 6.50 | 6.75 | 5.75 | 7.00 |
| | 6.75 | 7.00 | 6.75 | 5.50 | 7.00 | 7.00 | 6.75 |
| | 7.00 | 7.00 | 7.00 | 7.00 | 4.25 | 6.00 | 7.00 |
| | 5.00 | 6.25 | 4.00 | 4.50 | 5.25 | 6.25 | 6.00 |
| 4 | 6.00 | 5.25 | 6.00 | 5.25 | 5.75 | 6.00 | 7.00 |
| | 4.75 | 5.75 | 4.50 | 5.50 | 5.50 | 6.00 | 6.50 |
| | 4.50 | 5.50 | 4.50 | 5.50 | 6.00 | 6.00 | 7.00 |
| | 5.25 | 6.50 | 5.25 | 6.25 | 5.75 | 5.50 | 5.50 |
| | 4.00 | 5.50 | 4.25 | 5.75 | 5.75 | 6.00 | 6.25 |
| | 4.50 | 5.50 | 5.50 | 5.50 | 6.00 | 6.75 | 4.75 |
| | 6.00 | 6.00 | 6.00 | 6.25 | 6.75 | 5.50 | 7.00 |
| 5 | 5.00 | 5.75 | 5.25 | 5.25 | 6.00 | 7.00 | 6.50 |
| | 5.50 | 5.50 | 5.75 | 5.75 | 6.00 | 5.75 | 6.50 |
| | 6.50 | 5.75 | 6.25 | 6.50 | 5.25 | 6.50 | 6.75 |
| | 4.75 | 4.75 | 4.00 | 4.50 | 6.75 | 6.50 | 6.50 |
| | 6.50 | 6.50 | 5.50 | 6.00 | 6.00 | 5.75 | 6.75 |
| | 6.25 | 6.75 | 5.50 | 5.75 | 5.75 | 5.75 | 6.25 |
| | 6.75 | 6.75 | 7.00 | 5.75 | 6.25 | 6.50 | 6.00 |
| | 6.50 | 6.50 | 6.25 | 6.25 | 6.50 | 6.50 | 6.75 |
| | 6.75 | 6.50 | 6.75 | 6.75 | 6.50 | 6.50 | 7.00 |
| | 5.25 | 6.25 | 5.75 | 5.75 | 5.75 | 6.50 | 6.25 |

CHART 1
(Continued)

| CLASS | A/D | U/M-T | U/M-S | R/F-T | R/F-S | FBU/M-T | FBU/M-S |
|---|---|---|---|---|---|---|---|
| 6 | 5.50 | 6.25 | 6.00 | 5.50 | 6.75 | 6.50 | 6.50 |
| | 7.00 | 7.00 | 6.75 | 6.25 | 6.50 | 6.75 | 6.75 |
| | 6.25 | 6.50 | 6.75 | 6.50 | 6.25 | 6.50 | 7.00 |
| | 6.50 | 6.75 | 6.50 | 7.00 | 2.25 | 6.25 | 6.50 |
| | 2.00 | 2.00 | 2.25 | 3.00 | 5.75 | 6.75 | 6.75 |
| | 6.25 | 6.50 | 6.75 | 6.50 | 6.25 | 6.75 | 5.75 |
| | 6.50 | 6.50 | 6.75 | 6.50 | 6.25 | 6.75 | 6.75 |
| | 6.25 | 6.25 | 5.00 | 5.25 | 6.00 | 6.75 | 6.00 |
| | 4.50 | 4.50 | 5.00 | 5.25 | 6.50 | 3.50 | 5.50 |
| | 2.25 | 6.50 | 2.00 | 5.50 | 6.00 | 6.50 | 6.50 |
| 7 | 6.00 | 6.00 | 5.75 | 6.25 | 5.25 | 6.75 | 7.00 |
| | 5.50 | 5.75 | 5.00 | 5.25 | 6.00 | 7.00 | 6.00 |
| | 6.75 | 6.75 | 5.00 | 5.00 | 6.00 | 6.50 | 6.25 |
| | 6.75 | 6.25 | 6.25 | 6.25 | 6.25 | 7.00 | 5.75 |
| | 6.25 | 6.25 | 6.25 | 6.00 | 5.25 | 6.25 | 6.00 |
| | 5.00 | 6.00 | 6.25 | 5.50 | 7.00 | 6.50 | 4.75 |
| | 6.50 | 7.00 | 6.50 | 7.00 | 5.00 | 6.75 | 7.00 |
| | 5.50 | 6.00 | 5.25 | 5.00 | 6.50 | 6.25 | 5.50 |
| | 5.25 | 6.00 | 5.75 | 6.50 | 6.75 | 6.25 | 6.00 |
| | 5.75 | 6.50 | 6.00 | 6.75 | 6.25 | 6.75 | 6.75 |
| 8 | 6.25 | 7.00 | 6.25 | 6.50 | 6.25 | 6.50 | 6.25 |
| | 6.75 | 6.25 | 6.75 | 6.75 | 5.75 | 6.75 | 7.00 |
| | 6.75 | 6.50 | 5.75 | 6.00 | 6.50 | 7.00 | 6.25 |
| | 6.25 | 6.50 | 6.25 | 6.25 | 6.50 | 6.75 | 7.00 |
| | 7.00 | 6.75 | 6.75 | 7.00 | 5.50 | 6.75 | 6.75 |
| | 7.00 | 6.75 | 5.75 | 6.00 | 6.25 | 7.00 | 5.75 |
| | 6.75 | 6.25 | 6.75 | 6.75 | 6.75 | 6.75 | 7.00 |
| | 6.50 | 6.75 | 6.50 | 6.25 | 5.50 | 6.00 | 7.00 |
| | 6.00 | 6.25 | 5.75 | 5.75 | 5.75 | 6.00 | 6.25 |

CHART 1
(Continued)

| CLASS | A/D | U/M-T | U/M-S | R/F-T | R/F-S | FBU/M-T | FBU/M-S |
|---|---|---|---|---|---|---|---|
| 9 | 5.00 | 6.00 | 5.25 | 6.25 | 4.50 | 4.75 | 6.75 |
| | 4.50 | 5.50 | 5.50 | 6.25 | 5.25 | 6.25 | 6.00 |
| | 5.75 | 6.00 | 6.50 | 5.25 | 6.00 | 6.00 | 6.25 |
| | 5.50 | 6.50 | 6.50 | 6.50 | 5.25 | 5.50 | 6.00 |
| | 5.50 | 6.00 | 6.75 | 5.75 | 5.25 | 7.00 | 5.75 |
| | 6.75 | 6.00 | 6.75 | 6.75 | 6.00 | 6.00 | 5.75 |
| | 5.50 | 5.75 | 6.25 | 6.75 | 6.00 | 5.75 | 6.75 |
| | 6.25 | 6.25 | 6.00 | 5.75 | 7.00 | 7.00 | 6.75 |
| 10 | 6.50 | 6.50 | 5.75 | 5.75 | 6.25 | 7.00 | 6.50 |
| | 6.25 | 6.25 | 6.25 | 6.25 | 6.75 | 7.00 | 7.00 |
| | 6.00 | 6.75 | 6.25 | 6.25 | 6.00 | 6.75 | 7.00 |
| | 6.25 | 6.00 | 6.00 | 5.75 | 6.50 | 7.00 | 6.50 |
| | 6.50 | 6.50 | 6.50 | 6.50 | 6.25 | 7.00 | 7.00 |
| | 5.50 | 5.75 | 6.00 | 6.00 | 5.75 | 6.50 | 6.50 |
| | 5.00 | 5.50 | 5.25 | 5.25 | 6.00 | 6.75 | 6.75 |
| | 6.75 | 7.00 | 6.25 | 6.50 | 6.25 | 6.00 | 6.00 |
| | 6.50 | 6.50 | 6.25 | 5.75 | 6.75 | 6.50 | 6.75 |
| | 6.50 | 6.00 | 6.25 | 6.25 | 6.25 | 7.00 | 6.25 |
| 11 | 6.00 | 6.50 | 6.25 | 6.25 | 6.75 | 7.00 | 6.75 |
| | 5.75 | 6.25 | 6.50 | 6.50 | 5.25 | 6.50 | 6.25 |
| | 6.50 | 6.50 | 6.50 | 6.00 | 6.75 | 6.50 | 6.25 |
| | 5.25 | 5.75 | 6.25 | 5.75 | 6.25 | 7.00 | 6.50 |
| | 6.50 | 6.50 | 6.50 | 6.50 | 6.25 | 6.75 | 6.75 |
| | 6.25 | 6.75 | 7.00 | 6.75 | 6.25 | 6.75 | 6.50 |
| | 6.75 | 6.75 | 6.25 | 6.50 | 6.00 | 6.50 | 6.50 |

CHART 1
(Continued)

| CLASS | A/D | U/M-T | U/M-S | R/F-T | R/F-S | FBU/M-T | FBU/M-S |
|---|---|---|---|---|---|---|---|
| 12 | 6.50 | 6.50 | 6.25 | 6.25 | 6.75 | 6.75 | 6.75 |
| | 6.50 | 6.50 | 6.25 | 6.50 | 6.50 | 7.00 | 6.50 |
| | 6.50 | 6.50 | 6.50 | 6.50 | 4.50 | 6.75 | 6.75 |
| | 7.00 | 6.50 | 7.00 | 6.75 | 6.25 | 6.00 | 7.00 |
| | 6.75 | 5.75 | 5.25 | 6.25 | 6.50 | 6.75 | 5.75 |
| | 6.25 | 6.00 | 6.50 | 6.75 | 5.00 | 5.75 | 6.75 |
| | 5.50 | 6.75 | 5.50 | 6.75 | 5.75 | 5.75 | 6.75 |
| | 6.25 | 5.25 | 6.25 | 5.00 | 5.25 | 7.00 | 6.75 |
| 13 | 5.25 | 5.25 | 7.00 | 7.00 | 6.75 | 5.75 | 6.00 |
| | 3.50 | 4.50 | 4.25 | 5.50 | 5.25 | 6.25 | 6.25 |
| | 6.50 | 6.00 | 6.75 | 6.50 | 5.75 | 6.00 | 6.25 |
| | 5.75 | 5.50 | 6.25 | 5.75 | 6.25 | 6.75 | 4.75 |
| | 6.00 | 6.00 | 6.00 | 6.25 | 6.25 | 5.50 | 6.75 |
| | 5.25 | 5.00 | 6.00 | 5.50 | 6.00 | 6.50 | 5.75 |
| | 6.25 | 6.25 | 6.25 | 6.25 | 6.25 | 5.75 | 6.50 |
| | 6.25 | 6.00 | 6.25 | 5.50 | 5.75 | 6.25 | 6.50 |
| | 6.25 | 6.75 | 5.50 | 5.25 | 6.25 | 5.50 | 6.00 |
| | 6.25 | 5.50 | 6.50 | 6.00 | 4.50 | 6.75 | 6.25 |
| | 6.25 | 6.25 | 6.25 | 6.50 | 6.75 | 6.75 | 6.50 |
| 14 | 3.50 | 4.50 | 4.25 | 4.00 | 6.00 | 6.50 | 6.50 |
| | 6.75 | 7.00 | 6.50 | 6.50 | 6.75 | 6.50 | 6.75 |
| | 4.50 | 5.25 | 5.50 | 5.00 | 6.50 | 5.50 | 6.25 |
| | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 | 6.50 | 6.25 |
| | 6.50 | 6.25 | 6.25 | 6.75 | 6.50 | 6.00 | 6.25 |
| | 4.75 | 5.50 | 5.50 | 6.50 | 4.25 | 7.00 | 6.50 |
| | 6.25 | 6.00 | 6.75 | 6.75 | 5.00 | 7.00 | 6.50 |
| | 5.00 | 5.00 | 4.25 | 4.25 | 5.75 | 6.50 | 6.25 |
| | 5.00 | 5.25 | 5.25 | 4.75 | 6.50 | 6.50 | 6.25 |

CHART 1
(Continued)

| CLASS | A/D | U/M-T | U/M-S | R/F-T | R/F-S | FBU/M-T | FBU/M-S |
|---|---|---|---|---|---|---|---|
| 15 | 6.75 | 6.50 | 6.25 | 6.25 | 6.00 | 7.00 | 5.75 |
| | 5.25 | 6.25 | 6.00 | 5.50 | 6.75 | 6.75 | 5.25 |
| | 6.75 | 6.50 | 5.75 | 6.75 | 6.00 | 6.25 | 7.00 |
| | 6.25 | 6.00 | 6.75 | 6.50 | 6.50 | 6.75 | 6.50 |
| 16 | 5.50 | 5.50 | 6.00 | 5.75 | 5.75 | 6.75 | 6.75 |
| | 6.25 | 6.25 | 6.50 | 6.75 | 6.00 | 6.25 | 6.25 |
| | 5.25 | 6.50 | 5.25 | 5.50 | 6.25 | 6.25 | 7.00 |
| | 6.00 | 5.75 | 6.50 | 5.75 | 6.75 | 6.50 | 6.50 |
| | 6.50 | 6.25 | 6.50 | 6.75 | 5.75 | 6.50 | 6.75 |
| | 6.75 | 6.25 | 6.75 | 5.25 | 5.50 | 6.00 | 7.00 |
| | 6.00 | 6.25 | 5.75 | 5.75 | 6.00 | 5.75 | 6.50 |
| 17 | 5.00 | 5.75 | 5.00 | 6.00 | 6.50 | 6.00 | 7.00 |
| | 6.25 | 6.00 | 6.25 | 6.50 | 6.25 | 6.00 | 6.50 |
| | 6.25 | 5.75 | 6.50 | 6.00 | 6.00 | 6.25 | 6.75 |
| 18 | 6.75 | 6.75 | 7.00 | 6.00 | 5.75 | 6.00 | 6.25 |
| | 6.00 | 6.25 | 6.00 | 5.25 | 6.25 | 6.00 | 7.00 |
| | 7.00 | 6.00 | 7.00 | 6.00 | 7.00 | 6.00 | 7.00 |
| | 5.50 | 5.50 | 6.25 | 4.75 | 5.75 | 7.00 | 6.75 |
| | 6.25 | 6.25 | 6.75 | 5.25 | 5.50 | 7.00 | 7.00 |
| | 6.00 | 6.00 | 6.25 | 6.75 | 6.00 | 6.50 | 6.00 |
| | 5.00 | 5.00 | 5.00 | 6.25 | 6.50 | 5.00 | 6.25 |
| | 4.25 | 6.00 | 5.75 | 5.50 | 6.75 | 5.50 | 6.00 |
| | 4.50 | 6.25 | 5.75 | 4.75 | 5.75 | 4.50 | 5.75 |

CHART 1
(Continued)

| CLASS | A/D | U/M-T | U/M-S | R/F-T | R/F-S | FBU/M-T | FBU/M-S |
|---|---|---|---|---|---|---|---|
| 19 | 5.25 | 5.50 | 5.00 | 6.00 | 6.00 | 6.25 | 5.75 |
| | 4.50 | 6.25 | 5.50 | 6.25 | 5.00 | 5.75 | 6.00 |
| | 4.00 | 6.25 | 6.00 | 6.00 | 5.25 | 4.25 | 5.75 |
| | 5.75 | 6.50 | 4.50 | 5.00 | 6.00 | 5.25 | 6.25 |
| | 5.75 | 6.50 | 4.50 | 5.75 | 6.50 | 6.25 | 6.25 |
| | 5.75 | 5.00 | 5.50 | 6.50 | 6.25 | 6.75 | 6.50 |
| | 6.50 | 5.50 | 6.50 | 5.25 | 6.75 | 5.75 | 5.50 |
| | 6.75 | 6.25 | 6.00 | 5.50 | 6.25 | 6.50 | 6.25 |
| | 6.75 | 5.50 | 6.50 | 4.50 | 5.50 | 6.25 | 5.00 |
| | 4.75 | 6.50 | 5.00 | 5.75 | 6.50 | 5.50 | 4.50 |
| | 5.50 | 5.75 | 6.50 | 5.25 | 6.25 | 5.00 | 5.25 |
| | 5.75 | 5.75 | 6.25 | 6.50 | 5.75 | 7.00 | 6.00 |
| | 5.50 | 6.00 | 6.00 | 5.00 | 6.50 | 6.00 | 6.50 |
| | 6.75 | 6.00 | 6.50 | 6.75 | 6.50 | 6.25 | 6.75 |
| | 6.50 | 6.50 | 5.75 | 7.00 | 6.75 | 6.50 | 6.75 |
| 20 | 5.75 | 6.75 | 6.75 | 6.50 | 5.75 | 6.25 | 6.75 |
| | 6.75 | 6.75 | 6.50 | 6.25 | 5.75 | 6.25 | 6.75 |
| | 6.50 | 6.75 | 4.25 | 6.75 | 5.50 | 6.75 | 7.00 |
| | 3.25 | 4.75 | 5.50 | 5.00 | 6.25 | 6.50 | 6.00 |
| 21 | 5.50 | 5.75 | 5.50 | 6.75 | 5.75 | 6.75 | 7.00 |
| | 5.50 | 5.25 | 6.00 | 5.50 | 5.50 | 6.50 | 6.75 |
| | 6.75 | 6.00 | 5.50 | 6.75 | 6.25 | 5.75 | 5.75 |
| | 5.75 | 6.00 | 5.75 | 6.00 | 6.00 | 6.75 | 7.00 |
| | 4.25 | 4.25 | 5.50 | 5.50 | 4.25 | 6.50 | 6.50 |
| | 6.75 | 6.25 | 6.75 | 6.50 | 6.25 | 6.25 | 6.50 |
| | 5.50 | 5.75 | 6.00 | 6.00 | 6.00 | 6.00 | 6.25 |
| | 6.00 | 7.00 | 6.25 | 6.00 | 6.00 | 6.75 | 6.00 |
| MEAN: | 5.86 | 6.06 | 5.92 | 6.00 | 5.96 | 6.31 | 6.45 |
| S.D.: | .8631 | .7357 | .7531 | .6944 | .8303 | .5639 | .5877 |

CHART 2

SOCIAL SCORES, CLASSES 1-21

| CLASS | A/D | U/M-T | U/M-S | R/F-T | R/F-S | FBU/M-T | FBU/M-S |
|---|---|---|---|---|---|---|---|
| 1 | 6.75 | 6.50 | 4.75 | 5.75 | 5.25 | 6.00 | 5.25 |
| | 6.75 | 6.50 | 6.50 | 6.50 | 6.25 | 6.50 | 6.75 |
| | 6.00 | 6.50 | 5.25 | 5.25 | 5.75 | 7.00 | 5.50 |
| | 6.50 | 6.25 | 6.00 | 6.25 | 6.50 | 6.75 | 6.75 |
| | 6.25 | 6.25 | 5.75 | 5.75 | 6.00 | 7.00 | 6.75 |
| | 6.25 | 6.50 | 6.25 | 6.25 | 5.75 | 7.00 | 5.50 |
| | 5.00 | 4.75 | 4.75 | 5.00 | 5.00 | 6.75 | 6.75 |
| | 6.50 | 6.75 | 6.00 | 6.75 | 6.25 | 6.25 | 6.50 |
| | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 7.00 | 6.50 |
| | 6.25 | 6.50 | 6.50 | 6.25 | 6.75 | 6.75 | 6.80 |
| | 6.00 | 6.25 | 5.25 | 6.00 | 5.50 | 6.25 | 6.25 |
| | 6.25 | 5.75 | 6.25 | 6.00 | 5.75 | 6.75 | 7.00 |
| | 6.25 | 6.00 | 6.25 | 6.25 | 5.50 | 6.50 | 6.50 |
| | 5.75 | 5.75 | 5.75 | 6.50 | 5.75 | 6.25 | 7.00 |
| 2 | 6.00 | 5.75 | 6.25 | 5.50 | 6.25 | 5.75 | 6.50 |
| | 6.00 | 5.75 | 5.75 | 6.25 | 5.50 | 5.50 | 4.75 |
| | 4.75 | 5.00 | 5.75 | 6.00 | 6.00 | 6.75 | 6.00 |
| | 5.75 | 5.25 | 5.75 | 4.25 | 5.50 | 5.50 | 6.75 |
| | 5.25 | 5.25 | 5.25 | 5.25 | 5.25 | 7.00 | 7.00 |
| | 5.50 | 5.50 | 5.75 | 5.75 | 6.00 | 7.00 | 6.50 |
| | 5.50 | 5.50 | 5.75 | 5.25 | 5.50 | 6.50 | 6.00 |
| | 5.50 | 5.00 | 5.00 | 4.00 | 4.50 | 6.00 | 6.50 |
| | 6.00 | 6.00 | 6.50 | 6.50 | 6.50 | 7.00 | 6.50 |
| | 4.75 | 4.75 | 6.50 | 7.00 | 7.00 | 6.50 | 7.00 |

CHART 2
(Continued)

| CLASS | A/D | U/M-T | U/M-S | R/F-T | R/F-S | FBU/M-T | FBU/M-S |
|---|---|---|---|---|---|---|---|
| 3 | 6.00 | 6.00 | 5.50 | 5.50 | 5.50 | 7.00 | 6.50 |
| | 6.50 | 6.50 | 6.50 | 6.50 | 6.25 | 7.00 | 6.75 |
| | 5.00 | 5.00 | 5.25 | 5.75 | 5.25 | 6.50 | 5.75 |
| | 6.00 | 6.00 | 5.75 | 6.00 | 6.25 | 6.75 | 6.75 |
| | 6.50 | 6.75 | 6.50 | 6.50 | 6.00 | 6.50 | 6.50 |
| | 6.75 | 7.00 | 6.75 | 7.00 | 7.00 | 6.75 | 7.00 |
| | 5.25 | 5.25 | 4.00 | 4.00 | 4.25 | 7.00 | 6.00 |
| 4 | 6.00 | 6.00 | 4.50 | 4.50 | 4.25 | 7.00 | 5.25 |
| | 6.50 | 6.50 | 6.75 | 6.75 | 6.75 | 7.00 | 6.25 |
| | 5.50 | 5.75 | 5.50 | 5.75 | 5.75 | 6.75 | 7.00 |
| | 6.75 | 6.75 | 6.75 | 6.75 | 5.00 | 7.00 | 4.50 |
| | 5.75 | 5.75 | 6.00 | 6.00 | 6.00 | 7.00 | 6.75 |
| | 5.75 | 5.75 | 5.75 | 5.75 | 5.50 | 7.00 | 6.00 |
| | 6.00 | 6.00 | 5.75 | 5.75 | 5.75 | 7.00 | 6.75 |
| 5 | 6.75 | 6.75 | 6.25 | 6.50 | 7.00 | 6.75 | 6.75 |
| | 6.00 | 6.00 | 5.75 | 5.75 | 6.00 | 7.00 | 6.50 |
| | 5.75 | 5.75 | 6.00 | 6.00 | 6.00 | 7.00 | 6.75 |
| | 5.75 | 5.50 | 5.50 | 5.50 | 5.75 | 7.00 | 6.25 |
| | 6.25 | 6.50 | 5.50 | 6.00 | 5.75 | 6.50 | 6.25 |
| | 6.25 | 6.25 | 6.25 | 6.50 | 6.25 | 6.75 | 7.00 |
| | 6.50 | 6.50 | 7.00 | 6.75 | 6.75 | 7.00 | 6.75 |
| | 6.50 | 6.50 | 6.00 | 6.00 | 6.25 | 7.00 | 6.75 |
| | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 |
| | 5.75 | 6.00 | 5.75 | 6.25 | 6.00 | 6.50 | 6.50 |

CHART 2
(Continued)

| CLASS | A/D | U/M-T | U/M-S | R/F-T | R/F-S | FBU/M-T | FBU/M-S |
|---|---|---|---|---|---|---|---|
| 6 | 5.00 | 6.75 | 6.25 | 6.00 | 6.25 | 6.75 | 6.00 |
| | 6.25 | 6.50 | 5.25 | 5.50 | 6.75 | 6.25 | 6.25 |
| | 6.00 | 6.25 | 6.00 | 6.25 | 6.50 | 6.75 | 6.75 |
| | 5.50 | 6.75 | 5.50 | 6.00 | 6.75 | 6.00 | 7.00 |
| | 1.75 | 2.25 | 2.00 | 2.50 | 2.75 | 6.50 | 6.50 |
| | 6.50 | 6.25 | 6.00 | 6.00 | 5.75 | 7.00 | 6.00 |
| | 6.75 | 6.75 | 5.50 | 5.50 | 5.50 | 7.00 | 5.25 |
| | 6.25 | 6.75 | 6.50 | 6.25 | 7.00 | 6.75 | 6.75 |
| | 5.50 | 5.25 | 6.25 | 6.50 | 5.75 | 6.75 | 6.00 |
| | 2.75 | 5.75 | 3.25 | 5.50 | 5.75 | 5.50 | 7.00 |
| 7 | 5.25 | 5.00 | 5.75 | 6.00 | 5.25 | 6.75 | 6.75 |
| | 6.75 | 6.25 | 6.75 | 6.25 | 6.25 | 6.50 | 7.00 |
| | 5.50 | 5.00 | 5.25 | 5.75 | 5.50 | 6.50 | 6.50 |
| | 6.25 | 5.75 | 5.25 | 6.00 | 6.75 | 6.25 | 5.00 |
| | 5.25 | 5.00 | 6.25 | 6.50 | 5.75 | 6.75 | 6.25 |
| | 6.25 | 6.00 | 5.25 | 5.50 | 5.75 | 6.75 | 4.25 |
| | 5.50 | 6.25 | 5.50 | 6.25 | 6.25 | 6.00 | 7.00 |
| | 5.75 | 4.75 | 5.75 | 4.75 | 4.75 | 6.00 | 7.00 |
| | 5.50 | 5.25 | 5.25 | 5.00 | 5.00 | 6.75 | 6.75 |
| | 6.00 | 6.50 | 6.00 | 6.50 | 6.50 | 6.50 | 7.00 |
| 8 | 6.25 | 7.00 | 6.25 | 6.25 | 6.50 | 7.00 | 6.50 |
| | 7.00 | 6.50 | 6.50 | 6.75 | 6.00 | 6.75 | 6.50 |
| | 6.75 | 6.00 | 6.75 | 5.75 | 6.25 | 6.75 | 6.25 |
| | 6.25 | 4.50 | 5.00 | 6.25 | 6.50 | 7.00 | 7.00 |
| | 6.50 | 6.50 | 6.50 | 6.50 | 7.00 | 6.75 | 6.75 |
| | 6.00 | 6.75 | 6.75 | 5.50 | 7.00 | 6.75 | 5.75 |
| | 6.25 | 6.50 | 6.25 | 6.25 | 6.25 | 7.00 | 7.00 |
| | 6.50 | 6.50 | 6.00 | 6.50 | 6.50 | 6.75 | 7.00 |
| | 6.75 | 6.00 | 6.50 | 6.25 | 6.00 | 6.75 | 6.25 |

CHART 2
(Continued)

| CLASS | A/D | U/M-T | U/M-S | R/F-T | R/F-S | FBU/M-T | FBU/M-S |
|---|---|---|---|---|---|---|---|
| 9 | 6.50 | 6.50 | 6.25 | 6.25 | 6.25 | 7.00 | 6.75 |
| | 5.50 | 6.00 | 5.25 | 5.00 | 4.00 | 6.25 | 5.00 |
| | 6.00 | 6.00 | 4.50 | 4.50 | 6.00 | 7.00 | 7.00 |
| | 6.25 | 5.50 | 5.25 | 5.00 | 6.00 | 6.75 | 6.00 |
| | 6.00 | 5.25 | 6.25 | 4.00 | 4.00 | 5.50 | 5.75 |
| | 4.75 | 4.75 | 4.25 | 4.25 | 4.25 | 7.00 | 6.00 |
| | 6.25 | 6.75 | 5.75 | 6.00 | 6.00 | 6.25 | 6.25 |
| | 6.50 | 6.25 | 4.75 | 4.50 | 4.50 | 6.75 | 4.75 |
| 10 | 6.75 | 6.75 | 6.25 | 6.25 | 6.00 | 7.00 | 6.25 |
| | 6.50 | 6.50 | 6.50 | 6.50 | 6.50 | 7.00 | 7.00 |
| | 5.75 | 5.75 | 6.25 | 6.25 | 6.25 | 7.00 | 6.50 |
| | 6.00 | 6.00 | 5.75 | 5.75 | 6.25 | 7.00 | 6.25 |
| | 6.75 | 6.75 | 6.75 | 6.75 | 6.75 | 7.00 | 7.00 |
| | 6.75 | 6.75 | 6.00 | 6.00 | 6.00 | 7.00 | 6.25 |
| | 5.25 | 5.50 | 5.50 | 5.50 | 5.50 | 6.50 | 5.75 |
| | 5.50 | 5.50 | 5.75 | 5.75 | 5.50 | 7.00 | 6.50 |
| | 6.75 | 6.75 | 5.75 | 5.75 | 6.25 | 7.00 | 6.50 |
| | 5.50 | 6.00 | 5.50 | 6.00 | 6.00 | 6.50 | 7.00 |
| 11 | 6.50 | 6.00 | 6.50 | 6.75 | 5.75 | 6.75 | 6.25 |
| | 6.25 | 6.50 | 6.50 | 6.25 | 6.75 | 6.75 | 6.25 |
| | 6.00 | 6.25 | 6.50 | 6.50 | 6.75 | 7.00 | 6.50 |
| | 5.25 | 6.50 | 6.25 | 5.25 | 6.25 | 5.75 | 6.75 |
| | 7.00 | 7.00 | 6.50 | 6.50 | 6.50 | 7.00 | 6.50 |
| | 7.00 | 7.00 | 6.25 | 6.25 | 5.50 | 6.50 | 5.50 |
| | 6.00 | 5.75 | 6.50 | 6.75 | 5.50 | 6.75 | 6.50 |

CHART 2
(Continued)

| CLASS | A/D | U/M-T | U/M-S | R/F-T | R/F-S | FBU/M-T | FBU/M-S |
|---|---|---|---|---|---|---|---|
| 12 | 6.25 | 7.00 | 6.00 | 6.75 | 6.75 | 6.25 | 6.75 |
| | 6.25 | 6.50 | 5.50 | 6.25 | 5.00 | 6.25 | 5.25 |
| | 6.25 | 6.50 | 6.50 | 6.25 | 6.75 | 6.25 | 6.75 |
| | 6.00 | 6.25 | 6.00 | 6.25 | 5.50 | 6.75 | 6.50 |
| | 6.50 | 6.50 | 6.00 | 5.00 | 4.50 | 6.50 | 4.75 |
| | 6.00 | 7.00 | 6.00 | 6.50 | 6.25 | 6.50 | 6.30 |
| | 6.75 | 6.25 | 6.75 | 6.75 | 6.00 | 6.50 | 6.80 |
| | 6.00 | 6.50 | 6.00 | 6.00 | 6.50 | 6.00 | 6.00 |
| 13 | 6.50 | 6.50 | 6.25 | 6.50 | 6.50 | 6.75 | 7.00 |
| | 6.50 | 6.00 | 6.50 | 6.00 | 6.25 | 6.00 | 7.00 |
| | 6.00 | 5.50 | 5.75 | 5.25 | 5.50 | 6.50 | 6.00 |
| | 5.75 | 6.00 | 6.25 | 6.50 | 6.75 | 6.25 | 5.25 |
| | 5.75 | 6.00 | 4.75 | 5.25 | 5.50 | 6.50 | 6.50 |
| | 5.75 | 5.50 | 5.75 | 5.00 | 5.00 | 5.75 | 5.25 |
| | 6.25 | 6.25 | 6.00 | 6.00 | 6.00 | 6.50 | 6.75 |
| | 6.00 | 6.00 | 5.25 | 6.00 | 4.75 | 6.25 | 5.75 |
| | 3.50 | 3.50 | 3.75 | 4.00 | 3.75 | 6.75 | 6.50 |
| | 7.00 | 6.75 | 6.25 | 5.50 | 6.50 | 5.50 | 6.80 |
| | 6.25 | 6.00 | 6.75 | 6.25 | 6.50 | 6.50 | 6.50 |
| 14 | 6.00 | 5.75 | 6.00 | 6.00 | 6.00 | 6.50 | 6.25 |
| | 6.75 | 6.75 | 6.50 | 6.25 | 6.25 | 6.75 | 6.50 |
| | 6.50 | 6.25 | 6.50 | 5.50 | 6.25 | 5.75 | 7.00 |
| | 6.50 | 6.00 | 6.00 | 6.25 | 6.75 | 6.00 | 5.75 |
| | 6.25 | 6.25 | 5.75 | 6.75 | 6.50 | 5.75 | 6.25 |
| | 6.00 | 6.00 | 6.75 | 6.00 | 5.50 | 5.75 | 6.25 |
| | 6.25 | 6.25 | 6.50 | 5.75 | 6.50 | 7.00 | 6.25 |
| | 5.50 | 5.50 | 5.50 | 5.50 | 5.50 | 6.50 | 6.50 |
| | 6.00 | 6.00 | 6.00 | 6.00 | 6.00 | 6.75 | 6.00 |

CHART 2
(Continued)

| CLASS | A/D | U/M-T | U/M-S | R/F-T | R/F-S | FBU/M-T | FBU/M-S |
|---|---|---|---|---|---|---|---|
| 15 | 6.50 | 6.25 | 6.50 | 6.25 | 6.25 | 6.75 | 7.00 |
| | 6.25 | 6.75 | 5.75 | 5.50 | 5.25 | 6.75 | 4.50 |
| | 6.75 | 7.00 | 6.75 | 6.50 | 7.00 | 6.25 | 7.00 |
| | 5.75 | 5.00 | 6.00 | 5.25 | 4.75 | 7.00 | 6.75 |
| 16 | 5.75 | 6.75 | 5.75 | 5.75 | 6.75 | 7.00 | 7.00 |
| | 6.00 | 6.50 | 6.75 | 6.75 | 6.50 | 6.50 | 6.50 |
| | 6.75 | 6.75 | 6.25 | 6.25 | 6.25 | 6.50 | 6.50 |
| | 6.00 | 6.00 | 6.25 | 6.25 | 6.00 | 7.00 | 6.50 |
| | 6.25 | 6.25 | 6.00 | 6.00 | 6.00 | 7.00 | 6.25 |
| | 5.50 | 6.00 | 5.75 | 5.75 | 6.25 | 6.75 | 6.25 |
| | 6.00 | 5.50 | 6.75 | 7.00 | 6.50 | 7.00 | 6.00 |
| 17 | 5.50 | 5.50 | 5.75 | 5.75 | 5.50 | 6.50 | 7.00 |
| | 5.50 | 5.25 | 5.25 | 7.00 | 6.25 | 6.25 | 5.00 |
| | 6.00 | 6.25 | 6.25 | 5.50 | 6.25 | 6.75 | 6.00 |
| 18 | 5.50 | 6.75 | 6.00 | 6.25 | 6.00 | 7.00 | 5.75 |
| | 4.75 | 5.00 | 6.25 | 6.25 | 5.75 | 6.00 | 6.25 |
| | 6.25 | 6.00 | 6.25 | 5.25 | 6.00 | 6.75 | 7.00 |
| | 5.00 | 5.00 | 5.00 | 4.75 | 5.00 | 6.75 | 7.00 |
| | 5.00 | 5.25 | 5.50 | 5.75 | 5.75 | 7.00 | 6.50 |
| | 5.00 | 5.00 | 7.00 | 7.00 | 7.00 | 7.00 | 5.00 |
| | 4.50 | 4.50 | 6.25 | 5.25 | 5.25 | 7.00 | 6.25 |
| | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 6.75 | 7.00 |
| | 6.25 | 6.50 | 6.25 | 6.00 | 5.75 | 6.75 | 5.00 |

CHART 2
(Continued)

| CLASS | A/D | U/M-T | U/M-S | R/F-T | R/F-S | FBU/M-T | FBU/M-S |
|---|---|---|---|---|---|---|---|
| 19 | 6.25 | 5.00 | 5.25 | 5.25 | 6.25 | 6.50 | 6.00 |
| | 6.50 | 6.50 | 4.50 | 6.00 | 6.00 | 5.75 | 7.00 |
| | 6.00 | 5.75 | 6.00 | 4.75 | 6.25 | 6.25 | 6.25 |
| | 6.50 | 6.50 | 7.00 | 5.50 | 5.50 | 5.75 | 5.50 |
| | 5.75 | 6.25 | 5.50 | 5.00 | 5.50 | 6.00 | 6.25 |
| | 6.50 | 5.75 | 6.75 | 6.25 | 4.50 | 6.50 | 6.50 |
| | 7.00 | 4.50 | 5.75 | 5.75 | 5.50 | 5.50 | 6.75 |
| | 6.25 | 6.50 | 6.50 | 5.75 | 6.00 | 6.25 | 6.75 |
| | 7.00 | 6.50 | 5.25 | 6.00 | 5.75 | 6.00 | 6.75 |
| | 4.75 | 6.00 | 6.00 | 6.75 | 6.75 | 6.75 | 6.75 |
| | 6.25 | 5.75 | 4.50 | 5.25 | 6.50 | 6.75 | 6.25 |
| | 6.50 | 5.75 | 6.75 | 6.00 | 6.25 | 6.00 | 7.00 |
| | 5.25 | 6.25 | 6.00 | 6.50 | 6.25 | 6.75 | 6.00 |
| | 7.00 | 6.25 | 5.50 | 6.25 | 6.50 | 6.75 | 6.00 |
| | 6.75 | 6.75 | 6.25 | 7.00 | 5.00 | 6.00 | 6.75 |
| 20 | 7.00 | 6.25 | 6.00 | 6.50 | 6.50 | 6.50 | 6.25 |
| | 6.75 | 6.00 | 6.25 | 6.00 | 6.25 | 6.75 | 6.75 |
| | 6.25 | 6.50 | 5.75 | 6.25 | 6.00 | 6.50 | 6.50 |
| | 6.00 | 5.50 | 4.75 | 5.50 | 5.50 | 6.25 | 7.00 |
| 21 | 5.50 | 5.00 | 5.75 | 5.75 | 5.00 | 7.00 | 7.00 |
| | 6.00 | 6.25 | 6.50 | 6.00 | 6.75 | 6.50 | 6.50 |
| | 6.00 | 6.50 | 5.25 | 5.50 | 5.75 | 6.75 | 5.75 |
| | 5.75 | 5.50 | 5.25 | 5.25 | 5.50 | 7.00 | 7.00 |
| | 5.00 | 4.75 | 6.50 | 6.25 | 5.75 | 6.75 | 4.00 |
| | 6.00 | 5.50 | 5.75 | 5.75 | 6.25 | 7.00 | 4.75 |
| | 6.25 | 5.50 | 5.75 | 6.00 | 5.75 | 5.50 | 6.75 |
| | 4.75 | 6.00 | 4.75 | 5.25 | 6.00 | 6.50 | 7.00 |
| MEAN: | 5.94 | 6.03 | 5.90 | 5.93 | 5.91 | 6.59 | 6.35 |
| S.D.: | .7963 | .6937 | .7447 | .7225 | .7442 | .4713 | .6583 |

## QUESTION #9 SCORES

| CLASS | SCORE |
|---|---|
| 1 | 3 |
| | 5 |
| | 5 |
| | 5 |
| | 5 |
| | 5 |
| | 4 |
| | 5 |
| | 4 |
| | 5 |
| | 4 |
| | 5 |
| | 5 |
| | 4 |
| 2 | 4 |
| | 4 |
| | 4 |
| | 4 |
| | 5 |
| | 4 |
| | 2 |
| | 5 |
| | 5 |
| | 4 |
| 3 | 5 |
| | 5 |
| | 4 |
| | 5 |
| | 4 |
| | 5 |
| | 5 |
| 4 | 5 |
| | 5 |
| | 4 |
| | 5 |
| | 4 |
| | 4 |
| | 5 |

| CLASS | SCORE |
|---|---|
| 5 | 5 |
| | 5 |
| | 5 |
| | 2 |
| | 5 |
| | 5 |
| | 4 |
| | 4 |
| | 5 |
| 6 | 3 |
| | 5 |
| | 5 |
| | 5 |
| | 4 |
| | 4 |
| | 5 |
| | 5 |
| | 3 |
| | 2 |
| 7 | 5 |
| | 5 |
| | 4 |
| | 4 |
| | 4 |
| | 2 |
| | 4 |
| | 3 |
| | 4 |
| | 5 |
| 8 | 3 |
| | 3 |
| | 5 |
| | 3 |
| | 4 |
| | 5 |
| | 4 |
| | 4 |
| | 5 |

| CLASS | SCORE |
|---|---|
| 9 | 5 |
| | 4 |
| | 4 |
| | 4 |
| | 5 |
| | 5 |
| | 5 |
| | 5 |
| 10 | 4 |
| | 5 |
| | 5 |
| | 5 |
| | 5 |
| | 5 |
| | 4 |
| | 3 |
| | 5 |
| | 5 |
| 11 | 5 |
| | 3 |
| | 4 |
| | 4 |
| | 5 |
| | 4 |
| | 5 |
| 12 | 4 |
| | 5 |
| | 5 |
| | 5 |
| | 4 |
| | 4 |
| | 5 |
| | 5 |
| 13 | 5 |
| | 4 |
| | 5 |
| | 5 |
| | 4 |
| | 5 |
| | 4 |
| | 4 |
| | 4 |
| | 5 |
| | 5 |

| CLASS | SCORE |
|---|---|
| 14 | 3 |
| | 4 |
| | 4 |
| | 5 |
| | 4 |
| | 4 |
| | 5 |
| | 5 |
| | 3 |
| 15 | 5 |
| | 5 |
| | 5 |
| | 4 |
| 16 | 5 |
| | 5 |
| | 4 |
| | 4 |
| | 4 |
| | 5 |
| | 5 |
| 17 | 3 |
| | 4 |
| | 4 |
| 18 | 5 |
| | 4 |
| | 5 |
| | 5 |
| | 5 |
| | 3 |
| | 3 |
| | 5 |
| | 2 |

| CLASS | SCORE |
|---|---|
| 19 | 5 |
| | 4 |
| | 5 |
| | 4 |
| | 5 |
| | 4 |
| | 4 |
| | 5 |
| | 5 |
| | 5 |
| | 4 |
| | 5 |
| | 4 |
| | 4 |
| | 3 |
| 20 | 3 |
| | 4 |
| | 5 |
| | 4 |
| 21 | 5 |
| | 5 |
| | 4 |
| | 5 |
| | 4 |
| | 5 |
| | 5 |
| | 4 |

# APPENDIX E

# COMPUTER PROGRAM FOR IPM VARIABLES

```
.TYPE XTEST2.FTN
[14:29:29]

C  SET UP ARRAYS
      DIMENSION STDNT(15,8,3),TEACH(15,8,3)
      DIMENSION STDN9(15),TEAC9(15)
      DIMENSION ANSW(15,8,2,7),ANSW9(15,2)
      DIMENSION Q(8,3)
      DIMENSION X(15,7,2)
      DIMENSION CLAVG(11,7)
C
C  ENTER DATA FILE NAME
      ACCEPT 700,FNAME
700   FORMAT(A6)
C
C  OPEN DATA FILE
      OPEN(UNIT=20,FILE=FNAME)
      N = 0
      M = 0
C
C  READ DATA FILE
5     READ(20,800,END=60)IDENT,K,((Q(I,JA),JA=1,3),I=1,8),U
800   FORMAT(I1,I2,1X,25(F2.0))
      IF (IDENT.EQ.0) GO TO 50
C     TYPE 850,IDENT,K,N,M,IN
850   FORMAT(5X,I2,2X,I2,1X,I2,1X,I2,1X,I2)
      DO 10 J = 1,8
      IF (IDENT.EQ.2) GO TO 40
C  ENTER DATA INTO STUDENT ARRAY
      DO 20 L = 1,3
C
      STDNT(K,J,L) = Q(J,L)
20    CONTINUE
      STDN9(K) = U
      N = N + 1
      GO TO 10
C
C     ENTER DATA INTO TEACHER ARRAY
40    DO 30 L = 1,3
      TEACH(K,J,L) = Q(J,L)
30    CONTINUE
      TEAC9(K) = U
      M = M + 1
10    CONTINUE
50    GO TO 5
60    CONTINUE
      N = N/8
      M = M/8
C
```

```
      DO 110 K = 1,N
C     TYPE 900,K,((STDNT(K,J,L),L=1,3),J=1,8),STDN9(K)
110   CONTINUE
900   FORMAT(1X,I2,3X,25(1X,F2.0))
C
      DO 120 K=1,N
C     TYPE 900,K,((TEACH(K,J,L),L=1,3),J=1,8),TEAC9(K)
120   CONTINUE
C
C  SORT DATA AND CONVERT RAW RESPONSES TO SCORES (1-7)
      DO 130 J = 1,N
      DO 140 IA = 1,8
      DO 146 KB = 1,7
      DO 145 KA = 1,2
      ANSW(J,IA,KA,KB) = 100.
145   CONTINUE
146   CONTINUE
      IB = 1
      IC = 1
C  CALL SUB PROGRAM TO SORT DATA
      CALL IFFY(STDNT(J,IA,IB),TEACH(J,IA,IC),IX,Z)
      Y = 1
      CLAUG(IA,Y) = CLAUG(IA,Y) + Z
      ANSW(J,IA,IX,Y) = Z
C
      IB = 1
      IC = 2
      CALL IFFY(STDNT(J,IA,IB),TEACH(J,IA,IC),IX,Z)
      Y = 2
      CLAUG(IA,Y) = CLAUG(IA,Y) + Z
      ANSW(J,IA,IX,Y) = Z
C
      IB = 2
      IC = 1
      CALL IFFY(STDNT(J,IA,IB),TEACH(J,IA,IC),IX,Z)
      Y = 3
      CLAUG(IA,Y) = CLAUG(IA,Y) + Z
      ANSW(J,IA,IX,Y) = Z

      IB=2
      IC = 3
      CALL IFFY(STDNT(J,IA,IB),TEACH(J,IA,IC),IX,Z)
      Y = 4
      CLAUG(IA,Y) = CLAUG(IA,Y) + Z
      ANSW(J,IA,IX,Y) = Z
C
      IB = 3
      IC = 2
      CALL IFFY(STDNT(J,IA,IB),TEACH(J,IA,IC),IX,Z)
      Y = 5
      CLAUG(IA,Y) = CLAUG(IA,Y) + Z
      ANSW(J,IA,IX,Y) = Z
C
```

```
IB = 1
IC = 3
CALL IFFY(TEACH(J,IA,IB),TEACH(J,IA,IC),IX,Z)
Y = 6
CLAUG(IA,Y) = CLAUG(IA,Y) + Z
ANSW(J,IA,IX,Y) = Z

IB = 3
IC = 1
CALL IFFY(STDNT(J,IA,IB),STDNT(J,IA,IC),IX,Z)
Y = 7
CLAUG(IA,Y) = CLAUG(IA,Y) + Z
TYPE 2030,(CLAUG(IA,Y))
ANSW(J,IA,IX,Y) = Z
CONTINUE
CONTINUE
DO 150 IA = 1,N
DO 160 IB = 1,8
TYPE 1000,((ANSW(IA,IB,IC,ID),IC=1,2),ID=1,7)
FORMAT(5X,7(2X,F2.0,1X,F2.0))
CONTINUE
TYPE 1010
FORMAT(1H-)
CONTINUE
TYPE 3002
FORMAT(1H ,'INDIV MEAN')
DO 300 IY = 1,7
CLAUG(10,IY) = CLAUG(1,IY)+CLAUG(2,IY)+CLAUG(4,IY)+CLAUG(6,IY)
CLAUG(10,IY) = CLAUG(10,IY)/(4*N)
TYPE 2030,(CLAUG(10,IY))
CLAUG(11,IY) = CLAUG(3,IY)+CLAUG(5,IY)+CLAUG(7,IY)+CLAUG(8,IY)
CLAUG(11,IY) = CLAUG(11,IY)/(4*N)
TYPE 2030,(CLAUG(11,IY))
CONTINUE
DO 400 IA = 1,N
DO 350 IY = 1,7
IW = 1
DO 330 IC = 1,2
IF (ANSW(IA,1,IC,IY) .EQ. 100) GO TO 5000
X(IA,IY,IW) = X(IA,IY,IW)+ANSW(IA,1,IC,IY)
IF (ANSW(IA,2,IC,IY).EQ.100) GO TO 5010
X(IA,IY,IW) = X(IA,IY,IW)+ANSW(IA,2,IC,IY)
IF (ANSW(IA,4,IC,IY).EQ.100) GO TO 5020
X(IA,IY,IW) = X(IA,IY,IW) +ANSW(IA,4,IC,IY)
IF (ANSW(IA,6,IC,IY).EQ.100) GO TO 330
X(IA,IY,IW) = X(IA,IY,IW)+ ANSW(IA,6,IC,IY)
CONTINUE
X(IA,IY,IW)=X(IA,IY,IW)/4
TYPE 2030,X(IA,IY,IW)
X(IA,IY,IW) = SQRT(ABS((CLAUG(10,IY)-X(IA,IY,IW))/N))
TYPE 2030,X(IA,IY,IW),CLAUG(10,IY),N
```

```
5030    IW = 2
        DO 335 IC=1,2
        IF (ANSW(IA,3,IC,IY).EQ.100) GO TO 5040
        X(IA,IY,IW) = X(IA,IY,IW) + ANSW(IA,3,IC,IY)
5040    IF (ANSW(IA,5,IC,IY) .EQ.100) GO TO 5050
        X(IA,IY,IW) = X(IA,IY,IW) + ANSW(IA,5,IC,IY)
5050    IF (ANSW(IA,7,IC,IY).EQ.100) GO TO 5060
        X(IA,IY,IW) = X(IA,IY,IW) + ANSW(IA,7,IC,IY)
5060    IF (ANSW(IA,8,IC,IY).EQ.100) GO TO 335
        X(IA,IY,IW) = X(IA,IY,IW) + ANSW(IA,8,IC,IY)
335     CONTINUE
        X(IA,IY,IW) = X(IA,IY,IW)/4
        TYPE 2030,X(IA,IY,IW)
        X(IA,IY,IW) = SQRT(ABS((CLAVG(11,IY)-X(IA,IY,IW))/N))
C       TYPE 2030,X(IA,IY,IW)
350     CONTINUE
400     CONTINUE
        IB = 1
        IL = 1
        IM = 2
        IN = 4
        IO = 6
        IZ=10
        IW=1
        IA=0
        DO 200 IA=1,N
        DO 208  IX = 1,2
        DO 210 ID=1,7
        DO 220 IC=1,2
C   CALL SUBPROGRAM TO COMPUTE AVG AND STANDARD DEVIATION
        CALL IEEX((ANSW(IA,IL,IC,ID)),(ANSW(IA,IM,IC,ID)),
        1 (ANSW(IA,IN,IC,ID)),(ANSW(IA,IO,IC,ID)),AVG,
        2 SD1,SD2,SD3,SD4)
        IF (IC.EQ.2) GO TO 220
        SD1A = SD1
        SD2A = SD2
        SD3A = SD3
        SD4A = SD4
        AVGA = AVG
220     CONTINUE
        IF (IB.GE.2) GO TO 625
C   TYPE HEADINGS
        TYPE 2000,IA
2000    FORMAT(1H-,5X,'STUDENT    ',I2)
C
        TYPE 2001,ID
2001    FORMAT(5X,'CATEGORY    ',I2)
        TYPE 2005,IL,IM,IN,IO
2005    FORMAT(1H ,'QUESTIONS',2X,3(I1,','),I1)
        Y=ID
C
```

```
      IF(Y.EQ.1)GO TO 201
      IF(Y.EQ.2) GO TO 202
      IF (Y.EQ.3) GO TO 203
      IF (Y.EQ.4) GO TO 204
      IF(Y.EQ.5) GO TO 205
      IF (Y.EQ.6) GO TO 206
      IF (Y.EQ.7) GO TO 207
      TYPE 2011
      GO TO 610
      TYPE 2012
      GO TO 610
      TYPE 2013
      GO TO 610
      TYPE 2014
      GO TO 610
      TYPE 2015
      GO TO 610
      TYPE 2016
      GO TO 610
      TYPE 2017
      FORMAT(1H ,5X,'AGREEMENT',29X,'DISAGREEMENT')

      GO TO 610
      FORMAT (1H ,'TEACHERS UNDERSTANDING',17X,' MISUNDERSTANDING')
      GO TO 610
      FORMAT(1H ,'STUDENTS UNDERSTANDING',18X,'MISUNDERSTANDING')
      GO TO 610
      FORMAT  (1H ,'TEACHERS REALIZATION',19X,' FAILURE OF REALIZ')
     GO TO 610
      FORMAT(1H ,'TEACHERS BEING UNDERSTOOD',13X,'  MISUNDERSTOOD')
      GO TO 610
      FORMAT(1H ,'STUDENTS REALIZATION',19X, ' FAILURE OF REALIZ')
      GO TO 610
      FORMAT(1H ,'STUDENTS BEING UNDERSTOOD',15X,'MISUNDERSTOOD')
      TYPE 3000
      FORMAT(5X,'SCORE',4X,'AVG',7X,'S.D.',13X,'SCORE',4X,'AVG',
      17X,'S.D.')

      TYPE 2020,ANSW(IA,IL,1,ID),AVGA,SD1A,ANSW(IA,IL,2,ID),
      1AVG,SD1
      FORMAT(1H ,5X,F2.0,6X,2(F6.4,2X),12X,F2.0,6X,2(F6.4,2X))
      FORMAT(1H ,5X,3(F6.4,2X),12X,3(F6.4,2X))

C     RESULTS
      TYPE 2025,ANSW(IA,IM,1,ID),SD2A,ANSW(IA,IM,2,ID),SD2
      TYPE 2025,ANSW(IA,IN,1,ID),SD3A,ANSW(IA,IN,2,ID),SD3
      TYPE 2025,ANSW(IA,IO,1,ID),SD4A,ANSW(IA,IO,2,ID),SD4
      TYPE 3001
      FORMAT (1H ,'CLASS AVG',4X,'STD DEV')
      TYPE 2030,CLAVG(IZ,ID),X(IA,ID,IW)
      FORMAT(6X,F2.0,14X,F6.4,14X,F2.0,14X,F6.4)
      FORMAT (3(F10.4))
```

```
DIVIDE QUESTIONS INTO "SOCIAL"(3,5,7,8) AND "ACADEMIC"(1,2,4,6)
   CONTINUE
   IL = 3
   IM = 5
   IN = 7
   IO = 8
   IZ=11
   IW=2
   CONTINUE
   IL = 1
   IM = 2
   IN = 4
   IO = 6
   IZ=10
   IW=1
   CONTINUE
   STOP
   END
```

```
.TYPE IEEX1/FTN
[14:42:59]
          SUBROUTINE IEEX(A,B,C,D,AVG,SD1,SD2,SD3,SD4)
C
          SD1 = 100.
          SD2 = 100.
          SD3 = 100.
          SD4 = 100.
          AVG = 100.
          E=0.
          F=0.
          IF(A.EQ.100.) GO TO 10
          E=E+A
          F=F+1.
10        IF(B.EQ.100.) GO TO 20
          E=E+B
          F=F+1.
20        IF(C.EQ.100.) GO TO 30
          E=E+C
          F=F+1.
30        IF(D.EQ.100.) GO TO 40
          E=E+D
          F=F+1.
40        CONTINUE
          IF (F .EQ.0.) GO TO 45
          AVG=E/F
200       FORMAT(5X,F6.4)
45        CONTINUE

C
          IF (F .EQ.0.) GO TO 75
          IF(A.EQ.100.) GO TO 50
```

```
      SD1=SQRT(ABS(AVG-A)/F)
50    IF(B.EQ.100.) GO TO 60
      SD2=SQRT(ABS(AVG-B)/F)
60    IF(C.EQ.100.) GO TO 70
      SD3=SQRT(ABS(AVG-C)/F)
C
70    IF(D.EQ.100.) GO TO 80
      SD4=SQRT(ABS(AVG-D)/F)
C
75    CONTINUE
80    RETURN
      END
```

```
.TYPE JEFY1.FTN
[14:44:49]

      SUBROUTINE JEFY(ST,TEA,IX,Y)
      Y = 0
      IZ = 0
      IX = 2

      IF (ST.EQ.TEA) IX = 1
      IF ((ST.LE.4.).AND.(TEA.LE.4.)) IX = 1
      IF ((ST.GE.4.).AND.(TEA.GE.4.)) IX = 1
      IF (ABS(ST - TEA).GE.3.) IX = 2
      Y = 7-ABS(ST - TEA)
      RETURN
      END
```

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