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A SURVEY OF DIFFERENCES BETWEEN UNIVERSITY PROFESSORS EVALUATED BY STUDENTS AS OUTSTANDING TEACHERS AND THEIR OTHER COLLEAGUES

by
Esther E. Kamisar

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
(Education)
in The University of Michigan
1975

Doctoral Committee:

Professor Allen Menlo, Chairman
Professor Finley Carpenter
Associate Professor Raymond Hill
Professor Matthew Trippe

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CHAPTER I

INTRODUCTION

Statement of the Problem

One of the intriguing and as yet incompletely answered questions in the field of educational psychology is: What are the qualities of the outstanding or distinguished professors in higher education which differentiate them from their other colleagues? These "great" professors are characterized by alumni in nostalgic reminiscences, "Do you remember Prof. _____? He was great!" The student excitedly anticipated each class session, and in the words of one professor who participated in this study, his own experience of such a class was that it had been a "memorable" occasion.

These great professors are not monopolized by any one discipline--they are in the sciences, the arts, in the undergarduate departments and in the graduate schools. They may lecture to large classes or lead discussions in small seminars.

Besides the students' perceptions of these "great" professors, what are these professors' perceptions of the teaching-learning process, their students, how do they prepare for class, what other professional activities

engage them, and how do these dimensions differentiate them from other professors if at all?

It is necessary to conceptualize these qualities in terms suitable for study across disciplines and from the various points of view of students, objective observers and the professors themselves and to establish appropriate research procedures for each dimension of the study.

Analysis of Previous Research

In spite of very important contributions in this area, a full-blown portrait of the "great" professor has not yet emerged. One reason for this may be that, for the most part, such research has either been concerned with discovering various isolated factors presumed to be indigenous to teaching; or, the studies, themselves, have been isolated in different subject areas where findings relevant to some disciplines cannot be made applicable to others.

For example, Isaacson, McKeachie, Milholland, Lin, Hofellar, Baerwaldt and Zinn (1964) used student evaluations to correlate six factors labeled Skill, Overload, Structure, Feedback, Group Interaction and Student-Teacher Rapport.

Deshpande, Webb and Marks (1970) in an effort to remedy the discrepancy in research pertaining to teachers in the sciences, correlated factors for engineering instructors. These researchers agreed with McKeachie's view that different factors are rated highly by students for different subject areas. Whereas the students in

McKeachie's study of an introductory psychology course favored Skill, Student Rapport and Group Interaction, Deshpande's engineering students favored Structure, Control and Lecture.

Solomon (1966) isolated the factors of different teaching styles in American Government evening classes. This study questioned the implications of the interaction between students and teaching styles which other researchers, e.g., Smith, Wood, Downer and Raygor, studied (1956).

Another reason why the question of teacher effectiveness has eluded resolution is perhaps the biased viewpoint of the teacher as a low level professional. This is clearly discernible in research on personality assessment of teachers by psychologists using the inventories of their trade designed to diagnose the mentally ill. This research stance is criticized by Getzels and Jackson (1963). Their evaluation of traditional studies was most likely responsible for later, more significant research. However, their remarks are still of interest to those currently engaged in studying the question of teacher personality and effectiveness:

> Despite the critical importance of the problem and a half-century of prodigious research effort, very little is known for certain about the nature and measurement of teacher personality, or about the relation between teacher personality and teaching effectiveness. The regrettable fact is that many of the studies so far have not produced significant results. Many others have produced only pedestrian findings. For example, it is said after the usual inventory tabulation that good teachers are friendly, cheerful, sympathetic and morally virtuous rather than cruel, depressed, unsympathetic and morally depraved.

> But when this has been said, not very much that is especially useful has been revealed. For what conceivable human interaction--and teaching implies first and foremost a human interaction--is not the better if the people involved are friendly, cheerful, sympathetic and virtuous rather than the opposite? What is needed is not research leading to the reiteration of the self-evident but to the discovery of specific and distinctive features of teacher personality and of the effective teacher.

Perhaps the ultimate stumbling block to studies on teacher effectiveness lies in the varying nature of philosophical and practical educational values which makes them unreliable touchstones for evaluation in different teaching milieus. Ryans (1960) who studied elementary and secondary school teachers concluded:

> Two very important reasons why effective and ineffective teachers cannot be described with any assurance are the wide variation in the value concepts underlying descriptions of desirable teaching objectives and the differences in teacher role at different educational levels, in different subjects, and with different pupils.

McKeachie (1971) supports this view and adds his concern for the transitory nature of evaluative criteria:

> We need to go well beyond the simplest measures of knowledge. . . . Research on college teaching may result in some principles of general validity. But I suspect that much of what we find is valid only for a given culture at a given time.

If the research in teacher effectiveness is to continue along its present course, an armamentarian of variables ad infinitum will be assembled concerning teachers, students, subjects, levels of study, etc., only to be correlated with each other ad infinitum. The result may well be similar to the neurological findings which perplexed Sigmund Freud in the study of motor aphasia (Jones, 1961):

> Wernicke, and following him Lichtheim, drew up schemes of the supposed connections of the centers and postulated various sections of these where a lesion would theoretically account for this or that combination of aphasic disturbances. The more of these that were observed, the more complicated became the diagrams, until this Ptolemy-like situation called for a Kepler to simplify it. That Freud undertook to do. A detailed analysis of published cases showed that the schemes had inner contradictions, whereupon Freud was emboldened to throw doubt on the whole basis of the doctrine. . . . All of this was a stage in Freud's emancipation from the more mechanical aspects of the Helmholtz school. . . . He made a psychological discursus into the development of speech and reading, the acquiring of words and ideas, and protested against the confounding of physiological with psychological data.

Psychological Approach

In order to overcome the limitations of previous research, it is proposed that Freud's example be followed and that a less "physiological" and a more "psychological" research stance be assumed in the study of teacher effectiveness. Seidman's (1963) approach is an example of just such a "psychological" approach to this problem.

Dollard and Miller (1950) view the psychotherapist as a special kind of teacher. Seidman makes the converse assumption that teachers can be viewed as therapists or counselors in the sense that each group is presumably a "helper" in a "helping relationship." Seidman identifies the similar dilemmas of identifying both good counselors and good teachers:

> . . . the competencies approach assumes good helpers can be clearly distinguished from poor ones on the basis of traits or of methods they use. This relationship, however, is of a disappointingly low order. Apparently a wide variety of types of people can become effective helpers and the methods they use may be equally diverse. Some good teachers lecture;

> some others never do. Some are tough, while others, equally good, are lenient. Some counselors talk a great deal; some counselors talk very little. Yet both are judged as good by their clients. Methods, it seems, are deeply personal--arising from the personality of the helper and tailored to the situations and persons with whom he is dealing.

Seidman believes that the common characteristic between good teachers, therapists and other "helpers" which distinguishes them from the less expert is their perception. The expert helpers,

> . . . learned to use themselves as highly effective instruments for carrying out their own and society's purposes. . . . the model was more like a Univac capable of taking in all kinds of data, passing it through a formula, and arriving at the best . . . answer in the light of all the factors involved.

Translating this concept more specifically to the field of teaching, what occurs in the class is determined by the teacher's ability to perceive and incorporate a great and varied amount of data such as the needs of students, their level, their individual differences, the particular subject matter, specific objectives, options in methodology, etc.

Purpose of This Study

Seidman concluded that it was the "perception" of the "helpers" which provided the "formula" facilitating the translation of such data into practice. One of the purposes of this present study is to carry Seidman's hypothesis one step further to determine whether or not outstanding teachers implement their goals in the classroom to a greater extent than do their other colleagues.

Besides the acuity of perception which distinguishes Seidman's "expert helpers," it is further hypothesized in this study that expert teachers also share other traits with expert therapists, and that a construct of these similar attributes needs to be ascertained and tested for reliability on "expert" or "outstanding" professors and matched pairs of "other" colleagues.

Attributes of Therapists to be Transposed into Teacher Characteristics

Karl Jaspers (Chessick, 1974), one of the first psychotherapists to make application of phenomenology to psychiatric research (Ellenberger, 1958), defined the characteristics requisite in an effective psychotherapist. These characteristics will be used as prototypes in this study:

> Poise (perspective)--It makes me keep my distance and distinguish things according to their essentiality. Poise allows us to tackle concrete tasks without fanaticism but with vigor, keeping calm if there is no success. A certain restraint the Greeks called sophrosyne or balance in life is involved here.
>
> Humanitas (Open-mindedness)--Putting myself into every other man's place, listening to reason, entering into the rationality of the case, and boundlessly expanding myself in ideas. It is resistance to sophisms, to the pressures of willful self interest, and to accidental sensitivities. It is candor, understanding, accessibility and possibility . . . a disinclination to humiliate anyone, a courtesy in personal contact.
>
> Passion, the third aspect, consists of an untamed force that must be present as a driving energy to keep a person interested and emotionally invested in the world.

It is assumed in this study that "outstanding" professors will be rated more highly in these three characteristics of Poise, Humanitas and Passion than will their matched colleagues.

Method and Rationale for Selection of Outstanding Professors

Initially, it seemed appropriate to select outstanding professors by canvassing alumni of a particular university for their nominations of the outstanding professors they remembered. However, McKeachie (1972) reported that prior research indicated that, at the college level, students hold the same views of effective and ineffective teachers as they do later as alumni. It was therefore decided to follow Kerlinger's (1964) advice to researchers to utilize data already collected where possible. Thus, the selection of professors both "Outstanding" and "Others" was made from current student evaluations.

Method and Rationale for Taped Interviews

The method of the taped interview was selected in order to surmount the shortcomings of previous research which viewed teachers merely as experimental objects. It was expected that taped interviews would provide a phenomenological account of instructors in their teaching milieu. Taped interviews were used by Wolff (1956) in his study of psychotherapists. This method seemed similarly appropriate for a psychological approach to the study of

professors' therapeutic attributes and their perspectives of the teaching-learning process.

Summary of Methods and Procedures of This Study

1. Jaspers' three characteristics of therapists, Poise, Humanitas and Passion were transposed into constructs of specific teacher behavior.

2. A questionnaire was prepared consisting of items representing these constructs. This questionnaire consisted of two scales in order to allow for differences in expectations of students in classes and subject areas. One scale enumerated the degree of each characteristic; the second, the extent to which each characteristic was assumed important by the raters.

3. Outstanding professors in ten different departments at the University of Michigan were identified on the basis of previously prepared and administered student evaluations of professors.

4. One "Other" professor who had not been cited as "Outstanding" was selected from each of these same departments so as to form a matched pair for comparison.

5. Taped interviews of all selected professors were conducted in order to determine such items as their goals, methods chosen and their perception of their particular classes.

6. From the information obtained in the taped interviews, a description of the class was transcribed onto the questionnaires for each professor in order to determine

the extent of congruity between the professors' intentions and their behavior.

7. Observers of classes and tape auditors were enlisted as aides to the study.

8. The observers and auditors received training regarding their roles as well as the use of the questionnaire for their rating of instructors.

9. Three different observers were scheduled to observe each professor's class toward the last quarter of the term.

10. After the interviews with each professor were concluded, tape auditors listened to the tapes and scored them on the questionnaire.

11. Questionnaires were administered to students in each professor's class.

12. As a further test of congruity, faculty members were requested to complete the questionnaires twice--once as they perceived themselves; the other as they estimated how their students would complete the questionnaires.

Hypotheses of This Study

1. Regardless of their field of instruction, professors selected by students as "Outstanding" will be differentiated from their "Other" colleagues in the attributes of Poise, Humanitas and Passion.

a. The results from their questionnaires completed by themselves as they perceive themselves will

place them higher in these attributes than their matched colleagues.

b. The results from their questionnaires completed by themselves as they estimate their students will view them will place them higher than their matched colleagues.

c. The results from their questionnaires completed by their students will place them higher in these attributes.

d. The results from their questionnaires completed by observers of their classes will rate them higher than their matched colleagues.

e. The results from their questionnaires completed by auditors of the taped interviews will place them higher in these attributes than their matched colleagues.

2. Regardless of their field of instruction, professors designated as "Outstanding" will be differentiated from their "Other" colleagues in the attribute of Congruity.

a. The results from their questionnaires completed by them as they perceive themselves will be more consistent with the results of the questionnaires completed by their students than will be the case for their "Other" colleagues.

b. The results from their questionnaires estimating students' views of them will be more consistent

with students' actual views than will be the case for their "Other" colleagues.

c. The results from the specific question regarding Congruity will be rated more highly by their students and by observers of their classes than will be the case for their "Other" colleagues.

d. The results from their self-perception questionnaires and estimate of student response questionnaires will be more consistent with their students' questionnaires in the rating of these dimensions in the scale of Importance.

CHAPTER II

REVIEW OF THE LITERATURE

There are four aspects of the literature which will be reviewed here. They pertain to the research on teacher effectiveness, the use of student evaluations of instructors, the choice of questionnaires for research in teacher effectiveness, and the relationship between education and therapy.

Symonds (1949) credits the earliest proposals for synthesizing education and psychotherapy to Oskar Pfister (1912) and Hans Zulliger (1921). Most of the earliest works cited by Symonds in this vein appear to be primarily interested in applying psychoanalytical principles to the education of primary and secondary school children, e.g., Schmidt (1925), Aichhorn (1935), Isaacs (1937), Burlingham and Anna Freud (1942), Anna Freud and Burlingham (1943), Hoffer (1945), Chadwick (1924) and (1928), Baruch (1939), Rank (1932), and Axline (1947).

Symonds notes that Cantor (1946) expressed his belief that although college instructors needed to utilize "progressive methods," it was important for them to delineate their separate roles as teachers and desist from assuming the function of therapists.

Symonds further pointed out that while Rogers (1942) was an early exponent of therapeutic attributes necessary to teaching, Rogers also cautioned against the possibility of the counselor maintaining a counseling relationship with a client while at the same time wielding the power of authority in the role of a teacher.

It is interesting to note that twenty-seven years later, Rogers (1969) removed this one obstacle of authority from a more complete synthesis of therapy and education by advocating a transfer of the locus of evaluation from the teacher to the student. In his proposal for a graduate program, for instance, Rogers recommended reliance

> . . . on self-criticism and self-evaluation, thus promoting true creativity. It is not however an insulated or autistic self-evaluation, for continuing feedback from other students and faculty gives a reality dimension to the student's appraisal of himself. Nevertheless, the student is the final judge, and can embark, if he chooses, on a course of study and action which everyone else regards as absurd.

In the early research into the application of therapeutic methods to teaching, Gross (1948) studied Cantor's (1946) non-directive method of instruction. The method was designed to generate student self-insight. Despite the fact that two entirely different types of classes were compared, Cantor's being entitled, "The Dynamics of Learning," and the other, "Principles of Economics," Gross concluded that Cantor's method influenced self-insight.

Faw (1949) corrected the flaw in Gross's study by comparing three discussion sections in the same course.

Three different methods implemented, however, by the same instructor, were compared. One section was a "student-centered discussion group," the second, "instructor-centered," and the third group experienced alternating methods. The results indicated the highest amount of student participation and the highest examination scores in the student-centered group, and the lowest participation and examination scores occurring in the instructor-centered group. Between the alternating and student-centered groups, the students in the student-centered group indicated a significant preference for that particular method. Students in the teacher-centered group were not asked their preference, "since (they) did not have an opportunity to experience student-centered methods, the students had no way of making comparisons."

In response to Anderson's (1959) conclusions that studies designating "teacher-centered" versus "student-centered"; "directive" versus "non-directive"; "authoritarian" versus "democratic" were "grossly oversimplified," Costin (1971) administered a Survey in order to correlate factors previously considered to be similar. He found low correlations not significant according to his predetermined criterion, between Student Involvement and Teacher Support as representative of student-centered behavior; Negative Affect correlated so low ("practically zero") with Teacher Control to question the correlating of these two factors to represent the "authoritarian" style. Costin concluded

that a Survey instrument describing specific dimensions of classroom behavior rather than oversimplified constructs of previous studies may very well be more helpful, "especially for studies involving cognitive or affective outcomes of college courses."

In a later study, Costin and Grush (1973) compared students' perceptions of classroom behavior, their descriptions of teachers' personality traits, and teachers' self-described traits; and they measured the discrepancies between the personality traits preferred by students and the traits of their teachers which they actually observed. In this case, as in the Isaacson, McKeachie and Milholland (1963) study, the "teachers" were graduate teaching assistants rather than instructors or professors of rank. Costin and Grush concluded that, "the greater the difference between students' preferences for and observations of their Teachers' Original Thinking, Personal Relations and Vigor, the less skilled they reported their teachers to be, and the more negative affect they perceived in the classroom." While the researchers concluded from their study that ratings of teacher effectiveness are valid and do not reflect the idiosyncracies of students' personality traits, they believe that their study might better have focused on personality traits as students perceived them in the classroom. The researchers also believed that had they asked the teachers to describe their own personality traits as they perceived them in the classroom as well as how they

thought their own students perceived these traits, more valuable information might have been obtained. They also concluded the following:

> . . . students' perceptions of classroom behavior were more closely related to their descriptions of the teachers' personality traits than to their own traits or to the teachers' self-described traits. Original thinking and trust and understanding in personal relations were especially prominent. Students' perceptions of these traits in their teachers were correlated significantly with all the factors of classroom behavior involved in the study except teacher control. Furthermore, the magnitude of these correlations was especially high, ranging from .55 to .80, and was significantly greater than the corresponding correlations involving the teachers' self-described traits.
>
> . . . of all dimensions of classroom behavior that were measured, skill probably comes the closest to what most teachers think of when they talk about effective teaching. It is important, therefore, to note that skill was more highly correlated with students' descriptions of ascendancy [self-confidence] (.67) than it was with the teachers' self-descriptions of that trait. Both students' descriptions of their teachers' vigor and the teachers' self-descriptions of that trait were correlated significantly . . . positively with teacher skill, student involvement and teacher support; and negatively with negative affect.

Another method for ascertaining teacher effectiveness was used by Chambers (1973). He studied college teachers and their effect on student creativity. Chambers concluded that creative scholars in psychology and chemistry credited their creative development to relationships with teachers in graduate rather than undergraduate programs in settings other than the classroom. Nevertheless, he found a significant difference between the "facilitating" and "inhibiting" teachers:

> In regard to classroom activities, the facilitating teachers more often conducted classes in an informal manner in which students were often asked to state their preferences for topics to be covered in class. . . . When students disagreed with them, they more often used this as a springboard for class discussion.
>
> Emphasis in the classroom was in helping students to understand principles. . . . Different, or unorthodox views were more often welcome. . . .
>
> The students viewed the facilitating teachers as more often personally interested in teaching and in their students and as having a high level of commitment to their field. The students' image of these teachers was of a hard-driving, dynamic individual. . . .

Chambers also reported that, "a number of creative teachers were described very apologetically by the students as 'quite bad' in the classroom but great outside of it."

Dowaliby and Schumer (1973) took up the suggestion of Cronbach and Snow (1969) that in attempting to discover superior methods, their adaptation to individual differences in students should be considered. Dowaliby and Schumer concluded from their study that "students sufficiently low in manifest anxiety would be assigned to or advised to join a student-centered section. Those sufficiently high in manifest anxiety would be assigned to or urged to join a teacher-centered section." They also concluded that,

> An implication of the perception data is that research endeavors examining different methods of instruction might benefit from a consideration of individual student perceptions of the instructional situation. This seems especially relevant to the present and similar studies where classroom structure is manipulated.

Jaegar and Freijo (1974) reported their experience using questionnaires to evaluate teacher effectiveness.

They concluded that, "student ratings were affected very little by a major rewording of items and that a substantial degree of linear independence existed between students' perceptions of the quality of an instructional process and their perceptions of the degree to which they benefitted from the instructional process."

A study by French-Lazorik (1974) isolated three factors of teaching characteristics (in contrast with personality characteristics of other studies) which carried the greatest weight in predicting students' general opinions of their instructors. These reported items are "Clarity of Expression," "Arousal of Student Interest," and "Stimulation or Motivation to Intellectual Activity." She reports that Langen and Sorenson (1963) found that personality characteristics are not necessary in the prediction of student overall ratings of teaching. French-Lazorik concludes:

> When asked what they consider the important characteristics of a good teacher, students may tend to generalize from those qualities that they have valued in other personal relationships to interactions with their college teachers. However, in evaluating their instructors, students give high overall ratings to some teachers who are not judged to be dynamic, enthusiastic, sympathetic, or friendly. They may be quiet, scholarly, and a little aloof, or they may have many other combinations of personality traits. (This is not to say that personality factors do not play a part in the methods a teacher chooses or is able to use successfully.)

Sullivan and Skanes (1974) attempted to find out if students were able to identify those instructors whom they also rated highly from those less successful. The authors

correlated instructor evaluations with student achievement on standardized final examinations. They concluded that,

> Academically successful and highly evaluated instructors were both "task oriented" and interest arousing. Unsuccessful but highly evaluated instructors attempted to arouse interest without being task oriented.

They also found that correlations were higher for experienced full-time faculty members than for inexperienced faculty members and also lowest for inexperienced part-time instructors, which leads to the hypothesis that research in teacher effectiveness cannot rely on extrapolating data from teaching assistants to experienced professors.

Domino (1971) found significant interactive effects between student academic orientation and teaching style, but that teaching style had no effect on original thinking. This data does not conflict with Chambers' study necessarily, because in this case, graduate students were not included. Domino concluded that teaching style alone cannot account for differences in student satisfaction or achievement.

Levinthal, Lansky and Andrews (1971) suggested that student evaluations currently in use inherently measure discrepancies between students' ideal concept of teacher behavior and what students perceive as actual behavior. They concluded that a direct assessment of students' values is necessary for interpreting teacher ratings.

Tolor (1973) distinguished between the evaluation of teachers by administrators, faculty peers, students and

parents in a secondary school. He found that administrators and faculty had the most similar perceptions, while faculty and parents agreed least. Regarding least effective teachers, students showed no significant agreement with any of the other rating groups. However, in the case of most effective teachers, there were significant correlations between administrators and faculty, between faculty and students and between parents and students. In accordance with other studies, Tolor concluded that the "characteristics of the rater" must be taken into account. He found in this case that students' class level and scholastic standing were significantly related to perceived teacher performance. Another finding in Tolor's study was that while all rating groups indicated that the ineffective teachers were characterized by poor teaching techniques, they were not considered by the raters to be lacking in expertise.

Baird (1973) assembled a framework for three different kinds of teaching styles, the Didactic, the Generalist, and the Researcher. The Didactic is described as valuing detailed and comprehensive knowledge. Factors similar to the didactic dimension were previously isolated by Coffman (1952), Deshpande, Webb, and Marks (1970), Gibb (1955), Isaacson, McKeachie, Milholland, Lin, Hofellar, Baerwaldt, and Zinn (1964), and Ryans (1960). The Generalist is described by Baird as interested in students applying knowledge to their own lives or to relevant, current issues

and broadening their perspectives. Baird refers to Astin (1967) and Deshpande et al. (1970) for dimensions similar to the Generalist construct. The Researcher, characterized by an interest in current research and contention in the field, is similarly defined in studies by Deshpande et al. (1970) and Yamamoto, Thomas and Karns (1969). The other dimensions of Baird's study included Emphasis on Student Response to the goals of the teacher similarly described by Deshpande et al. (1970), Hall (1970), Isaacson, McKeachie and Milholland (1963) and Isaacson et al. (1964); Ambiguity of instructor's expectations, demands or basis of evaluation (Baird, 1969; Deshpande et al., 1970; and Solomon et al., 1966); with the sixth dimension labeled Warmth of teacher toward students, his friendliness, informality and supportiveness (Coffman, 1952; Creager, 1950; Gibb, 1955; Hall, 1970; Solomon et al., 1966).

These six dimensions were correlated with students' evaluations of instructors, general sense of progress, satisfaction with college, and achievement. Baird found the highest positive correlations between the ratings of instructors and the Generalist index; while students who experienced Ambiguity felt they had not been well prepared, nor did they feel that they had received good instruction.

In addition to the hard core research, there are also several volumes dealing with theory and philosophy of psychotherapeutic models applied to teaching. Earl Kelley (1947) speaks of learning in psychotherapeutic terms,

". . . The whole process is growth in its widest meaning; growth which enables the whole organism to become more competent to cope with life." Cantor (1946) writes about learning in the Freudian terms of Resistance, Ambivalence, Projection and Identification." Combs and Snygg (1959) speak of the teacher as one would describe the therapist: "Effective teaching requires the sensitive use of a human personality as an instrument for assisting other people to new experience and new discovery." They continue:

> . . . It seems clear that an atmosphere conducive to effective learning must be one as free from threat as can be. This requires of the teacher a sensitivity to his own relationships with students and of his students with each other, . . . Great teachers have the capacity for creating situations in which threats remain at a minimum and students are encouraged to drop their defenses and engage in the exciting business of growth and change. . . . The good teaching atmosphere should be accepting. Acceptance . . . has to do with admission of data to consideration. . . . Acceptance is understanding without judging. . . . The task of teaching is to help people move, change, and grow, and this is an active process encouraged by the kind of accepting atmosphere we have been talking about.

Combs and Snygg's description of the ideal teacher is very similar to the highly evaluated "Generalist" described by Baird. If the instructor is interested in students refining their values, enlarging their perspectives and making practical application of their knowledge and developing ethics, then teachers need to "be more concerned with experience and less with telling, with questions and problems rather than answers and dicta. They will see their own roles as freeing and stimulating. . . . " (Combs and Snygg).

Another characteristic of Baird's which he reported as negatively valenced in his study, was that of Ambiguity. Combs and Snygg theorize about this analogously: "When teacher values are clear, teacher behavior is similarly clear and direct. When teacher purposes are fuzzy, confused, or vague the teacher's behavior is likewise confused and inexact." Combs and Snygg regard ineffectiveness in teaching as unrelated to lack of expertise. This view is similar to the findings in Tolor's study:

> When teachers are frustrated and tense, it is almost never because they do not have a grasp of their subject matter. When teachers fail it is far more likely to be the result of a lack of clarity in their own perceptions about what is important. (Combs and Snygg)

The therapeutic attribute of listening and empathizing is also transposed to the teaching milieu by Combs and Snygg: "Good teaching requires a sensitivity to what students are expressing and this requires accurate hearing of what others are trying to convey."

Besides the importance of teachers' perceptions, Combs and Snygg emphasize the need to take into account students' perceptions in order to make a true assessment of the congruity between the teachers' intentions and their behavior. This consideration is relevant to the present study:

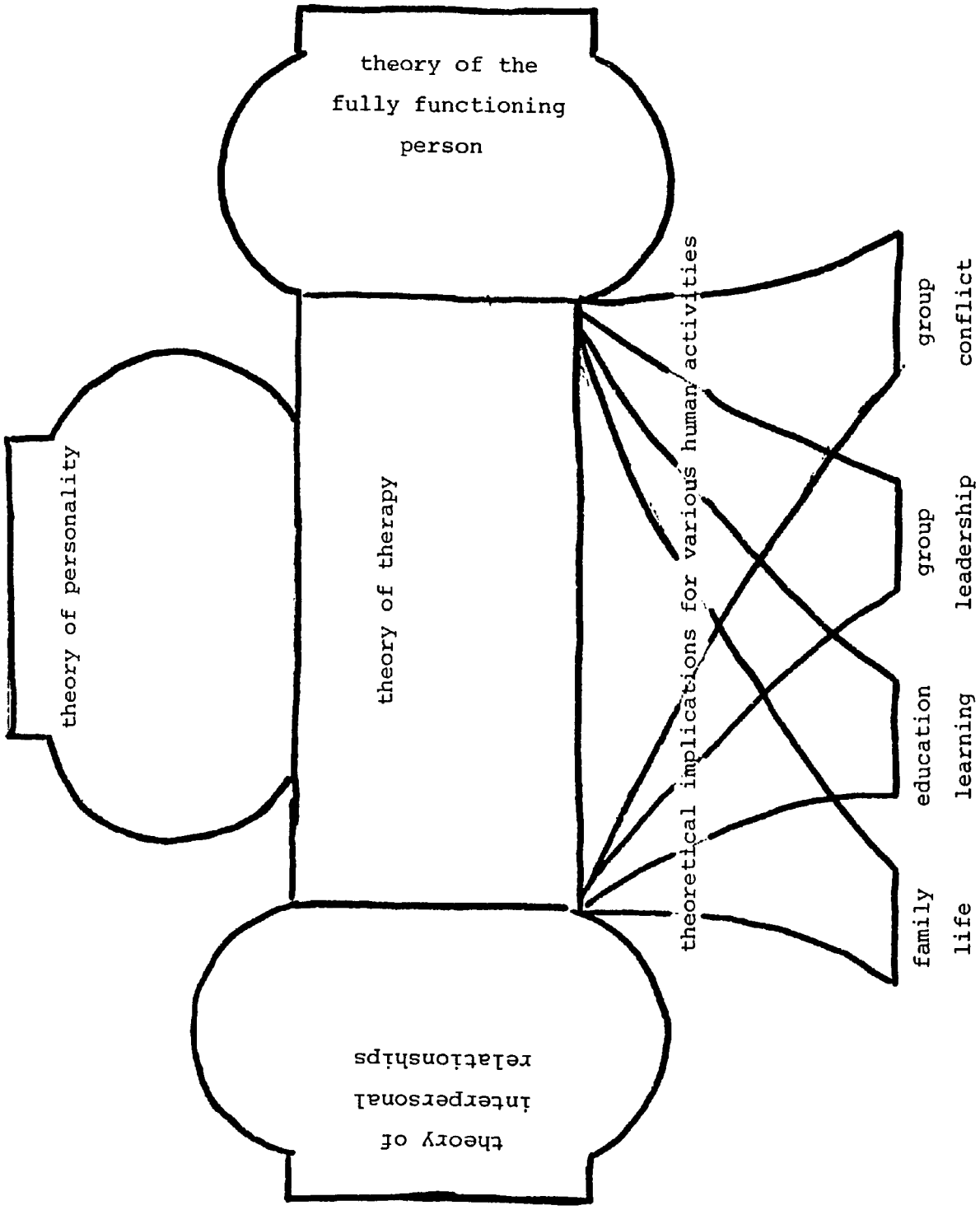
> The genius of good teaching lies in the ability to challenge students without threatening them. To do this effectively means that teachers must be sensitive to the impact upon their charges of what they do and say, for the distinction between threat and challenge lies not in what the teacher <u>thinks</u> he is doing, but in what the students <u>perceive</u> him to be doing.

Carl Rogers (1951, 1969) has undoubtedly made the greatest contribution to the literature concerning the subject of the fusion of therapy and education. It is, in fact, his philosophy of education which has prompted the research in this present study. Out of his vast professional experiences, mutually shared with colleagues, Rogers formulated his theories of personality and interpersonal relationships within the structure of his client-centered approach to therapy. Figure 1 from Koch (1955) illustrates the interconnecting relationships Rogers formulated between his theory of therapy to the outlying areas of a theory of personality, a theory of the fully functioning person, a theory of interpersonal relationships and, finally, theoretical implications for various human activities which include education and learning. Rogers cautioned that "the possibility of magnification of error in the theory increases as one goes out from the center. By and large there is less evidence available in these peripheral areas than in the center." (Koch, 1955) It is the purpose of this present study to determine if and to what extent Rogers' theory holds true in the peripheral area of education and learning.

In his book, Client-Centered Therapy (1951), Rogers devoted one chapter to education, "Student-Centered Teaching." He later expanded his interest in learning to an entire volume, Freedom to Learn (1969). Rogers'

FIGURE 1

Rogers' Formulation of Interconnecting Relationships (from Koch, 1955).



view concerning parallel outcomes for clients in therapy and students in the classroom are dramatized below:

Outcomes of Therapy (Selected from Koch)	Outcomes for the Student (From Rogers, 1951)
1. The client is more congruent, more open to his experience, less defensive.	. . . the goal of democratic education is to assist students to become individuals;
2. He is consequently more realistic, objective, extensional in his perceptions.	who are able to take self-initiated action and to be responsible for these actions;
3. He is consequently more effective in problem solving.	who are capable of intelligent choice and self-direction;
4. As a result of the increased congruence of self and experience his vulnerability to threat is reduced.	who are critical learners, able to evaluate the contribution made by others;
5. He has an increased degree of positive self-regard.	who have acquired knowledge relevant to the solution of problems;
6. He perceives the locus of evaluation and the locus of choice as residing within himself.	who, even more importantly, are able to adapt flexibly and intelligently to new problem situations;
7. As a result (of 5 and 6) he feels more confident and more self-directing.	who have internalized an adaptive mode of approach to problems, utilizing all pertinent experience freely and creatively;
8. As a result (of 1 and 6) his values are determined by an organismic valuing process.	who are able to cooperate effectively with others in these various activities;
9. As a consequence (of 1 and 2) he perceives others more realistically and accurately.	who work, not for the approval of others, but in terms of their own socialized purposes.
10. He experiences more acceptance of others, as a consequence of less need for distortion of his perceptions of them.	
11. As a consequence (of 1, 2 and 3) his behavior is more creative, more uniquely adaptive to each new situation, and each new problem, more fully expressive of his own purposes and values.	

It is postulated in this present study that if we accept Rogers' model of paired outcomes for clients and students, then it ought to follow that the therapists and teachers responsible for the relationships which bring about these desired changes, also share similar characteristics which need to be defined and tested.

Rogers believes that the method of student-centered learning will more likely produce the desired outcomes listed. Much previously cited has already been conducted in this area. One aspect yet to be fully explored is the implication of a study by Fiedler (1950) and discussed by Rogers (1951). Fiedler studied the characteristics of "expert" therapists and found that they were closer to the "ideal" concept of therapist than their "nonexpert" counterparts; and further, that this similarity was as great or greater than that between "expert" and "nonexpert" therapists of the same orientations. The implication of Fiedler's findings relevant to this present study is that "effective" teachers are more similar in certain therapeutic attributes regardless of method or subject than their "less effective" counterparts.

CHAPTER III

METHODS AND PROCEDURES

The methods and procedures conducted in this study included the development of the questionnaire and the testing of the questionnaire for validity and reliability; the selection of faculty from various departments; the method of the taped interviews; and the utilization of observers and tape auditors.

Development of the Questionnaire

The first step in the development of the questionnaire was to translate the therapeutic characteristics described by Jaspers (Chessick, 1974) into assessable traits appropriate to teaching. They are as follows:

A. Poise (perspective)

1. The instructor appears to be comfortable in role as teacher.
2. The instructor remains calm when students ask questions.
3. The instructor appears to be "professional."
4. The instructor appears to be "experienced."
5. The instructor presents subject matter in relation to the context of the larger world.
6. The instructor relates material to closely associated subjects.
7. The instructor relates material to other subjects.

8. The instructor presents material in logical sequence.

9. The instructor assumes responsibility for the class--keeps it on track--but allows for student input.

10. The instructor distinguishes between what is known, to what extent it is known, and the unknown (yet to be discovered).

B. Humanitas

1. The instructor appears to be open to considering ideas which conflict with each other and which conflict with his.

2. The instructor appears to be open to considering new ideas.

3. The instructor encourages, acknowledges and incorporates student participation.

4. The instructor understands what it is like to be a student.

5. The instructor is courteous to students.

6. The instructor is interested in the pursuit of truth.

7. The instructor is understanding of student concerns.

8. The instructor understands students' questions and makes appropriate responses.

C. Passion

1. The instructor appears to be invested in his subject and in teaching.

2. The instructor appears to be involved in his subject and in teaching.

3. The instructor appears to be energetic.

4. The classroom experience is energizing--students appear to get caught up in the classroom experience.

5. Students appear to be inspired to pursue classroom discussions and to increase their learning in this subject.

These characteristics of teacher behavior for the three categories of Poise, Humanitas and Passion were transcribed to a questionnaire consisting of two different scales. One scale was designed to assess the degree to which each question pertained to the instructor. The other scale was structured in order to ascertain the importance ascribed by the rater to that characteristic for the particular instructor in that particular class.

The rationale for the second scale of "Importance" is as follows: In the therapeutic relationship, the "appropriate response" of the therapist to the client is highly valenced in terms of its correctness in light of the substantive, situational and relationship factors at the time. Analogously, in teaching, it is hypothesized that the "Outstanding" professor is more likely to exhibit "appropriate behaviors" for his particular teaching milieu than will the "Other" professors. For instance, students may feel that interaction between the professor and themselves to be more appropriate in an educational psychology class than in a statistics course. It would be important in assessing the effectiveness of the instructor to determine not only the "Degree" to which he possessed that characteristic in that particular class, but also the extent to which that attribute was considered an ideal quality. In that way, an instructor might be scored low in one characteristic, but he would not be faulted as greatly if it were also ascertained that that particular quality was not

necessarily important. An example of "appropriateness" is the case of one professor in this study who happened to have been an "Outstanding" one. He volunteered how he took into account in his preparation for class whether or not the class was undergraduate or advanced, majors in the field, or students fulfilling cognate requirements.

The scales for both the Degree and the Importance were set at five points. In the case of Degree, the five choices of "very characteristic," "characteristic," "sometimes," "hardly at all," and "never" appeared to cover the range of possibilities for the kind of information intended to be gathered. For Importance, the five choices of "very important," "important," "slightly important," "neutral," and "not important at all" appeared to provide the range of information necessary for this dimension. (See Appendix 1 for a copy of the questionnaire.)

Besides the three characteristics of Poise, Humanitas and Passion, the questionnaire included one question at the end for the purpose of determining one aspect of Congruity. It had originally been proposed that the answers to the three questions in the interview format labeled "General Statement" (see Appendix 2) concerning a description of the goals and their implementation in each class be transcribed as three separate questions for the determination of Congruity. However, as the instructors responded to these "General Statement" questions, their narratives more closely approximated, indeed, a "General Statement"; and so

it was therefore decided that rather than attempt to break down the statement arbitrarily into three distinct questions, that one descriptive statement ought to be transcribed from these tapes.

The purpose of the Congruity question (question number 30 on the questionnaire) was to determine the instructor's view of the class and to ascertain how closely the students held the same perspective of that class. It was hypothesized that the perceptions of the "Outstanding" instructors would more closely approximate their students' ratings than would be the case for the "Other" instructors. In order to provide a more sensitive measure to this unique question, instead of the five point scale chosen for the "Characteristic" questions, an eight point scale was used. (See Appendix 1, question 30.)

Procedure to Establish Validity and Reliability of the Questionnaire

In order to establish the face validity of the questionnaire, it was administered to an educational psychology class not included in the study. Students were asked to circle the parts of the questions or the questions in total which were unclear, ambiguous, or difficult to answer. Comments were also invited. These student responses were carefully considered and in consultation with the observers and tape auditors, a revision of the questionnaire was made.

In order to assess the reliability of the questionnaire, it was administered to another education class not

included in the study at the beginning and then again at the end of its two and one half hour session. This test-retest procedure provided the opportunity to calculate statistically the reliability of the questionnaire.

Method of Department Selection

All departments and schools (heretofore referred to as departments) at the University of Michigan were canvassed in order to ascertain which ones utilized student evaluation forms in which requested responses are weighted choices rather than narrative ones. These departments were then grouped into five different learning areas--the arts, pure sciences, applied sciences, social sciences and linguistics. Within each group, two departments were to be randomly selected and the chairmen or deans were then to be contacted about the possibility of their faculty participating in the study.

Because there is a small number of departments in the arts and linguistics groups and an even smaller number within these groups utilizing the evaluations appropriate for this study, these two groups were severely limited as possible participants in this study. The choices narrowed down to one in each of these two groups; one declined to participate; the other consisted of two willing faculty members who appeared to be similarly "Outstanding" and therefore an inappropriate match. One department in the arts group was newly incorporated into a participating

school in another group and by random choice one participant happens to represent that discipline in this study.

After the first round selection of departments, places still unfilled were replaced by a second group of departments randomly chosen as the first. From this second group, a total of ten different cooperating departments was achieved.

Method of Selection of Faculty Participants

In each department, all scores from the question on student evaluations pertaining to "overall instructor effectivensss" or all average scores from the questions pertaining to instructor effectiveness were rank ordered for all instructors. From this rank ordering, a natural hiatus in distance was ascertained which apparently separated the "Outstanding" professors from the "Other" professors. The "Outstanding" instructors were placed in one pool, and the "Other," which included superior, average and below average instructors as rated on these questions in their evaluations, were placed in the second pool. One instructor from each pool was then randomly selected and contacted for inclusion in the study.

In effect, then, there are three kinds of pairings in this study which are designated as the "Outstanding" and "Other" unit. These units of paired professors consist of either 1) outstanding and superior; or 2) outstanding and average; or 3) outstanding and below average.

Description of Taped Interviews

Each professor in the study was interviewed and the entire interview was recorded on audiotape. The first four questions (see Appendix 2, "Interview Format") were intended to elicit information which could be scored on the questionnaire by a tape auditor. The last three questions (Appendix 2, "General Statement") were designed to elicit information about the instructors' description of their classes. This "General Statement" was then transcribed to the questionnaires used in scoring each professor. The questions and the kind of information they were designed to obtain are described in the "Interview Format."

Use of the Questionnaires

The questionnaires, individualized for each professor by the last question as described above, were administered in most cases by the instructors to their own classes. At the time of the interview, the instructor was asked to select for the study the class he was currently teaching which best represented his area of keenest interest. His remarks in the interview were addressed to the description of that particular class. The administration of these questionnaires occurred toward the end of the term, in most cases.

The tape auditors and observers also used these individualized questionnaires to score each professor. It was planned that three observations be made by three different observers for each professor. In a great majority of

cases, this was accomplished, with only a very few cases limited to two observations.

Each professor was asked to complete each questionnaire individualized for himself twice. He was asked to do this once according to his own perception of self; and again, in percentage terms, as to how he estimated his students would respond to the questionnaire regarding him.

Description of Observers and Tape Auditors

Seven observers and two tape auditors were enlisted as objective aides to the study. They all participated in training sessions regarding their responsibilities which included the use of the questionnaires for reporting; and, in the case of observers, their direct observations of classes. In the case of the auditors, their training focused on how to listen for relevant information and extract it from the taped interviews of all professors. The observers and auditors included five teaching assistants in educational psychology and two teaching assistants from the department of journalism.

These are the methods and procedures which were followed in collecting the information for this study. The next chapter will provide in detail the analyses which were performed on this data.

CHAPTER IV

ANALYSES OF DATA

The analyses of data is presented in five parts.

Part I presents the pre and post data from the "test" class which determined the reliability of the questionnaire. Table 1 represents the comparison between pre and post mean scores for each question on the Degree of Characteristic scale. Table 2 represents the comparison between pre and post mean scores for each question on the Importance scale. Table 3 represents the correlation coefficients of pre and post mean scores for each question on the questionnaire after elimination of "unreliable" questions determined by the previous analyses in Tables 1 and 2. Table 3 also provides correlation coefficient scores and their significance for the average question for the Degree of Characteristic scale, for the Importance scale, and for the average score of all questions on the questionnaire.

Part II lists the data collected for the study proper (thus not including the data collected to test the validity and reliability of the questionnaire).

Part III presents the data of the factor analysis which was used for determining the presence of the three factors, Poise, Humanitas and Passion in the questionnaire.

Subdimensions for each factor were further defined by factor analysis and they are also presented.

Part IV presents the data of Student ratings in the following dimensions and subdimensions:

A. Poise

1. Expertise

2. Organization

B. Humanitas

1. Relationship to Students

2. Openmindedness to Ideas

C. Passion

1. Energy Involved with Subject

2. Expansiveness and Inspiration

D. Congruity

For each of these dimensions and subdimensions, the following analyses of student data are presented:

A. A comparison of each pair of "Outstanding" and "Other" professors in every department (Tables 6-15).

B. A summary of Tables 6-15 in a comparison of all "Outstanding" and all "Other" professors in Degree of Characteristics and Congruity (Table 16).

C. A summary of Tables 6-15 by a comparison of the classes of all "Outstanding" and all "Other" professors in student ratings of Importance of characteristics (Table 17).

Part V presents the analysis of data comparing student, professor, observer and tape data. This part is divided into two sections, Section A which presents data specifically related to the hypotheses of this study, and

Section B which presents analyses of data which went beyond the original hypotheses of this study, but which were considered important and relevant. These sections are as follows:

A. Analyses of data specifically relevant to the hypotheses. These include:

   1. Faculty Self-Perceptions comparing "Outstanding" and "Other" professors (Table 18).

   2. Faculty Estimates of Student Response comparing "Outstanding" and "Other" professors (Table 19).

   3. Observer data comparing "Outstanding" and "Other" professors.

   4. Tape data comparing "Outstanding" and "Other" professors.

   5. Student data compared with Faculty Estimate of Student Response for "Outstanding" professors.

   6. Student data comparing Faculty Estimate of Student Response for "Other" professors.

   7. Student data compared with Faculty Self-Perceptions for "Outstanding" professors.

   8. Student data and Faculty Self-Perceptions for "Other" professors.

B. Analyses of data beyond the hypotheses. These include:

   1. Comparison of observer and tape data for "Outstanding" professors.

   2. Comparison of observer and tape data for "Other" professors.

   3. Comparison of observer and tape data for all professors.

   4. Comparison of student and tape data for "Outstanding" professors.

   5. Comparison of student and tape data for "Other" professors.

6. Comparison of student and tape data for all professors.

7. Comparison of student and observer data for "Outstanding" professors.

8. Comparison of student and observer data for "Other" professors.

9. Comparison of student and observer data for all professors.

10. Comparison of tape and faculty estimates for "Outstanding" professors.

11. Comparison of tape and faculty estimates for "Other" professors.

12. Comparison of tape and faculty estimates for all.

13. Comparison of tape and faculty self-perceptions for "Outstanding" professors.

14. Comparison of tape and faculty self-perceptions for "Other" professors.

15. Comparison of tape and faculty self-perceptions for all professors.

16. Comparison of observer and faculty estimates for "Outstanding" professors.

17. Comparison of observer and faculty estimates for "Other" professors.

18. Comparison of observer and faculty estimates for all professors.

19. Comparison of observer and faculty self-perceptions of "Outstanding" professors.

20. Comparison of observer and faculty self-perceptions for "Other" professors.

21. Comparison of observer and faculty self-perceptions for all professors.

22. Comparison of faculty estimates and faculty self-perceptions for "Outstanding" professors.

23. Comparison of faculty estimates and faculty self-perceptions for "Other" professors.

24. Comparison of faculty estimates and faculty self-perceptions for all professors.

25. Comparison of student data and faculty estimates for all professors.

26. Comparison of student data and faculty self-perceptions for all professors.

Part I. The Determination of the Reliability of the Questionnaire

Pre and Post Questionnaires (Tables 1 and 2)

After the procedure which refined the validity of the questionnaire (see p. 36), a test-retest procedure was conducted in order to determine the reliability of the questionnaire. The questionnaire was administered late in the term to a class in which the students were familiar with the professor. It was administered before and after a usual two and one half hour session.

Table 1 represents the comparison between pre and post mean scores for each question on the Degree of Characteristic scale. Table 2 represents the comparison between pre and post mean scores for each question on the Importance scale. In Tables 1 and 2, those questions which attained a significance level of .10 or less were considered unreliable and were eliminated from subsequent data analysis. Those questions which were found to be significantly unreliable in Importance only (Table 2) were retained, however, if they were found to be significantly reliable as to Degree of Characteristic. A comparison of Tables 1 and 2 illustrates that questions 6, 7 and 9 were

found to be significantly unreliable in both scales (Characteristic and Importance). Questions 14, 15, 21 and 22 were also considered unreliable in the Degree scale. Question 16 was unreliable in the Importance scale only and was therefore retained. As a result of the data in Tables 1 and 2, Questions 6, 7, 9, 14, 15, 21 and 22 were eliminated from further analyses.

In Tables 1 and 2 the significance level of 0.10 or less was considered because it represented a more rigorous test of the reliability of questions than would significance levels of .05 or .01. In this case, significant differences between the pre and post scores were interpreted as indicators of the unreliability of questions.

In subsequent analyses, unless otherwise indicated, where differences are indicators of the significance of data, the levels of .05 or less or .01 or less will usually be cited.

The Congruity question (Question 30) was designed to be different for each professor and was therefore not tested for reliability in these tests. The reliability of this question is best determined by examining the data of professors' own self-perception of this question and how they scored it.

TABLE 1

DEGREE OF CHARACTERISTIC

Comparison of pre and post mean scores by question and significance of pairwise t-test of mean differences

Question No.	N	Pre Mean	Post Mean	T-Stat
1.	40	1.3000	1.3000	0.
2.	40	1.8000	1.7500	.46677
3.	40	1.0750	1.1500	-1.1381
4.	39*	1.5128	1.6923	-1.6404
5.	39*	1.8205	1.9487	-1.1519
6.	40	2.4750	2.1500	2.6898**
7.	40	3.4500	2.8500	5.6488**
8.	40	1.6500	1.7250	- .82879
9.	40	2.4500	2.2500	2.0817**
10.	40	1.6500	1.5750	.59514
11.	39*	1.7692	1.5641	1.6700
12.	39*	1.5385	1.3590	1.6404
13.	39*	1.9744	1.9231	.52957
14.	40	1.1000	1.2500	-2.2234**
15.	39*	2.5897	2.4103	2.0163**
16.	40	1.1750	1.1750	0.
17.	40	1.5250	1.3750	1.6369
18.	40	1.3750	1.3750	0.
19.	40	1.9750	1.8000	1.6394
20.	40	1.7750	1.6500	1.2201
21.	40	1.2750	1.1750	2.0817**
22.	40	2.0000	1.7000	2.3988**
23.	40	2.7500	2.6500	.81303
24.	40	1.6250	1.6000	.19758
25.	40	1.7000	1.5500	1.6369
26.	40	1.6500	1.6750	- .25516
27.	40	2.2250	2.1250	1.1597
28.	40	1.6500	1.6000	.52969
29.	40	1.7500	1.7250	.27412

*Differences in the N are accounted for by respondents' failure to answer both pre and post questions thereby eliminating the possibility for comparison.

**Questions determined to be unreliable, that is, where pre and post scores were significantly different at the level of .10 or less and therefore removed from subsequent data analysis.

TABLE 2
IMPORTANCE OF CHARACTERISTIC

Comparison of pre and post mean scores by question and significance of pairwise t-test of mean differences

Question No.	N	Pre Mean	Post Mean	T-Stat
1.	40	1.5000	1.4500	.57248
2.	40	1.5750	1.6250	- .44270
3.	40	1.3500	1.5000	-1.2898
4.	40	1.8500	1.7000	1.2898
5.	40	1.5750	1.7250	-1.6369
6.	40	2.0250	1.8500	1.8623**
7.	40	3.0750	2.7250	2.3333**
8.	39*	1.7436	1.7692	- .32950
9.	40	2.0750	1.8250	2.5081**
10.	40	1.8250	1.7750	.32960
11.	39*	1.9744	1.8205	1.2901
12.	40	1.6000	1.5250	.68365
13.	40	1.8000	1.6500	1.1825
14.	40	1.4000	1.4500	- .44270
15.	40	1.9750	2.0750	-1.4327
16.	40	1.2500	1.4500	-2.2433***
17.	40	1.5250	1.4750	.52969
18.	40	1.3000	1.4500	-1.6369
19.	40	1.5750	1.5500	.27412
20.	40	1.5500	1.4500	1.0710
21.	40	1.4500	1.4000	.81303
22.	40	2.1000	1.9500	1.5246
23.	40	2.0750	2.0500	.23966
24.	40	1.5000	1.5750	- .72326
25.	40	1.5500	1.6500	- .94147
26.	40	1.4500	1.5750	-1.5328
27.	40	2.2750	2.1750	1.0710
28.	40	1.4500	1.5250	- .72326
29.	40	1.7000	1.7500	- .62765

*Differences in the N are accounted for by respondents' failure to answer both pre and post questions thereby eliminating the possibility for comparison.

**Questions determined to be unreliable, that is, where pre and post scores were significantly different at the level of .10 or less in both Degree of Characteristic (see Table 1) as well as Importance of Characteristic were eliminated from the study.

***Questions determined to be unreliable at the significance level of .10 or less in only Importance of Characteristic were retained. Students' answers were assumed to be reliable concerning their perception of Degree of Characteristic, or not, and were eliminated accordingly. However, differences in assessment of Importance were considered acceptable when the Characteristic paired with such an item was otherwise reliable.

Correlation Coefficients of Pre and Post Tests (Table 3)

After the elimination of unreliable questions 6, 7, 9, 14, 15, 21 and 22, correlation coefficients were determined on the pre and post data by question. The results are indicated in Table 3. Correlation Coefficients were used in Table 3 because this statistic could be used to determine the reliability of each question as well as the reliability of the average question in each scale and the overall reliability of all the questions remaining on the questionnaire. The data in Table 3 indicates that the average question on the Degree scale, the average question on the Importance scale and the average question on the entire questionnaire, in fact, was reliable above the significance level of .01.

Part II. Listing of Data Collected for the Study Proper

All data gathered for the study proper--that is, all data excluding that gathered for "test" classes in determining validity and reliability of the questionnaire--is listed in Table 4. The column headings are as follows:

Col. 1--"Prof. No." = Professor designated by number

Col. 2--"Self-Percept." = Professor's self-perception questionnaire

Col. 3--"Prof. Estim. of Student" = Professor's Estimate of Student Response

Col. 4--"Obs." = Observer data for each professor

Col. 5--"Student" = Number of questionnaires received from students

TABLE 3

CORRELATION COEFFICIENTS BY QUESTION FOR DEGREE OF CHARACTERISTIC AND IMPORTANCE ON PRE AND POST TESTS

Question No.	Degree of Characteristic	Importance
1.	.6131**	.0796
2.	.2871	.5124**
3.	.1829	.5863**
4.	.3660*	.0830
5.	.4483**	.6583**
8.	.8526**	.7292**
10.	.5361**	.7994**
11.	.5890**	.7021**
12.	.7686	.8325**
13.	.6651**	.2797
16.	.4430**	.1866
17.	.6852**	.6027**
18.	.6079**	.4445**
19.	.5874**	.4905**
20.	.2766	.5735**
23.	.3814	.5414**
24.	.6766**	.5158**
25.	.4219**	.4301**
26.	.6032**	.6142**
27.	.4756**	.5124**
28.	.6224**	.4963**
29.	.6791**	.6492**
	Average of Degree = .5350**	Average of Importance = .5145

Mean of Average of Degree and Importance Combined = .5248**

*R @ .9500 = .3246
**R @ .9900 = .4282

N = 37
DF = 35

Col. 6--"Student Enroll" = Number of students enrolled in each professor's class

Col. 6--"Tape" = Tape data for each professor

Questionnaires were administered to students the last week of the term. The University was closed the Monday of that last week because of a snowstorm. Some professors therefore preferred that their students take home the questionnaires and in some cases, mail them in. Many other participating professors took time from their class schedules for these questionnaires to be administered, despite the loss of a teaching day. In one case, one professor gave the questionnaire to a similar class the following semester after some weeks had passed.

Part III. Factor Analysis

Correlation coefficients on the questions in the questionnaire showed the existence of three factors, Poise, Humanitas and Passion. A factor analysis and a rotated factor analysis were performed. These three factors as well as two subfactors in each of the three main dimensions were defined. These are labeled in Table 5 with the questions appropriate to each dimension. Question 3 did not group into factor scores and was therefore eliminated at this point.

TABLE 4

LIST OF DATA GATHERED FOR THE STUDY OF "OUTSTANDING" AND "OTHER" PROFESSORS

Prof. No.	Self Percept.	Prof. Estim. of Student	Obs.	Student	Student Enroll.	Tape
1	1	1	3	19	70	1
2	1	1	3	22	150	1
3	1	1	2	19	25	1
4	1	1	3	9	36	1
5	1	1	2	3	6	1
6	1	1	2	26	40	1
7	1	1	3	6	9	1
8	1	1	2	30	37	1
9	1	1	3	17	22	1
10	1	1	3	34	50	1
11	1	1	3	84*	120	1
12	1	1	3	3	5	1
13	1	1	3	13	19	1
14	1	1	3	14	17	1
15	1	1	3	18	20	1
16	1	1	2	5	6	1
17	1	1	3	4	6	1
18	1	1	3	3	20	1
19	1	1	2	38	42	1
20	1	1	3	18	30	1

*In this particular case, the number of student data represented 22% of the total cases. For the factor analysis, 38 randomly chosen cases from this professor's student questionnaires were selected. This number was equal to the next highest professor's student data. All subsequent data reported includes all 84 cases for this professor.

TABLE 5

FACTORS ISOLATED BY ROTATION

	Factor Loadings
POISE	
1. Expertise	
Question 1. The instructor appears comfortable in role as teacher.	1.0289
Question 2. The instructor is a masterful teacher of this subject.	.89334
Question 4. The instructor appears to have had a good deal of experience.	.60762
2. Organization	
Question 13. The instructor assumes the responsibility for planning and maintaining the learning activities for students in this class.	.70559
Question 23. The instructor makes clear which aspects of the subject are well established, which are known only to some degree, and which are in need of further development.	.82143
HUMANITAS	
1. Relationship to Students	
Question 16. The instructor encourages student participation.	.24744
Question 17. The instructor is supportive to student participation when it occurs.	.62302
Question 18. The instructor appears to be able to empathize with concerns of students.	1.0311
Question 19. The instructor appears to understand clearly the questions students ask.	.50887
Question 20. The instructor responds to the intellectual and emotional needs of students.	.72664
Question 25. The instructor appears to understand what it is like to be a student.	1.0881

TABLE 5 (Continued)

	Factor Loadings
2. Openmindedness to Ideas	
Question 10. The instructor is interested in considering ideas which conflict with each other.	.99818
Question 11. The instructor is interested in considering ideas which conflict with his own ideas.	.87194
Question 12. The instructor is interested in considering ideas which are new to him.	.60494
PASSION	
1. Energy expended in involvement with subject	
Question 24. The instructor appears to have spent a good deal of time and energy in learning his subject.	.62334
Question 26. The instructor appears to be ongoingly involved in learning more about his subject or keeping abreast of new knowledge about his subject.	.65662
Question 27. The instructor is energetic.	.70626*
2. Vigorous involvement with the larger world and dynamic inspiration of students	
Question 5. The instructor relates his subject matter to issues in the larger world beyond the university.	.48705
Question 8. The instructor refers the student to supplementary readings and/or other materials.	.48705
Question 28. The instructor creates student learning during the course.	.32438
Question 29. The instructor inspires the students to pursue learning beyond the course requirements.	.69072

*This is a scaled factor loading rather than a rotated factor loading. This question was grouped with Questions 24 and 26 in the scaled factor loadings, but not with the rotated factor loadings. However, this question seemed to be appropriate to this group and was therefore included.

Part IV. Comparison of "Outstanding" and "Other" Professors

Student Data

Student data was analyzed in the dimensions and subdimensions of Poise, Humanitas and Passion in order to test the following original hypothesis:

> 1c. Regardless of their field of instruction, professors selected by students as "Outstanding" will be differentiated from their "Other" colleagues in the attributes of Poise, Humanitas and Passion. The results from their questionnaires completed by their students will place them higher in these attributes.

The Congruity question (Question 30) was also analyzed on student data in order to test this further hypothesis:

> 2c. Regardless of their field of instruction, professors designated as "Outstanding" will be differentiated from their "Other" colleagues in the attribute of Congruity. The results from the specific question regarding Congruity will be rated more highly by their students [and by observers of their classes] than will be the case for their "Other" colleagues.

The Congruity question (Question 30) is the perspective of the class presented by each professor in the taped interview.

Student's t Statistic analyzed the dimensions and subdimensions of Poise, Humanitas and Passion in the Degree of Characteristic scale (labeled CHARACTERISTIC in the tables) as well as in the Importance scale. ALL DEGREE refers to the total scores for the Degree of Characteristic on the above dimensions, and ALL IMPORTANCE refers to the total of the Importance scale scores. CONGRUITY refers to

the Congruity Question 30. "N" refers to the number of student responses for each professor, "Outstanding" and "Other," respectively.

Tables 6-15 represent a comparison of the mean scores of each pair of "Outstanding" and "Other" professors in every department. Table 16 summarizes tables 6-15 by comparing all "Outstanding" and all "Other" professors in Degree of Characteristics in the dimensions of Poise, Humanitas and Passion and in the Congruity question. Table 17 summarizes Tables 6-15 by comparing the students' rating of the Importance of these dimensions in all of the "Outstanding" professors' classes and in all of the "Other" professors' classes.

In the tables which follow, the signs "<" and ">" are used with two meanings. When comparing instructors, the sign should be interpreted as meaning "rated higher" (>) or "rated lower" (<). When the sign is used with p, then its meaning is the conventional "less than" (<). Further, in all subsequent data analyses the significance levels are presented as follows:

$p = .056-.059+$

$p \leq .05*$

$p \leq .01**$

$p \leq .001***$

TABLE 6

STUDENT'S t STATISTIC COMPARING STUDENT RATINGS OF PROFESSOR 1 (OUTSTANDING) AND PROFESSOR 2 (OTHER) IN THE DIMENSIONS OF CHARACTERISTICS, IMPORTANCE OF CHARACTERISTICS AND CONGRUITY

Dimension	Characteristic	Importance
POISE	1 > 2 = .18503	1 < 2 = .87012
Expertise	1 > 2 = -1.4692	1 > 2 = - .15094
Organization	1 < 2 = .73695	1 < 2 = 1.1608
HUMANITAS	1 > 2 = -2.8480**	1 > 2 = 1.5630
Relation to Students	1 > 2 = -3.4759***	1 > 2 = 2.2813*
Openmindedness to Ideas	1 > 2 = -1.5536	1 > 2 = - .10751
PASSION	1 > 2 = -4.1012***	1 > 2 = 2.2382*
Energy involved with Subject	1 > 2 = -4.2266***	1 > 2 = -3.3417**
Expansiveness and Inspiration	1 > 2 = -2.0396*	1 > 2 = - .19676-1
ALL DEGREE	1 > 2 = -2.4298	
ALL IMPORTANCE		1 > 2 = -1.2742
CONGRUITY	1 > 2 = -3.0511	

$p \leq .05$*

$p \leq .01$**

$p \leq .001$***

N = 19, 22

TABLE 7

STUDENT'S t STATISTIC COMPARING STUDENT RATINGS OF PROFESSOR 3 (OUTSTANDING) AND PROFESSOR 4 (OTHER) IN THE DIMENSIONS OF CHARACTERISTICS, IMPORTANCE OF CHARACTERISTICS AND CONGRUITY

Dimension	Characteristic	Importance
POISE	3 > 4 = -2.6835	3 > 4 = -1.4964
Expertise	3 > 4 = -2.26104*	3 > 4 = -2.7679**
Organization	3 > 4 = -1.8526	3 < 4 = .49268
HUMANITAS	3 > 4 = -2.3890*	3 > 4 = -1.2351
Relation to Students	3 > 4 = -3.7166	3 > 4 = -2.7127**
Openmindedness to Ideas	3 > 4 = - .71481	3 < 4 = .17341
PASSION	3 > 4 = -1.6647	3 > 4 = -1.4931
Energy Involved with Subject	3 > 4 = -1.0414	3 > 4 = .69602
Expansiveness and Inspiration	3 > 4 = -1.6482	3 > 4 = -1.6019
ALL DEGREE	3 > 4 = -2.7181**	
ALL IMPORTANCE		3 > 4 = -2.1623*
CONGRUITY	3 > 4 = -2.4024*	

$p \leq .05$*

$p \leq .01$**

$p \leq .001$**

N = 19, 8

TABLE 8

STUDENT'S t STATISTIC COMPARING STUDENT RATINGS OF PROFESSOR 5 (OUTSTANDING) AND PROFESSOR 6 (OTHER) IN THE DIMENSIONS OF CHARACTERISTICS, IMPORTANCE OF CHARACTERISTICS AND CONGRUITY

Dimension	Characteristic	Importance
POISE	5 < 6 = 1.2611	5 < 6 = 1.9647
Expertise	5 < 6 = .62241	5 > 6 = 1.8667
Organization	5 < 6 = 1.9043	5 < 6 = 2.1000
HUMANITAS	5 < 6 = 2.6144**	5 < 6 = .77572
Relation to Students	5 < 6 = 2.7059*	5 < 6 = .88671
Openmindedness to Ideas	5 < 6 = 1.8831	5 < 6 = 1.4861
PASSION	5 < 6 = .43806	5 < 6 = .66374
Energy involved with Subject	5 < 6 = .67782	5 < 6 = 1.5776
Expansiveness and Inspiration	5 < 6 = .13603	5 > 6 = - .34158
ALL DEGREE	5 < 6 = 1.6088	
ALL IMPORTANCE		5 < 6 = 1.2501
CONGRUITY	5 > 6 = -2.5357*	

$p \leq .05$*

$p \leq .01$**

$p \leq .001$**

N = 3, 26

TABLE 9

STUDENT'S t STATISTIC COMPARING STUDENT RATINGS OF PROFESSOR 7 (OUTSTANDING) AND PROFESSOR 8 (OTHER) IN THE DIMENSIONS OF CHARACTERISTICS, IMPORTANCE OF CHARACTERISTICS AND CONGRUITY

Dimension	Characteristic	Importance
POISE	7 < 8 = 1.0800	7 > 8 = - .21112
Expertise	7 > 8 = - .29376	7 > 8 = - .64343
Organization	7 < 8 = 2.2413	7 < 8 = .30887
HUMANITAS	7 > 8 = -3.5646***	7 > 8 = .61736
Relation to Students	7 > 8 = -3.0913**	7 < 8 = .77765
Openmindedness to Ideas	7 > 8 = -2.7844**	7 > 8 = -1.5612
PASSION	7 > 8 = -3.9948***	7 > 8 = -1.6346
Energy Involved with Subject	7 > 8 = -3.8251***	7 > 8 = -2.0060*
Expansiveness and Inspiration	7 > 8 =	7 > 8 = - .61214
ALL DEGREE	7 > 8 = =2.8197**	
ALL IMPORTANCE		7 > 8 = - .95872
CONGRUITY	7 > 8 = -2.2835*	

$p \leq .05$*

$p \leq .01$**

$p \leq .001$***

N = 6, 30

TABLE 10

STUDENT'S t STATISTIC COMPARING STUDENT RATINGS OF PROFESSOR 9 (OUTSTANDING) AND PROFESSOR 10 (OTHER) IN THE DIMENSIONS OF CHARACTERISTICS, IMPORTANCE OF CHARACTERISTICS AND CONGRUITY

Dimension	Characteristic	Importance
POISE	9 > 10 = -1.3099	9 < 10 = .26159
Expertise	9 > 10 = -1.7020	9 < 10 = .47934
Organization	9 > 10 = - .56905	9 < 10 = .39713-1
HUMANITAS	9 < 10 = 2.1246	9 < 10 = 2.8174**
Relation to Students	9 < 10 = 1.2348	9 < 10 = 2.4026*
Openmindedness to Ideas	9 < 10 = 2.2481	9 < 10 = 2.7193**
PASSION	9 > 10 = -2.6901**	9 > 10 = -1.0532
Energy Involved with Subject	9 > 10 = -2.0503*	9 > 10 = 1.4648
Expansiveness and Inspiration	9 > 10 = -2.4225*	9 > 10 = - .39478
ALL DEGREE	9 > 10 = - .62537	
ALL IMPORTANCE		9 < 10 = 1.0631
CONGRUITY	9 < 10 = .82279-1	

$p \leq .05$* N = 17, 41

$p \leq .01$**

$p \leq .001$***

TABLE 11

STUDENT'S t STATISTIC COMPARING STUDENT RATINGS OF PROFESSOR 11 (OUTSTANDING) AND PROFESSOR 12 (OTHER) IN THE DIMENSIONS OF CHARACTERISTICS, IMPORTANCE OF CHARACTERISTICS AND CONGRUITY

Dimension	Characteristic	Importance
POISE	11 < 12 = .27599	11 < 12 = 2.0921
Expertise	11 > 12 = - .59641	11 < 12 = 2.1164*
Organization	11 < 12 = .86631	11 < 12 = 1.1162
HUMANITAS	11 < 12 = .69125	11 < 12 = 2.6932**
Relation to Students	11 < 12 = .87062	11 < 12 = 2.1506*
Openmindedness to Ideas	11 < 12 = .31791	11 < 12 = 2.1725*
PASSION	11 > 12 = .23361	11 < 12 = 2.4444*
Energy Involved with Subject	11 < 12 = .59238	11 < 12 = 3.1767**
Expansiveness and Inspiration	11 > 12 = 1.1201	11 < 12 = 1.0306
ALL DEGREE	11 < 12 = .29477	
ALL IMPORTANCE		11 < 12 = 3.0063**
CONGRUITY	11 > 12 = -2.1220*	

$p \leq .05$*

$p \leq .01$**

$p \leq .001$***

N = 81, 3

TABLE 12

STUDENT'S t STATISTIC COMPARING STUDENT RATINGS OF PROFESSOR 13 (OUTSTANDING) AND PROFESSOR 14 (OTHER) IN THE DIMENSIONS OF CHARACTERISTICS, IMPORTANCE OF CHARACTERISTICS AND CONGRUITY

Dimension	Characteristic	Importance
POISE	13 > 14 = -2.4214*	13 > 14 = -1.0196
Expertise	13 > 14 = -3.3708**	13 > 14 = -1.1487
Organization	13 > 14 = - .74398	13 > 14 = - .68900
HUMANITAS	13 > 14 = -2.8887**	13 > 14 = - .49250
Relation to Students	13 > 14 = -1.5479	13 < 14 = .39139
Openmindedness to Ideas	13 > 14 = -3.7641***	13 > 14 = -1.1694
PASSION	13 > 14 = -2.0740*	13 > 14 = - .87406
Energy Involved with Subject	13 > 14 = -2.5414*	13 < 14 = .22831-1
Expansiveness and Inspiration	13 > 14 = -1.1899	13 > 14 = -1.5955
ALL DEGREE	13 > 14 = -2.9990	
ALL IMPORTANCE		13 > 14 = - .95269
CONGRUITY	13 > 14 = -2.3245*	

$p \leq .05$*

$p \leq .01$**

$p \leq .001$***

N = 13, 14

TABLE 13

STUDENT'S t STATISTIC COMPARING STUDENT RATINGS OF PROFESSOR 15 (OUTSTANDING) AND PROFESSOR 16 (OTHER) IN THE DIMENSIONS OF CHARACTERISTICS, IMPORTANCE OF CHARACTERISTICS AND CONGRUITY

Dimension	Characteristic	Importance
POISE	15 > 16 = - .81684	15 < 16 = .14227-1
Expertise	15 > 16 = - .23619	15 < 16 = .13773-1
Organization	15 > 16 = -1.0941	15 < 16 = 1.6431
HUMANITAS	15 > 16 = -1.9862	15 < 16 = .29879
Relation to Students	15 > 16 = -2.0124†	15 < 16 = .33045
Openmindedness to Ideas	15 > 16 = -1.6980	15 < 16 = .23432
PASSION	15 > 16 = -3.4644**	15 > 16 = - .65525
Energy Involved with Subject	15 > 16 = -3.8133***	15 > 16 = - .82632
Expansiveness and Inspiration	15 > 16 = 1.4276	15 > 16 = - .26502
ALL DEGREE	15 > 16 = -2.1534*	
ALL IMPORTANCE		15 > 16 = - .53023-1
CONGRUITY	15 > 16 = -2.4183*	

p = .056-.059+ N = 18, 5

p $\leq$ .05*

p $\leq$ .01**

p $\leq$ .001***

TABLE 14

STUDENT'S t STATISTIC COMPARING STUDENT RATINGS OF PROFESSOR 17 (OUTSTANDING) AND PROFESSOR 18 (OTHER) IN THE DIMENSIONS OF CHARACTERISTICS, IMPORTANCE OF CHARACTERISTICS AND CONGRUITY

Dimension	Characteristic	Importance
POISE	17 > 18 = -2.7421*	17 < 18 = 1.0051
Expertise	17 > 18 = -1.6913	17 < 18 = .39841
Organization	17 > 18 = -2.4177*	17 < 18 = 1.1501
HUMANITAS	17 > 18 = -3.1240**	17 > 18 = - .83458
Relation to Students	17 > 18 = -2.1931*	17 < 18 = .27369
Openmindedness to Ideas	17 > 18 = -3.2615**	17 > 18 = -1.4055
PASSION	17 > 18 = -4.3064***	17 > 18 = - .56854
Energy Involved with Subject	17 > 18 = -3.8691**	17 > 18 = - .61645
Expansiveness and Inspiration	17 > 18 = no statistic	17 > 18 = - .48603
ALL DEGREE	17 > 18 = -3.8924**	
ALL IMPORTANCE		17 > 18 = - .33070
CONGRUITY	17 > 18 = -1.2717	

$p \leq .05$*

$p \leq .01$**

$p \leq .001$***

N = 4, 8

TABLE 15

STUDENT'S t STATISTIC COMPARING STUDENT RATINGS OF PROFESSOR 19 (OUTSTANDING) AND PROFESSOR 20 (OTHER) IN THE DIMENSIONS OF CHARACTERISTICS, IMPORTANCE OF CHARACTERISTICS AND CONGRUITY

Dimension	Characteristic	Importance
POISE	19 > 20 = -1.2699	19 > 20 = -3.0555**
Expertise	19 > 20 = -3.4922**	19 > 20 = -3.7406***
Organization	19 < 20 = 1.7597	19 > 20 = 2.5193
HUMANITAS	19 < 20 = 2.1402*	19 > 20 = - .56222
Relation to Students	19 < 20 = 3.0160**	19 < 20 = .10501-1
Openmindedness to Ideas	19 < 20 = 1.426	19 > 20 = - .88235
PASSION	19 > 20 = -2.7935**	19 > 20 = -3.8637***
Energy Involved with Subject	19 > 20 = -2.1706*	19 > 20 = -2.7347**
Expansiveness and Inspiration	19 > 20 = -2.5054**	19 > 20 = -3.2477**
ALL DEGREE	19 > 20 = - .33809	
ALL IMPORTANCE		19 > 20 = -2.8515**
CONGRUITY	19 < 20 = 1.8014	

$p \leq .05$*

$p \leq .01$**

$p \leq .001$**

N = 38, 17

TABLE 16

SUMMARY OF TABLES 6-15 COMPARING STUDENT RATINGS OF "OUTSTANDING" AND "OTHER" PROFESSORS IN THE DIMENSIONS OF DEGREE OF CHARACTERISTICS AND CONGRUITY

N = 10 (pairs)

	N "OUTSTANDING" Rated Higher		N "OTHER" Rated Higher	
Dimension	N	Signif.* N	N	Signif.* N
POISE	7	3	3	0
Expertise	9	3	1	0
Organization	5	1	5	1
HUMANITAS	6	5	4	3
Relation to Students	6	5	4	2
Openmindedness to Ideas	6	3	4	1
PASSION	9	6	1	0
Energy Involved with Subject	8	7	2	0
Expansiveness and Inspiration	9	4	1	0
ALL DEGREE	8	5	2	0
CONGRUITY	8	7	2	0

$p \leq .05$*

TABLE 17

SUMMARY OF TABLES 6-15 COMPARING STUDENT RATINGS OF "OUTSTANDING" AND "OTHER" PROFESSORS IN THE DIMENSIONS OF IMPORTANCE OF CHARACTERISTICS

N = 10 (pairs)

	N "OUTSTANDING" Rated Higher		N "OTHER" Rated Higher	
Dimension	N	Signif.* N	N	Signif.* N
POISE	4	1	6	1
Expertise	4	2	6	1
Organization	2	0	8	0
HUMANITAS	6	0	4	2
Relation to Students	2	2	8	2
Openmindedness to Ideas	5	0	5	2
PASSION	8	2	2	1
Energy Involved with Subject	7	3	3	1
Expansiveness and Inspiration	9	1	1	0
ALL IMPORTANCE	7	2	3	1

$p \leq .05$*

Differences Between Student Data for "Outstanding" and "Other" Professors (Summary Tables 16 and 17)

A. Poise

1. Characteristic

In the dimension of Poise, 7 out of 10 matched pairs rated the "Outstanding" professors higher, 3 significantly. Of the remaining pairs, 3 of the "Other" professors rated higher, but none significantly so.

2. Importance

Only 4 of the "Outstanding" professors' classes thought that this dimension was important while 6 of the classes of the "Other" group rated this total dimension as more important. In each group, only 1 score was significant.

3. "Expertise"

a. Characteristic

For "Expertise," a subdimension of Poise, 9 out of 10 of the "Outstanding" professors rated higher than their corresponding "Other" colleagues, 3 significantly so; while 1 of the "Other" rated higher, but not significantly. Using the Sign Test (Dixon and Massey, 1957) for 9 out of 10, the higher rating of the "Outstanding" professors in "Expertise" is significant at the .011 level.

b. Importance

Only 4 (2 significant) of the "Outstandings'" classes rated this characteristic, "Expertise," more important than did their matched pairs of "Others'" classes. Of the 6 "Others'" classes, this characteristic was rated more important than the matched "Outstandings'" classes, but only 1 was significant.

4. "Organization"

a. Characteristic

For "Organization," a subdimension of the characteristic, Poise, no differences were found. The analysis of the means showed

that the groups were split with 5 means higher for each group--"Outstanding" and "Other," with only 1 significant difference in each case.

b. Importance

However, for importance of "Organization," 8 of the "Others'" classes thought that this was more important than did the students in the matched classes of "Outstanding" professors. Only 2 of the "Outstandings'" classes rated this attribute as more important. In both cases, no single score was significant. However, in applying the Sign Test for 8 out of 10, it is significant at the .055 level that the "Others'" classes rated "Organization" as more important in their classes than did the classes of the "Outstanding" professors.

B. Humanitas

1. Characteristic

For Humanitas, in 6 out of 10 pairs, the "Outstanding" professors were rated higher, 5 significantly so, while 4 of the "Other" professors were rated higher, 3 significantly so.

2. Importance

The importance of this characteristic was rated higher in 6 of the "Outstandings'" classes, but the only significant scores were 2 out of 4 in the "Other" group.

3. "Relationship to Students"

a. Characteristic

For the subdimension of "Relationship to Students," 6 of the "Outstanding" professors were rated higher in this dimension, 4 significantly; 4 of the "Other" professors were rated higher with 2 significantly so.

b. Importance

Of the "Outstanding" professors, students rated "Relationship to Students" higher in importance in only 2 pairs and these were both significant. Of the 8 "Other"

professors, students thought this characteristic more important than did those of the "Outstanding" matched pairs, but only 2 of these differences were significant. It is significant at the .055 level (Sign Test) that the classes of the "Other" professors rated the characteristic of "Relationship to Students," as more important.

4. "Openmindedness to Ideas"

a. Characteristic

In the case of "Openmindedness to Ideas," the "Outstanding" professors rated higher than the "Others," 6 - 4 with 3 significant scores for the "Outstanding" group and only 1 significant score for the "Other" group.

b. Importance

However, the students rated this dimension with an even split as to its importance in their classes, 5 - 5, with significant differences favoring 2 in the "Other" group.

C. Passion

1. Characteristic

For the total scores for Passion, the "Outstandings" rated higher than the "Others" 9 - 1 with 6 significant scores for the "Outstanding" group and no significant scores for the "Other." The Sign Test indicates that the "Outstanding" professors were rated higher than the "Other" group in the total dimension of Passion at the .011 level of significance.

2. Importance

The students of 8 of the "Outstanding" group rated this dimension more important than did those of the "Other" group, 2 significantly so. This has a Sign Test significance of .055. Of the 2 remaining "Other" group rating this dimension higher only one score was significant.

3. "Energy Involved with Subject"

a. Characteristic

For "Energy Involved with Subject," a subdimension of Passion, 8 of the "Outstanding"

professors were rated higher by their students, 6 significantly so. Of the 2 rated higher in the "Other" group, none were found to be significant. The Sign Test indicates that the "Outstanding" professors were rated higher in "Energy Involved with Subject" at the significance level of .055.

b. Importance

Seven out of 10 in the "Outstanding" group were rated higher than the "Other" group as to the importance of "Energy Involved with Subject," 3 significantly so; and 3 of the "Other" group rated this characteristic higher in importance with 1 significant score.

4. "Expansiveness and Inspiration"

a. Characteristic

In the subdimension of "Expansiveness and Inspiration," 9 out of 10 of the "Outstanding" professors were rated higher by their students than were their "Other" counterparts, 4 significantly so. The Sign Test significance for 9 out of 10 "Outstanding" professors rated higher is .011 for this subdimension.

b. Importance

The Sign Test significance level of .011 applied also the students' rating of the importance of "Expansiveness and Inspiration" for the "Outstanding" group 9 - 1. However, only 1 significant individual score was found in this instance.

D. Poise, Humanitas and Passion--Total Scores

1. Characteristics

The total score for all the Degree of Characteristics for Poise, Humanitas and Passion rated the "Outstanding" professors higher than the "Others" 8 - 2 with 5 significant scores in favor of the "Outstanding" professors. This difference is significant at .055 (Sign Test).

2. Importance

The total in importance of these characteristics showed that the students of the "Outstanding" professors thought these characteristics more important 7 - 3 with 2 of the "Outstanding" scores significant and 1 of the "Other" significant.

E. Congruity Question

In the case of the Congruity question individualized for each professor on the questionnaires, 8 of the classes of the "Outstanding" professors showed a higher rating of their professors' course descriptions with 7 significant differences in scores. There were no significant scores of the 2 classes rating the "Other" group higher. The Sign Test level of significance for 8 out of 10 of the "Outstanding" professors' higher rating on this question is .055.

Summary of Significant Data in Tables 16 and 17

Using the Sign Test (Dixon and Massey, 1957) for N = 10; a difference of 1 is significant at .011; a difference of 2 is significant at .055; the following significant differences between the 10 matched pairs of "Outstanding" and "Other" groups were established:

Degree of Characteristic

1) 9 out of 10 of the "Outstanding" professors were rated higher in the subdimension of "Expertise." (.011)

2) 9 out of 10 of the "Outstanding" professors were rated higher in total scores for the dimension of Passion. (.011)

3) 8 out of 10 of the "Outstanding" professors were rated higher in the subdimension of "Energy Involved with Subject." (.055)

4) 9 out of 10 "Outstanding" professors were rated higher in the subdimensions of "Expansiveness and Inspiration." (.011)

5) 8 out of 10 "Outstanding" professors rated higher in the Total of all three dimensions of Poise, Humanitas and Passion. (.055)

6) 8 out of 10 "Outstanding" professors were rated higher by their students in Congruity of their description of their classes and their students' perception of their classes. (.055)

Degree of Importance

1) 8 out of 10 of the classes of the "Other" professors believed "Organization" to be more Important than did the students of the "Outstanding" professors. (.055)

2) 8 out of 10 of the classes of the "Outstanding" professors thought that the total dimension of Passion was more Important than did the students of the "Other" professors. (.055)

3) 9 out of 10 of the classes of the "Outstanding" professors weighted "Expansiveness and Inspiration" as more important in their classes than did the students in the "Others'" classes. (.011)

Part V. The Analyses of Data Comparing Students, Professors, Tape Auditors and Observers

Section A. Analyses of Data Specifically Relevant to the Following Hypotheses

1. Regardless of their field of instruction, professors selected by students as "Outstanding" will be differentiated from their "Other" colleagues in the attributes of Poise, Humanitas and Passion.

   a. The results from the questionnaires completed by themselves as they perceive themselves will place them higher in these attributes than their matched colleagues.

   b. The results from their questionnaires completed by themselves as they estimate their students will view them will place them higher than their matched colleagues.

   d. The results from their questionnaires completed by observers of their classes will rate them higher than their matched colleagues.

e. The results from their questionnaires completed by auditors of the taped interviews will place them higher in these attributes than their matched colleagues.

2. Regardless of their field of instruction, professors designated as "Outstanding" will be differentiated from their "Other" colleagues in the attribute of Congruity.

a. The results from their questionnaires completed by them as they perceive themselves will be more consistent with the results of the questionnaires completed by their students than will be the case for their "Other" colleagues.

b. The results from their questionnaires estimating students' views of them will be more consistent with students' actual views than will be the case for their "Other" colleagues.

d. The results from their self-perception questionnaires and estimate of student response questionnaires will be more consistent with their students' questionnaires in the rating of these dimensions in the scale of Importance.

The tables and analyses which follow represent comparison of data across groups (students, professors, observers and tapes) for the specific dimensions of the study (Degree and Importance of Characteristics). Significant t-test levels are indicated for individual scores in each dimension and are designated at .05 or .01 levels. In these cases, the N designates the number of paired comparisons for each item.

In the discussion of total scores for the dimensions of Poise, Humanitas and Passion, only the component scores of their subdimensions were used in the Sign Test analysis. In this case, the Congruity question (30) was included with the six subdimensions for the Degree of the above Characteristics. Therefore, there were seven variables

compared as to the Degree of Characteristic, "Expertise," "Organization," "Relationship to Students," "Openmindedness to Ideas," "Energy Involved with Subject," "Expansiveness and Inspiration," and Congruity. In the case of total scores for Importance, in the analysis of Sign Test significance, the six subdimensions, "Expertise," "Organization," "Relationship to Students," "Openmindedness to Ideas," "Energy Involved with Subject," and "Expansiveness and Inspiration" were compared.

Faculty Self-Perception, Summary of Table 18

All "Outstanding" and all "Other" professors were compared as groups in the dimensions and subdimensions of Poise, Humanitas, Passion; and Congruity.

In every case, the "Outstanding" professors rated themselves higher in these dimensions than did the "Others." Using the Sign Test for 7 out of 7 (all subdimensions + Congruity), this difference is significant at the .008 level.

In the Characteristic of the total dimension of Passion, the "Outstanding" professors rated themselves higher than did the "Others" at a significance level of .01. Also significant at the .001 level is the higher self-rating of the "Outstanding" professors in the subdimension of "Expansiveness and Inspiration."

In the faculty rating of the Importance of these characteristics as they perceived them, again, on every dimension, the "Outstanding" professors rated these

TABLE 18

STUDENT'S t STATISTIC COMPARING SELF-PERCEPTIONS OF ALL "OUTSTANDING" (1) AND ALL "OTHER" (2) PROFESSORS

Dimension	Characteristic	Importance
POISE	1 > 2 = - .48393	1 > 2 = -1.7868
Expertise	1 > 2 = - .59655-1	1 > 2 = -1.1224
Organization	1 > 2 = - .82367	1 > 2 = -1.8052
HUMANITAS	1 > 2 = -1.2947	1 > 2 = -2.5260*
Relation to Students	1 > 2 = -1.1881	1 > 2 = -2.1105*
Openmindedness to Ideas	1 > 2 = -1.1673	1 > 2 = -2.3569*
PASSION	1 > 2 = -3.5480**	1 > 2 = -4.9832***
Energy Involved with Subject	1 > 2 = -1.0519	1 > 2 = -3.1461**
Expansiveness and Inspiration	1 > 2 = -5.9377***	1 > 2 = -4.3493***
ALL DEGREE	1 > 2 = = -1.8927	
ALL IMPORTANCE		1 > 2 = -3.5857**
CONGRUITY	1 > 2 = -1.8586	

$p \leq .05$*

$p \leq .01$**

$p \leq .001$***

N = 10

characteristics as more Important in their classes than did the "Other" professors. The sign test level of significance for all these dimensions of Importance is also .001. "Outstanding" professors also rated "Expansiveness and Inspiration" significantly more important than did the "Others" at the significance level of .001.

The "Outstanding" professors self-rated as Important, "Relation to Students" and the total dimension of Humanitas significantly higher at .05 than did the "Others" as to its importance. At the significance level of .01, the "Outstanding" professors also rated the importance of Passion ("Energy Involved with Subject" and "Expansiveness and Inspiration") as more important than did the "Others."

Faculty Estimates of Their Students' Responses--Comparison of "Outstanding" and "Other" Professors, Summary of Table 19

In their estimates of student response, the "Outstanding" professors as a group, thought that their students would rate them higher in "Expertise," "Openmindedness to Ideas," and "Expansiveness and Inspiration" than did the "Other" professors. For total scores, the "Outstanding" professors thought their students would rate them higher in Humanitas and Passion than did the "Others." In contrast, the "Others" thought that their students would rate them higher in "Organization," "Relation to Students," "Energy Involved with Subject," and in "Congruity." In total score (All Degree) for Characteristics of Poise, Humanitas and Passion and in Congruity, the "Others" thought that their students would rate them higher than

TABLE 19

STUDENT'S t STATISTIC COMPARING FACULTY ESTIMATES OF STUDENT RESPONSES BETWEEN "OUTSTANDING" (1) AND "OTHER" (2) PROFESSORS

Dimension	Characteristic	Importance
POISE	1 < 2 = .37618	1 > 2 = -1.2545
Expertise	1 > 2 = - .22887	1 > 2 = - .26890
Organization	1 < 2 = .76817	1 > 2 = -1.9597
HUMANITAS	1 > 2 = - .19150	1 > 2 = -2.8350**
Relation to Students	1 < 2 = .67712	1 > 2 = -2.2737*
Openmindedness to Ideas	1 > 2 = - .92229	1 > 2 = -2.6447**
PASSION	1 > 2 = - .56931-3	1 > 2 = -2.1948*
Energy Involved with Subject	1 < 2 = .23679	1 > 2 = -1.565
Expansiveness and Inspiration	1 > 2 = - .22744	1 > 2 = -2.2054*
ALL DEGREE	1 < 2 = .68945-1	
ALL IMPORTANCE		1 > 2 = -2.3733*
CONGRUITY	1 < 2 = .74266	

$p \leq .05$*

$p \leq .01$**

$p \leq .001$***

N = 10

did the "Outstanding" professors. However, none of these scores was significant.

In contrast, in the estimate of the Importance students attached to these characteristics, in each dimension and subdimension, the "Outstanding" professors believed that their students attached greater Importance to each item than did the "Others" as a group. Thus, the "Outstanding" professors thought that their students would rate all dimensions of Poise, Humanitas and Passion higher in Importance than did their "Other" colleagues. Significant scores at the .05 level were found for all dimensions for Importance of Humanitas ("Relation to Students," and "Openmindedness to Ideas"), total score for Passion, specifically also in "Expansiveness and Inspiration" and in the total score for All dimensions in estimating their Importance. Using the N of 6 (two subdimensions each for Poise, Humanitas and Passion) the Sign Test significance level is .016 for the total score of the six subdimensions of Importance.

Student's t Comparing Observer Data of "Outstanding" and "Other" Professors

Neither the Student's t Test nor the Sign Test showed any significant differences in Observer Data in comparing "Outstanding" and "Other" professors.

Student's t Comparing Tape Data of "Outstanding" and "Other" Professors

As in the case of the Observer Data, neither the Student's t Test nor the Sign Test revealed any significant

differences in Tape Data in comparing "Outstanding" and "Other" professors.

Pairwise t-Statistics Comparing Student Response and Faculty Estimate of Student Response--"Outstanding" Professors

The students of "Outstanding" professors rated them higher in every dimension and subdimension of Degree of Characteristic than the "Outstandings'" estimated. Using the Sign Test for 7 out of 7 dimensions this is significant at .008. There were a number of significant differences found in various dimensions. The students of the "Outstanding" professors rated them significantly higher than their Estimate in the following dimensions of Characteristics: "Expertise," (-2.5802)*; "Relationship to Students" (-2.4687)*; "Energy Involved with Subject" (-3.0209)**; "Expansiveness and Inspiration" (-3.3968)**. In All Degree of Characteristic (total score) students rated the "Outstandings" higher than estimated significantly (-2.4914)*.

In contrast, in the ratings on the Importance scale, the "Outstanding" professors rated in their estimate significantly higher scores than did their students in the following dimensions: Importance of "Organization" (2.8309)* and Importance of "Relation to Students" (3.0709)**.

Pairwise t-Statistics Comparing Student Response and Faculty Estimate of Student Response--"Other" Professors

There were no significant differences between the student response and the "Others'" estimate of student

response on any of the Degree of Characteristic dimensions.

However, in the assessment of the Importance of the characteristics, the students of the "Other" professors rated "Openmindedness" (-2.5145)*; Humanitas (-2.1952)* and Passion (-2.2651)* significantly more Important than these "Other" professors estimated.

Pairwise t-Statistics Comparing Student Response and Faculty Self-Perception--"Outstanding" Professors

There were no significant differences in Degree of Characteristics between the "Outstanding" professors' self-perception of these characteristics and the student perception of these characteristics.

For 7 out of 7 of the subdimensions in Importance of these characteristics, however, the "Outstanding" professors rated these characteristics more Important than did their students. This is significant using the Sign Test value at .008. The "Outstanding" professors rated "Organization" significantly more Important than did their students (2.5114)*. They also rated "Relation to Students significantly higher than did their students (2.5801)*.

Pairwise t-Statistics Comparing Student Response and Faculty Self-Perception--"Other" Professors

Students rated the "Other" professors significantly higher in "Expansiveness and Inspiration" than these professors' self-perception ratings (-3.4546)**. Also significant is the higher rating the students gave these

"Other" professors than they gave themselves in the total dimension of Passion (-2.4412)*.

In the dimension of Importance of these Characteristics, however, the students of these professors rated every dimension higher in Importance than did these "Other" professors. The Sign Test significance for 7 out of 7 in this case is at .008. Students rated the item, "Open-mindedness to Ideas" significantly more important than did the "Other" professors (-2.4171)*. Students rated the total dimension of Humanitas significantly more important than did the "Other" professors (-2.4673)*. Students rated "Expansiveness and Inspiration" more important than did the "Other" professors (-2.2053)+. And students rated the total dimension of Passion significantly higher than did the "Other" professors (-3.2494)**. For the total score for all the dimensions of Importance, students reported these Characteristics as higher in Importance than did the "Other" professors (-2.6662)+.

Section B. Analyses of Data Beyond the Hypotheses

The following analyses beyond the hypotheses are presented. They are relevant to the hypotheses and are mentioned in the Discussion in Chapter VI.

Pairwise t-Statistics Comparing Observer and Tape Data for "Outstanding" Professors

Tape auditors rated the "Outstanding" professors higher than the "Other" professors in 7 out of 7 dimensions

of Degree of Characteristics. The only individual significant difference in scores between the observer and tape data for "Outstanding" professors was in the item, Importance in "Expertise" which was significant (-2.5489)*. Here the observers felt that this was significantly more important in the classes of the "Outstanding" professors than did the tape auditors.

Pairwise t-Statistics Comparing Observer and Tape Data for "Other" Professors

The comparison between Observer and Tape Data using Pairwise t-Statistics showed significant differences in only two instances. The tape auditors thought that "Open-mindedness to Ideas" was significantly more apparent in the "Other" professors than did the observers (2.4107)*. The auditors also thought that these professors were significantly higher (2.3211)* in "Expansiveness and Inspiration" than did the observers.

Pairwise t-Statistics Comparing Observer and Tape Data for All Professors

Tape auditors rated all professors higher in 7 out of 7 of the Degree of Characteristics which is significant for the Sign Test at .008. Tape auditors rated all professors significantly higher than did the observers in the following individual categories: "Energy Involved with Subject" (2.0360)+; "Expansiveness and Inspiration" (2.6005)*; and the Importance of the total score for Passion (2.0409)*.

Pairwise t-Statistics Comparing Student and Tape Data for "Outstanding" Professors

Near significant (2.1554)+ was the higher rating the Tape Auditors gave to the "Outstanding" professors in "Relation to Students." No other dimension showed a significant difference.

Pairwise t-Statistics Comparing Student and Tape Data for "Other" Professors

The Tape Auditors rated the "Other" professors significantly higher (2.2893)* in "Expertise" than did their students. Tape auditors also rated these "Other" professors significantly higher (3.5194)** in "Expansiveness and Inspiration" than did their students.

The Sign Test for significance of all items in Importance indicates at the level of .016 (6 out of 6) that auditors thought these items more Important than did these professors' students.

Pairwise t-Statistics Comparing Student and Tape Data for All Professors

For all professors there were no significant differences between the student data and the tape data.

Pairwise t-Statistics Comparing Student Data and Observer Data for "Outstanding" Professors

The students of the "Outstanding" professors rated them higher than did the observers for total score in Passion (-2.3189)*; and for the subdimension of "Expansiveness and Inspiration (-2.5560)*.

The Sign Test level of significance of .008 was attained for students rating the "Outstanding" professors higher in 7 out of 7 of the Degree of Characteristics than did the observers.

Pariwise t-Statistics Comparing Student Data and Observer Data for "Other" Professors

No significant differences were found between student and observer data for "Other" professors.

Pairwise t-Statistics Comparing Student Data and Observer Data for All Professors

For all professor data ("Outstanding" and "Other" combined), the only significant difference (2.3861)* was found between the higher rating the observers gave to the Importance of "Expertise."

Pairwise t-Statistics Comparing Tape Data and Faculty Estimate of Student Response for "Outstanding" Professors

Tape auditors rated the "Outstanding" professors significantly higher (-2.6329)* in the subdimension, "Energy Involved with Subject" compared to the professors' estimate of their students' rating. For all dimensions of the Degree of Characteristics, the auditors rated these professors higher than they estimated their students would rate them. This is significant at .008 Sign Test level for 7 out of 7.

Pairwise t-Statistics Comparing Tape Data and Faculty Estimate of Student Response for "Other" Professors

Tape Auditors rated the "Other" professors significantly higher in "Expansiveness and Inspiration" (-5.7846)*** compared to the professors' estimate of their students' rating.

Tape Auditors thought that "Expansiveness and Inspiration" was also more Important than the faculty estimate of their students' ratings (-2.3583)*. Tape Auditors also rated the Importance of the total dimension of Passion significantly (-2.3936)* higher than did the "Other" professors estimate of their students' response. The Tape Auditors rated all the dimensions of Importance higher than the "Others'" estimate of student response (-2.2105)*. Six out of 6 for all the dimensions of Importance were rated higher by the Auditors. This is significant at the .016 level.

Pairwise t-Statistics Comparing Tape Data and Faculty Estimate of Student Response for All Professors

For all professors, the tape auditors rated them significantly higher than they estimated their students would in the following dimensions: "Energy Involved with Subject," (2.2818)*; "Expansiveness and Inspiration" (-4.4068)***; the Importance of "Energy Involved with Subject" (-2.4319)*; and total score for the Importance of Passion (-2.5753)*.

Pairwise t-Statistics Comparing Tape Data and Faculty Self-Perception for "Outstanding Professors

It is interesting to note that there were no significant differences between the ratings of the tape auditors and the self-perceptions of "Outstanding" professors.

Pairwise t-Statistics Comparing Tape Data and Faculty Self-Perception for "Other" Professors

Of further interest is the fact that there was a significant difference (-7.1204)** between the tape auditors' higher rating of "Other" professors in the subdimension of "Expansiveness and Inspiration" and the self-perception rating of the "Other" professors in this dimension.

In the Importance of Characteristics, Auditors rated the total of Importance for all these characteristics significantly higher (-3.3165)** than did the "Other" professors. The Auditors rated Importance of all subdimensions higher than did the "Other" professors which attains a Sign Test level of significance for 6 out of 6 at .016. Significant values for differences were found for the following characteristics rated higher in Importance by the auditors than by the self-perceptions of the "Other" professors: "Openmindedness to Ideas" (-3.0599)*; the total dimension of Humanitas (-3.4242)**; "Energy Involved with Subject" (-2.2874)*; "Expansiveness and Inspiration" (-2.6458)*; and total score for the Importance of Passion (-3.1613)**.

Pairwise t-Statistics Comparing Tape Data and Faculty Self-Perception for All Professors

No significant differences were found between Tape Data and Faculty Self-Perception Data for All professors.

Pairwise t-Statistics Comparing Observer Data and Faculty Estimate of Student Response for "Outstanding" Professors

Only one significant difference was found comparing observer data and faculty estimate of student response. The "Outstanding" professors estimated student response to the Importance of "Organization" higher than the rating given by observers (2.8487)*.

Pairwise t-Statistics Comparing Observer Data and Faculty Estimate of Student Response for "Other" Professors

Observers rated the Importance of the total dimension of Passion significantly higher than did the "Other" professors' estimate of their students' rating (-2.3865)*.

Pairwise t-Statistics Comparing Observer Data and Faculty Estimate of Student Response for All Professors

For all professors, Observers rated Importance of "Expertise" significantly higher than did all professors in the study (-2.6651)*.

Pairwise t-Statistics Comparing Observer Data and Faculty Self-Perception for "Outstanding" Professors

"Outstanding" professors rated the Importance of "Organization" significantly higher than did the Observers (2.4932)*. "Outstanding" professors also rated the

Importance of "Expansiveness and Inspiration" significantly higher (2.7719)* than did the Observers.

Pairwise t-Statistics Comparing Observer Data and Faculty Self-Perception for "Other" Professors

Observers rated the "Other" professors significantly higher than they rated themselves in the dimension of "Expansiveness and Inspiration" (2.8737)*. Observers also rated these "Other" professors higher than they did themselves in the total dimension of Passion (-2.2727)*.

Observers rated the Importance of all the Characteristics higher than did the "Other" professors. This was significant for the total of All of Importance (-3.1727)**. The Sign Test for this comparison was 6 out of 6 significant at .016. For the specific item of Importance of Humanitas, observers rated the total score higher than did the "Other" professors (-2.2607)*. Observers rated the Importance of "Expansiveness and Inspiration" significantly higher (-3.1727)** than did the "Others." Also significant was the total score for the Importance of the dimension of Passion (-4.0086)** which was rated higher by the Observers.

Pairwise t-Statistics Comparing Observer Data and Faculty Self-Perception for All Professors

The only significant difference determined by comparing observer data and faculty self-perception data was the higher rating the observers gave for the Importance of "Expertise" which was significant (-2.1796)*.

Pairwise t-Statistics Comparing Faculty Estimate of Student Response and Faculty Self-Perception--"Outstanding" Professors

In every item for Degree of Characteristic, the "Outstanding" professors rated themselves higher in their self-perception of these characteristics than they estimated that their students would. The Sign Test significance for 7 out of 7 in this case is at .008. Significant differences occurred in the following specific instances: "Outstanding" professors perceived themselves significantly higher in the subdimension of "Openmindedness" than they estimated their students would (2.2685)*; "Outstanding" professors rated themselves significantly higher in "Expansiveness and Inspiration" than they estimated their students would (2.3761)*. This was also true for Congruity (2.8712)*.

Pairwise t-Statistics Comparing Faculty Estimate of Student Response and Faculty Self-Perception--"Other" Professors

It is interesting to note that there were no significant differences between the "Other" professors' self-perceptions and their estimates of student response.

Pairwise t-Statistics Comparing Faculty Estimate of Student Response and Faculty Self-Perception--All Professors

For All Degree of Characteristics, All Faculty Data combined indicated that Faculty Self-Perceptions were higher than Faculty Estimates of student response. For all dimensions, the Sign Test level of significance for

7 out of 7 is significant at .008. There were significant differences in Congruity where the faculty self-perception was higher than the faculty estimate of student response (2.5217)*. Also significant was the higher rating in the Degree of the Characteristic, "Openmindedness to Ideas" (2.2020)*; and the higher rating of the self-perception of all professors for the Degree of the Characteristic Humanitas (2.2557)* than they estimated their students would rate them.

Pairwise t-Statistics Comparing Student Response and Faculty Estimate of Student Response--All Professors

In comparing data for all professors, students rated their professors higher than these professors estimated in "Energy Involved with Subject" (-2.2659)*: "Expansiveness and Inspiration" (-3.3688)**; and Passion (-3.0237)**. For the total scores of All Degree of Characteristics (Poise, Humanitas and Passion), students rated all professors significantly higher than these professors estimated (-2.1538)*.

In the rating of Importance of "Organization," faculty rated this significantly higher in their estimate than did their students (2.1104)*.

Pairwise t-Statistics Comparing Student Response and Faculty Self-Perception--All Professors

In comparing student response and faculty self-perception for all professors, no significant differences were determined.

This completes the presentation of all the statistical analyses of data which were prepared and which seemed appropriate to the research hypotheses of this study. A discussion of these findings will follow in Chapter V.

CHAPTER V

DISCUSSION

The Questionnaire

Costin and Grush (1971) earlier stated that the use of a Survey instrument would be more helpful in describing classroom behavior of teachers than would other instruments which attempted to isolate factors of preconceived notions of teaching styles.

The questionnaire developed for this study was designed to provide sufficient information to discern differences between outstanding and other instructors. Additional information was gathered in this study by the inclusion of the Importance scale in coordination with the scale of Degree of Characteristics. Whereas Levinthal et al. (1971) suggested that discrepancies between students' perceptions of ideal teacher behavior and the actually perceived behavior of the teacher were necessary in teacher evaluation, the Importance scale in this present study was used to compare expectations between groups. "Outstanding" and "Other" professors were found to be significantly different in their perceptions of the value of these different characteristics as well as in their estimates of the value their students placed on these dimensions.

In its final form, the correlation coefficients comparing the pre and post tests showed that the average question was answered similarly at the significance level of .01.

Factor Analysis

The dimensions and subdimensions of this particular study were defined by factor analysis as follows:

A. Poise

1) "Expertise" (mastery of subject and experience as a teacher)

2) "Organization" (structuring parameters for learning and understanding)

B. Humanitas

1) "Relationship to Students" (understanding of students and encouraging to them)

2) "Openmindedness to Ideas" (interested in comparing and contrasting different points of view)

C. Passion

1) "Energy Involved with Subject" (pursuit of knowledge)

2) "Expansiveness and Inspiration" (broad perspective and interests, inspiration to students)

A number of the above dimensions and subdimensions were similar to those isolated in previous studies. For example, "Clarity of Expression," defined by French-Lazorik (1974) may well be included in the dimension of Poise where mastery and experience are rated. French-Lazorik's "Arousal of Student Interest," and her factor of "Stimulation or Motivation to Intellectual Activity," are certainly incorporated in the subdimension of "Expansiveness and

Inspiration" in the present study. Isaacson's et al. (1964) "Skill" appears to be similar to "Expertise"; "Structure" like "Organization" in this present study; and "Group Interaction" and "Student-Teacher Rapport" dimensions similar to the "Relationship to Students" subdimension in this present study. The "Personal Relations" factor of Costin and Grush (1973) is also similar to "Relationship to Students" while their "Vigor" factor appears to be similar to Passion in this study. The subdimension of "Openmindedness to Ideas" does not appear defined in previous studies, however.

Method

Unlike previous research which stressed the efficacy of various teaching styles (e.g., Dowaliby and Schumer, 1973; Domino, 1971; and Baird, 1973), the perspective of this present study selected "Outstanding" and "Other" professors for analysis. The approach employed in this study allowed for the inclusion of more information than would otherwise have been obtained from a more limited perspective of examination of teaching styles. This approach included the study of these professors in three broad dimensions: 1) the varying perspectives and expectations of faculty and students; 2) an in-depth, personal view of these professors in their academic milieu other than the classroom proper; and 3) objective assessments through the use of observers.

Combs and Snygg had postulated that effective teachers held more accurate views of their classroom behavior than did less effective teachers. This hypothesis had not been explored in previous research. This dimension was tested by the transcription of professors' perspectives of their classes to the questionnaire in the form of the Congruity question (30).

These various research methods yielded significant, vivid information concerning the differences between "Outstanding" and "Other" professors.

Limitations of the Study

It appeared that differentiating between outstanding and other faculty members would be an impossible task. The experiences of interviewing the professors in this study, the comments made by observers and the opinions of the tape auditors made it clear that there was a high quality of teaching at the University of Michigan. All the professors in this study appeared to be interested in the topic of teacher effectiveness by their willingness to participate voluntarily. They agreed to take time for a taped interview concerning their views of the teaching-learning process. They agreed to cooperate in collecting student evaluations about themselves, and they did allow observers into their classrooms. It appeared that all of these professors as a group were successful and committed to high quality teaching performance and might very well be difficult to compare for differences.

Another factor which might have reduced differences between groups was the purposeful avoidance of choosing professors on the basis of "high" and "low" evaluations, but rather the deliberate inclusion of "superior" and "above average" teachers in the "other" group.

Another factor which should be mentioned is the nature of the original department evaluations upon which was based the selection of "Outstanding" and "Other" faculty. In cases where the question "overall teaching effectiveness" appeared on original evaluations, those scores were used for faculty selection. In other cases, averages of questions dealing with instructor characteristics were used. In some of these cases, questions similar to the ones on the questionnaire used in this study were in the original evaluations. However, there were also dissimilar questions on these evaluations; e.g., assessment of instructor's "speaking ability" and "use of a variety of methods." The significant findings in this study, nevertheless, not only measure differences in dimensions of specific teaching attributes between "Outstanding" and "Other" professors, but also measure the differences in their self-perceptions, their estimates of student response, and the differences in importance attached to these dimensions by different groups.

Although significant findings were observed, another item which should have been considered in this study was the control of class size. Professors in original evaluations were judged by classes of certain sizes. In order

to minimize the possibility of changes in student evaluations between the original criteria and the criteria used in this present study, similar enrollments for these professors in the classes evaluating them and in the classes used in the study should have been controlled.

Despite the limitations mentioned above, there were a number of significant differences established between the "Outstanding" and "Other" professors in this study.

Significant Findings in Poise, Humanitas and Passion

One of the most significant findings of this study was that the "Outstanding" professors as a group were rated higher by their students in the total of all three dimensions of Poise, Humanitas and Passion than did the students of the group of "Others." The composite picture from these findings of the "Outstanding" professors as compared to "Others" is that they are perceived by their students as being 1) more at ease in the classroom; 2) more masterful of their subjects; and 3) as having more teaching experience. These findings are different from those related by Tolor's study (1963) which found that students perceived their "ineffective" teachers as lacking in good teaching techniques but could not be discerned as lacking in "expertise." The students in Tolor's study, however, were at the secondary level, and this may account for the difference. Students at the University level may very well be able to discriminate in this dimension.

The "Outstanding" professors were found to be 1) superior in relating to the needs of students; 2) more encouraging of their students' class participation; and 3) appeared to students as more genuinely empathic. These findings are similar to the dimensions of "Personal Relations" of Costin and Grush (1973) and Isaacson's et al. (1964) "Group Interaction" and "Student-Teacher Rapport," which were correlated with teacher effectiveness. The "Outstanding" professors were perceived as more concerned than were the "Other" professors with presenting different ideas and did not hesitate to discuss them. This characteristic is similar to the "Facilitating of Creativity" aspect studied by Chambers (1973). The "Outstanding" professors appear to have dedicated themselves to their subjects with greater energy, like the "Vigor" of Costin and Grush (1973). The "Outstanding" professors were perceived as more concerned with issues in the larger world, which is analogous to Baird's (1973) "Generalist" index. "Outstanding" professors were also viewed by their students as more successful in inspiring students to learn. This is similar to French-Lazorik's (1974) "Arousal of Student Interest" and "Stimulation or Motivation to Intellectual Activity."

In summary, the "Outstanding" professors did possess the three assumed attributes of therapists, Poise, Humanitas and Passion in significantly greater proportion than did the "Other" professors.

Significant Findings in Self-Perceptions, Estimates and Student Ratings

"Outstanding" professors as a group rated the importance of Poise, Humanitas and Passion significantly higher than did the "Other" professors. The "Outstanding" professors also rated themselves significantly higher in all of these dimensions than did the "Others." Does this mean that "Outstanding" professors valued these dimensions more highly? And consequently, did they put forth greater efforts in these areas? They were perceived by their students as possessing these characteristics in greater abundance, certainly, than were the "Others."

Although the "Outstanding" professors perceived themselves as high in Poise, Humanitas and Passion, they underestimated significantly their students' ratings of them. The data from 1) their self-perceptions; 2) their estimates of student response; and 3) their students' actual response support the view that these "Outstanding" professors think highly of themselves in these dimensions and believe these dimensions to be important. Despite evidence to the contrary (student evaluations) they believe that their students do not rate them as highly as they truly are. "Outstanding" professors could be described as possessing realistically enormous egos (their high self-perceptions are corroborated by high student evaluations of dimensions which these professors prize), but they seem to be driven by ever the more demanding super egos (their

estimates of student response which are unrealistic and therefore can never be satisfied).

In contrast, the "Other" professors' estimate of their student response was not significantly different from their actual students' response concerning the degree to which they possessed these characteristics. The "Other" professors appear to have a more realistic appraisal of themselves as they appear to their students. They perceive themselves lower in these dimensions than the "Outstandings"; and are in fact perceived lower by their students. The crucial difference may be that these "Other" professors attach significantly less importance to these dimensions than do the "Outstandings" and also attach less importance to these dimensions than do their students. The "Other" professors, unlike the "Outstandings," in some dimensions (see Fig. 3) even underestimate the importance their students attach to these dimensions. Are these "Other" professors engaged in a self-fulfilling prophecy bind? Do they need to feel that these characteristics are not very important and therefore they do not need to excel in these dimensions? Do they need to believe that their students also do not attach importance to these dimensions in order to feel comfortable with their status quo?

What Harry Stack Sullivan (1975) terms the "dynamism of selective inattention" appears to be operating in both the "Outstanding" and "Other" groups. It appears that "Other" professors must attach significantly less importance

to these characteristics than do their "Outstanding" colleagues and their students. Why do they need to believe that their students attach less importance to these characteristics when this is not the case? On the other hand, why do the "Outstanding" professors need to believe that their students perceive them significantly lower in these attributes than their students actually do or than these professors actually perceive themselves? The "Outstandings" selectively unattend to the high esteem of their students, while the "Other" professors selectively unattend to the importance their students place on these various dimensions. While these factors of inattention may provide clues to the differences in drive and therefore achievement between the "Outstandings" and "Others," the motivation behind this dynamism of selective inattention is still a matter for speculation. If both groups were to give up their dynamisms of selective inattention and perceive clearly what they protect themselves from viewing, what would be the outcome? For the "Other" professors to recognize clearly the importance that students place on the characteristics in this study could mean that these professors would need to work hard at changing themselves. Or they would have to find some way to live at peace with the knowledge that they are not living up to their students' expectations if they do not care to change. If the "Outstanding" professors were to confront the true esteem their students hold for them then there would be less

reason for them to extend themselves in these dimensions to the extent that they do. They would be left without this insurmountable challenge. Perhaps, then, an examination of these characteristics and dynamisms has served to define the differences between these two groups. The "Other" professors appear to need self-protection and stabilization while the "Outstanding" professors fulfill their need for an "ongoing challenge." Perhaps, after all, this model of the "Outstanding" professors serves their students beneficially as would such a model serve the clients of therapists.

Significant Findings by Dimension Comparing "Outstanding" and "Other" Professors on Professor, Student, Observer and Tape Auditor Data

An examination of significant findings by dimension using the data from Professors, Students, Observers and Tape Auditors showed differences between "Outstanding" and "Other" professors and also revealed new perspectives concerning the other raters and their values as well.

Poise

In faculty self-perceptions, "Outstandings" rated themselves significantly higher in Poise than did the "Other" professors. In the faculty estimates of student response, there was no significant difference between the "Outstandings" and "Others." The students of the "Outstandings" rated them significantly higher than did the students of the "Others" in the subdimension "Expertise."

In the subdimension "Organization," the "Outstanding" professors, in their estimates of student response, rated this factor significantly more important than did their own students. The "Outstandings" also rated "Organization" significantly higher in importance than did the observers. The students of the "Others" rated "Organization" significantly more important than did the "Outstandings" students.

"Organization" is measured in part by Question 23 on the questionnaire having to do with clarification of the parameters of the subject. It is similar to the "Ambiguity" factor in Baird's study (1973) which correlated highly with negative evaluations of teaching success. "Organization" and "ambiguity" are two different sides of the same coin. These factors may be important in providing either a positive or negative halo effect in student evaluations of teaching. Perhaps the "Outstandings" are successful precisely because they believe that their students have high expectations for "Organization" and they strive to fulfill them. The factor of "Organization," however, was the only one rated higher in importance by the "Others'" students than by the "Outstandings'" students; yet there was no difference between the ratings of these students concerning descriptions of their respective professors. Specific behaviors and attributes may be difficult for students to discern but the attitudes their professors have may be subliminally transmitted and impressed upon these students. This could account for the unexpected high rating of this

characteristic in importance with no accompanying difference reported by the "Others'" students in this characteristic of "Organization."

Observers and "Outstandings'" students did not hold different views concerning the importance of "Organization," and the "Outstanding" professors estimated the students considered "Organization" significantly more important than both the observers and students did. The "Others'" students rated the importance of "Organization" higher than did the students of "Outstanding" professors as well as the observers. It appears likely that, were the "Others'" students in the "Outstandings'" classes, they would have rated this exactly as did the students in the "Outstandings'" classes. Therefore, this higher rating on the part of the "Others'" students may very well be taken as a sign of their concern.

A comparison of inordinately higher ratings on the part of observers in the importance of "Expertise" leads to some inferences about these participants in the study. Observers rated this dimension: 1) significantly higher than did the tape auditors for "Outstanding" professors; 2) significantly higher than the students in all classes for all professors; 3) significantly higher than all professors' self-perceptions; and 4) significantly higher than all faculty estimates of student response. These ratings were consistently high on this particular dimension compared with other observer ratings as they usually

related to the other groups. This might be accounted for by the fact that these observers were graduate teaching assistants. The questions relevant to this dimension appear to have bearing on the personal concerns of these conscientious and introspective teaching fellows. These questions are: 1) The instructor appears comfortable in his role as teacher; 2) The instructor is a masterful teacher of this subject; and 4) The instructor appears to have a good deal of teaching experience. Perhaps the observers have needs to gain more experience, to feel more comfortable and to achieve greater mastery of their subjects. Another reason for the observers' exaggerated stress in the importance of "Expertise" as compared to the other groups could be the reflection of differences in needs between graduate students (observers) and the largely undergraduate population in this study. Chambers (1973) mentions these differences in his study.

The significant differences between the tape auditors' high rating of the "Others" in "Expertise" as compared to these "Others'" students deserves mention. It appears that the "Other" professors are more poised in an in-depth, one-on-one interview than they are in the classroom. They may be in fact, experts in their fields and experienced in teaching, but they apparently fail to transmit these qualities in the classroom to the same extent that they do personally.

Humanitas

The tape auditors rated the "Others" significantly higher than did the observers in the subdimension, "Openmindedness to Ideas." This is similar to the case of "Expertise." Apparently "Others" appear to be higher in certain characteristics in an interview than they appear to be in the classroom.

There appeared to be only insignificant differences between the "Outstanding" and "Other" professors as they were rated in this characteristic of Humanitas by their students. However, a comparison of the Importance scale in the self-perception and estimate data between these professors reveals dramatic differences. The "Others'" students rate the importance of Humanitas and "Openmindedness to Ideas" significantly higher than these "Other" professors rate these dimensions in their self-perceptions and in their estimates of how they will be rated by students. Observers also rated the importance of Humanitas significantly higher than did the "Others" in their self-perceptions.

In contrast to the "Others," the "Outstanding" professors rated the importance of the total score for Humanitas and "Relationship to Students" significantly higher than did the "Others" in their self-perceptions. In the dimension of Humanitas and in the subdimensions, "Relationship to Students" and "Openmindedness to Ideas," the "Outstanding" professors estimated that their students

would rate the importance of these dimensions significantly higher than did the "Others." The "Outstandings'" self-perceptions and estimate regarding the importance of "Relationship to Students" was significantly higher than was their actual student response. Note that in the importance of "Relationship to Students" there was a significant difference between the "Outstandings'" higher self-perceptions and their estimate of student response, and yet there was also a difference between their higher rating of their estimate as compared to their students' response. It appears that in the importance of "Relationship to Students," the "Outstanding" professors hold very high personal standards. While their students agree as to its importance, they do not hold these professors to as high an accounting as these professors hold themselves. The resulting outcome is that these "Outstanding" professors deliver beyond their students' high expectations in their "Relationship to Students."

In comparison, there were no significant differences found between the "Others'" estimates or self-perceptions and their students in "Relationship to Students." What is more interesting is that their self-perceptions are significantly lower as compared with the "Outstandings" in the importance of this subdimension.

In the rating of Humanitas, the data showed that the "Outstandings" estimate the importance of Humanitas higher and the "Others" estimate its importance lower by a

comparison of: 1) their self-perception 2) their estimate of student response and 3) importance factors. This kind of information would not have been available from usual student evaluations. The data reported in this study provides a new perspective in the comparison of these two groups of professors. There appears to be a lower perception of these values on the part of the "Other" professors in Humanitas. In contrast, the evidence shows the "Outstanding" professors continuously enhance the value of this dimension.

Passion

In the tape auditors' opinion, the "Other" professors were rated significantly higher in the subdimension "Expansiveness and Inspiration," than these faculty members estimated their students would rate them. They also rated them higher than these "Other" faculty rated themselves in their self-perceptions. In fact, the "Others'" students and observers rated them significantly higher in "Expansiveness and Inspiration" and in total Passion than these faculty rated themselves in their self-perceptions.

The students of "Outstanding" professors rated them higher than did the students of "Others." The students of "Outstanding" professors also rated them higher in the two subdimensions, "Energy Involved with Subject" and "Expansiveness and Inspiration."

The "Outstanding" professors perceive themselves significantly higher than do the "Others" perceive

themselves in Passion and "Expansiveness and Inspiration." The "Outstanding" professors perceived themselves significantly higher in "Expansiveness and Inspiration" than they estimated their students would. The students of "Outstanding" professors rated them significantly higher in this subdimension and in the total score for Passion than their professors estimated. It appears that the students of the "Outstanding" professors perceive them as high in this attribute as they perceive themselves but that these professors underestimate their students' perceptions in this dimension. The students of the "Outstanding" professors rated them significantly higher than did observers for Passion and "Expansiveness and Inspiration." The tape auditors also rated these professors significantly higher in the subdimension "Energy Involved with Subject" as compared with the "Outstandings'" estimates.

Students of the "Outstanding" professors rated the dimension of Passion and "Expansiveness and Inspiration" significantly more important than did the students of the "Others." The "Outstandings" rated themselves significantly higher than the "Others" in their self-perceptions of the importance of Passion. The "Outstandings" also estimated that their students would rate the importance of Passion and its subdimension "Expansiveness and Inspiration" significantly higher than did the "Others." There was also a significant difference between the higher importance rating given by the "Outstanding" professors in their

self-perceptions and the observers' rating of the importance of "Expansiveness and Inspiration."

In importance of Passion, auditors, observers and students of "Others" rated this item significantly higher than did the "Others" in their self-perceptions. Observers also rated the importance of "Expansiveness and Inspiration" significantly higher than did these "Other" professors in their self-perception questionnaires. Similarly, in the case of the estimates of the "Others'" students, observers and tape auditors rated the importance of Passion higher than did these "Other" professors. In addition, auditors rated "Expansiveness and Inspiration" significantly higher in importance than the "Other" estimates.

Because there were no significant differences between the "Others'" self-perceptions and their estimates of student response, differences between groups were similar in comparison with both the estimates and the self-perceptions of these "Other" professors. Therefore, the "Other" faculty failed to make significantly different comparisons between their self-perceptions and their estimate of their students' views. That they held them to be very much the same is an interesting phenomenon in itself. In contrast, the "Outstanding" professors held significantly higher perceptions of themselves than they estimated their students did in the following subdimensions: "Openmindedness to Ideas," "Expansiveness and Inspiration," and in importance of "Relationship to Students."

The "Others'" low estimate of the importance of Passion, their lower self-perceptions of themselves in comparison with the "Outstandings" and the comparatively low rating these professors received from their students in the total dimension of Passion is interpreted to be a dreary circumstance. These "Other" professors appear to be in an undifferentiated world as far as their perceptions and values for this dimension are concerned. It is particularly unfortunate because this perspective on their part denies them the serendipity of others' high regard for them in the subdimension of "Expertise and Inspiration." Their students, observers and tape auditors unanimously found them significantly higher in this dimension than these "Other" perceived or even estimated. Here the mechanism of selective inattention (which may have been originally set into motion to defend against uncomplimentary data) inadvertently also denies these "Other" professors the adulation of their students when it does occur. In this case, the students of the "Other" professors regard them as dynamically involved with the world and an inspiration to their students, but unfortunately these professors are not aware of this.

The viewpoint of the "Outstandings" is in sharp contrast for this dimension. The "Outstanding" professors believe this dimension to be important, perceive that they are truly high in Passion, yet refuse to believe that their students perceive them as fully actualized in this

dimension as they believe they are capable of being. This disparity allows these "Outstanding" professors to feel that they are, indeed, excellent teachers, but also maintains the challenge to them of achieving even greater perfection as teachers in the service of their students.

CHAPTER VI

SUMMARY OF SIGNIFICANT FINDINGS AND IMPLICATIONS

Summary of Significant Findings

1) Factors of Poise, Humanitas and Passion were confirmed by analysis and further refined into subdimensions as follows:

   a) Poise

      I. "Expertise"

      II. "Organization"

   b) Humanitas

      I. "Relationship to Students"

      II. "Openmindedness to Ideas"

   c) Passion

      I. "Energy Involved with Subject"

      II. "Expansiveness and Inspiration"

2) Congruity

   Students of "Outstanding" professors showed a higher agreement with their professors' perceptions of their classes than did the "Others.'" "Outstanding" professors were therefore presumed higher in congruity than were "Other" professors.

3) Characteristics

   a) "Outstanding" professors were rated higher by their students in total score for All Characteristics (Poise, Humanitas and Passion) than were the "Other" professors.

   b) The students of "Outstanding" professors rated them higher in total score for All Characteristics (Poise, Humanitas and Passion) than these professors estimated.

4) Importance

a) "Outstanding" professors rated the total score for Importance of All Characteristics (Poise, Humanitas and Passion) significantly higher than did the "Others."

b) The students of the "Other" professors rated the total score for Importance of All Characteristics (Poise, Humanitas and Passion) significantly higher than did these "Other" professors.

5) Poise

a) On their self-perception questionnaires "Outstanding" professors perceived themselves higher in Poise than did the "Other" professors.

b) Students perceived "Outstanding" professors higher in "Expertise" than did students of "Other" professors.

c) "Outstanding" professors estimated their students would think "Organization" more important than did "Other" professors.

d) Students of "Other" professors thought "Organization" more important than did students of "Outstanding" professors.

6) Humanitas

a) "Outstanding" professors believed that they are more "Openminded to Ideas" than they estimated their students would rate them.

b) "Outstandings'" students rated them higher than these professors estimated in "Relationship to Students."

c) Students of "Outstanding" professors rated the importance of "Relationship to Students" higher than did the "Other'" students.

d) In their self-perceptions, "Outstanding" professors rated Humanitas and "Relationship to Students" as more important than did the "Other" professors.

e) In their estimate of student response, "Outstanding" professors thought that their students would rate Humanitas as more important than did the "Other" professors.

f) "Outstanding" professors thought that their students would rate the importance of "Relationship to Students" higher than their students actually did.

g) "Outstanding" professors viewed "Relationship to Students" as more important than they estimated their students would.

7) Passion

a) Students of "Outstanding" professors rated them higher in Passion, "Energy Involved with Subject" and "Expansiveness and Inspiration" than did students of "Other" professors.

b) The students of "Other" professors rated them higher in "Expansiveness and Inspiration" than these "Other" professors perceived themselves.

c) "Outstanding" professors rated themselves higher than did the "Other" in Passion.

d) "Outstanding" professors rated themselves higher than did the "Other" professors in "Expansiveness and Inspiration."

e) "Outstanding" professors rated themselves higher in "Expansiveness and Inspiration" than they estimated their students would.

f) The students of "Outstanding" professors rated these professors higher than the professors estimated they would in "Expansiveness and Inspiration" and Passion.

g) Students of "Outstanding" professors rated the importance of Passion and "Expansiveness and Inspiration" higher than did the "Others'" students.

h) "Outstanding" professors rated Passion more important than did "Other" professors.

i) In importance of Passion and importance of "Expansiveness and Inspiration," "Outstanding" professors estimated their students would rate these higher than did the "Other" professors estimate their students would.

j) Students of "Other" professors rated the importance of Passion higher than these "Other" professors estimated they would.

8) It is significant that there were no significant differences between the "Other" professors' self-perceptions and their estimate of student response regarding any of the characteristics.

9) It is significant that there were no significant differences between the "Outstanding" professors' self-perceptions and their students' ratings of them in the Degree of Characteristics; but for all these dimensions, "Outstanding" professors rated them to be more important than did their students.

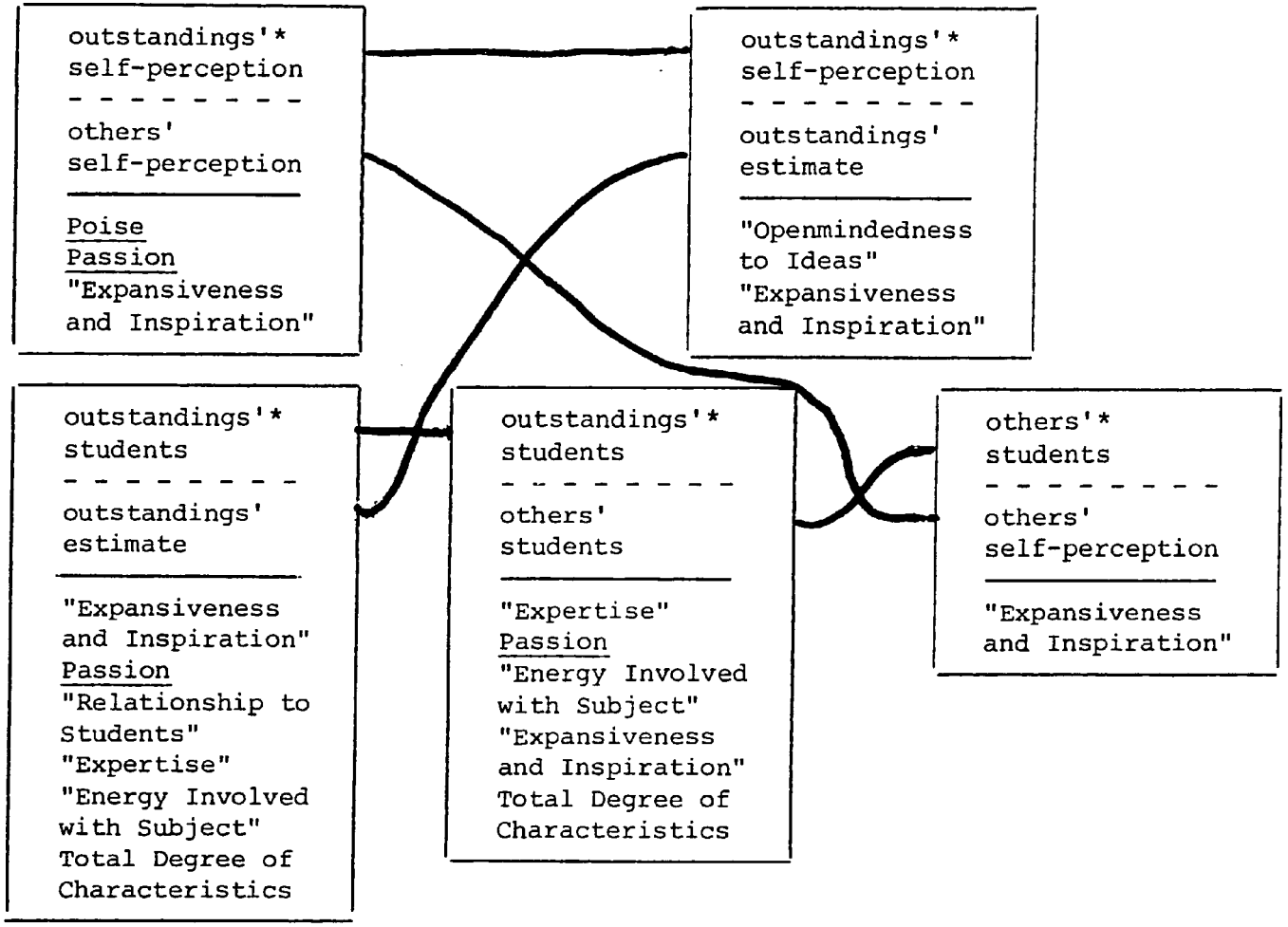
10) Figures 2 and 3 which follow graphically illustrate in Degree of Characteristics and Importance of Characteristics the significant differences in the comparison of faculty and student data. In each square, the data labeled above the dotted line and asterisked indicates the scores significantly higher than the data indicated below the dotted line. Below the closed straight line, the dimensions found to be significantly different are listed. Heavy lines help the reader locate where the same data is compared with other data.

Implications

The significant findings in this study have implications for conjectures about the motivations which differentiated the "Outstanding" and "Other" professors, the possibilities for further research in this subject, and the need for pre-service and in-service training for professors in higher education.

One question which might be asked is: To what extent is the questionnaire formulated for this study a representation of characteristics of personality rather than an assessment of the implementation of professional behaviors which are amenable to change? Although this questionnaire is more detailed and unusual because it incorporates both a degree and importance scale, to what extent does this questionnaire measure attributes different from student

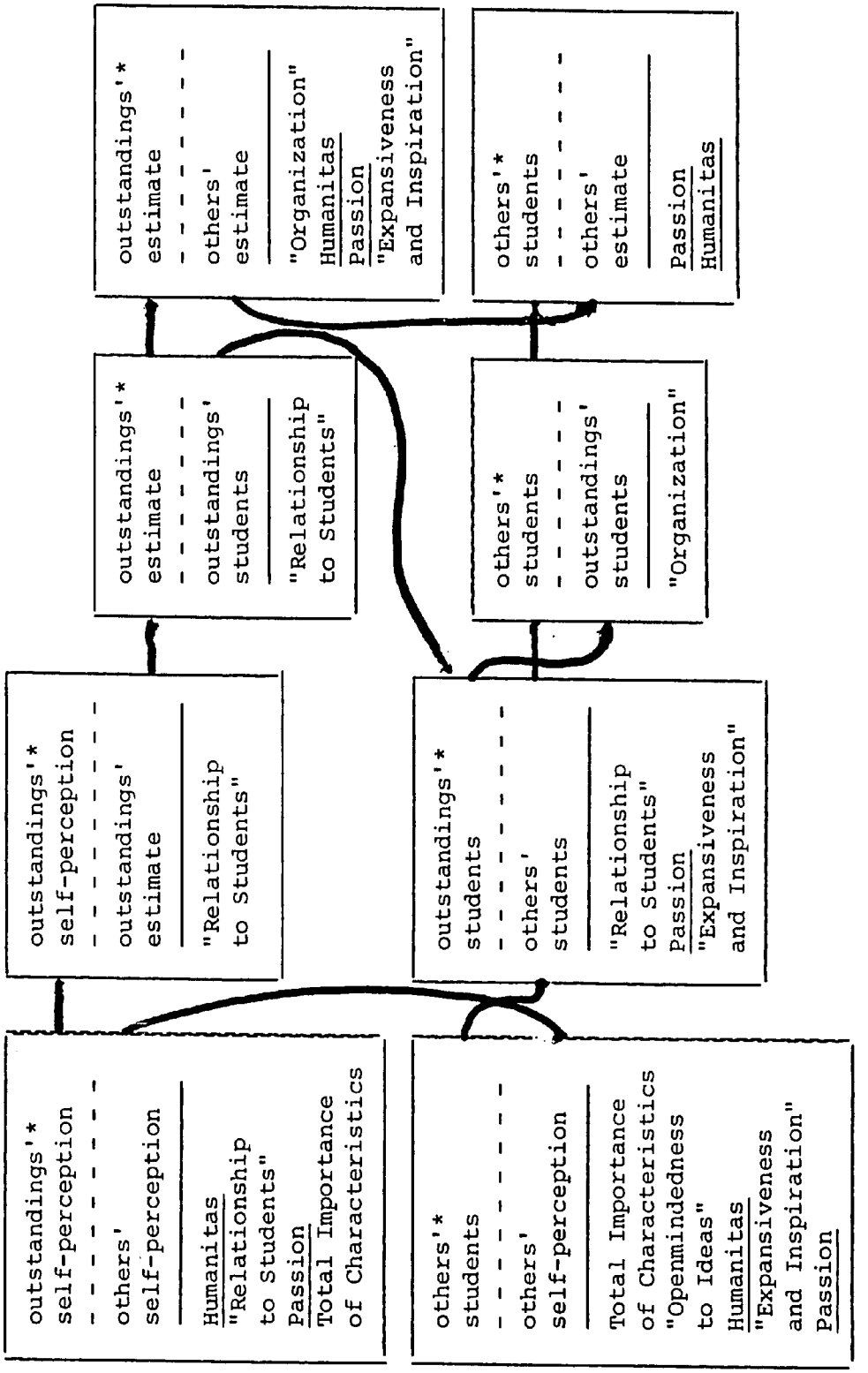
FIGURE 2
STUDENT AND FACULTY DATA COMPARING SIGNIFICANT DIFFERENCES IN THE RATINGS OF DEGREE OF CHARACTERISTIC



*significantly higher rating

FIGURE 3

STUDENT AND FACULTY DATA COMPARING SIGNIFICANT DIFFERENCES IN THE RATINGS OF IMPORTANCE OF CHARACTERISTICS



*significantly higher rating

evaluations already in use? Further, would this kind of questionnaire be more useful to instructors for professional development? All the professors in this study presumably had access to their department student evaluations, but as one professor in this study indicated afterwards, instructors see what they wish to in their student evaluations. Perhaps this kind of questionnaire which incorporates more information, particularly the assessment by students of the importance of certain characteristics, in tandem with the university's provision of in-service training programs for professional growth and change would be more helpful than the present state of affairs which includes terse feedback and little university-supportive resources for change.

The phenomenon of estimating students' evaluations of self as significantly lower than they were, but which were more congruent with self-perceptions was a significantly distinguishing characteristic of the "Outstanding" professors as compared with the "Others." This raises two interesting questions for 1) further research and 2) in-service training of faculty. Is this discrepancy a representation of modesty, openness to improvement or a self-imposed challenge for continued personal and professional growth? On the other hand, there were no significant differences between the estimates of the "Other" professors in their ratings of the degree of characteristics and their students' actual responses. However, in the assessment of the importance of these characteristics, both in their estimates

and their self-perceptions, the "Other" professors rated these items significantly lower than did their students or their "Outstanding" colleagues. Is the discrepancy in the "Others'" case indicative of a resistance to change or their lack of opportunity for change via some university provided supportive resources?

Two professors in this study, one "Outstanding" and one "Other" both volunteered felt needs for some kind of professional teacher training. While it is likely that the inclusion of both "Outstandings" and "Others" would be desirable since "Outstandings" could share their higher valuing of certain professional characteristics and "Others" could share their more realistic assessments, two questions are raised. If "Outstanding" professors were to confront the discrepancy between their estimates and their students' high esteem, would they be less likely to pursue their present striving toward greater excellence? The second question is, if "Other" professors were to participate in such training, would they undergo a change in their value system and professional performance? It would be interesting to find the answers to these questions in the context of a teacher-training program which would provide 1) instructors with new pathways to follow should change be desired; 2) support groups of colleagues who would help implement and encourage change strategies; 3) help in conducting ongoing self-evaluations; and 4) the development

of instruments to gather further information concerning their students' perspectives.

The use of the method of comparing perceptions and values has proven to be fruitful in this present research. Further studies in teacher effectiveness might well adopt this approach. In fact, this method might be utilized to define further areas of inquiry. It could be used to poll students, alumni, faculty and administrators concerning their ideas about factors indigenous to teacher effectiveness. The Importance scale could aid in rank ordering the factors which most concern these groups.

These are the implications of the significant findings as found in this study.

APPENDICES

APPENDIX I

QUESTIONNAIRE
(With Sample Congruity Question 30)

TO THE STUDENT: Please be advised that in accordance with the principles of the Committee on Human Subjects at the School of Education, your confidentiality and anonymity will be preserved in this study. In order to insure this, will you please complete this questionnaire ANONYMOUSLY.

QUESTIONNAIRE

DIRECTIONS: Below is a list of characteristics. Please mark these appropriately as you believe them to describe your instructor. In the left hand column indicate the degree to which the statement characterizes your instructor. In the right hand column indicate to what extent you believe this characteristic to be important in this particular class.

DEGREE		IMPORTANCE IN THIS CLASS
very characteristic (1) characteristic (2) sometimes (3) hardly at all (4) never (5)	1. The instructor appears comfortable in role as teacher.	very important (1) important (2) slightly important (3) neutral (4) not important at all (5)
very characteristic (1) characteristic (2) sometimes (3) hardly at all (4) never (5)	2. The instructor is a masterful teacher of this subject.	very important (1) important (2) slightly important (3) neutral (4) not important at all (5)
very characteristic (1) characteristic (2) sometimes (3) hardly at all (4) never (5)	3. The instructor appears to remain calm if there are any interruptions or questions.	very important (1) important (2) slightly important (3) neutral (4) not important at all (5)
very characteristic (1) characteristic (2) sometimes (3) hardly at all (4) never (5)	4. The instructor appears to have had a good deal of teaching experience.	very important (1) important (2) slightly important (3) neutral (4) not important at all (5)

very characteristic (1) characteristic (2) sometimes (3) hardly at all (4) never (5)	5.	The instructor relates his subject matter to issues in the larger world beyond the university.	very important (1) important (2) slightly important (3) neutral (4) not important at all (5)
very characteristic (1) characteristic (2) sometimes (3) hardly at all (4) never (5)	6.	The instructor connects his subject matter to subject matter in related fields.	very important (1) important (2) slightly important (3) neutral (4) not important at all (5)
very characteristic (1) characteristic (2) sometimes (3) hardly at all (4) never (5)	7.	The instructor connects his subject matter to subject matter in seemingly unrelated fields.	very important (1) important (2) slightly important (3) neutral (4) not important at all (5)
very characteristic (1) characteristic (2) sometimes (3) hardly at all (4) never (5)	8.	The instructor refers the student to supplementary readings and/or other materials.	very important (1) important (2) slightly important (3) neutral (4) not important at all (5)
very characteristic (1) characteristic (2) sometimes (3) hardly at all (4) never (5)	9.	The sequence of presentation of material is effectively organized.	very important (1) important (2) slightly important (3) neutral (4) not important at all (5)
very characteristic (1) characteristic (2) sometimes (3) hardly at all (4) never (5)	10.	The instructor is interested in considering ideas which conflict with each other.	very important (1) important (2) slightly important (3) neutral (4) not important at all (5)

very characteristic	(1)	11. The instructor is interested in considering ideas which conflict with his own ideas.	very important	(1)
characteristic	(2)		important	(2)
sometimes	(3)		slightly important	(3)
hardly at all	(4)		neutral	(4)
never	(5)		not important at all	(5)
very characteristic	(1)	12. The instructor is interested in considering ideas which are new to him.	very important	(1)
characteristic	(2)		important	(2)
sometimes	(3)		slightly important	(3)
hardly at all	(4)		neutral	(4)
never	(5)		not important at all	(5)
very characteristic	(1)	13. The instructor assumes the responsibility for planning and maintaining the learning activities for students in this class.	very important	(1)
characteristic	(2)		important	(2)
sometimes	(3)		slightly important	(3)
hardly at all	(4)		neutral	(4)
never	(5)		not important at all	(5)
very characteristic	(1)	14. The instructor purposefully plans opportunities for student participation in this class.	very important	(1)
characteristic	(2)		important	(2)
sometimes	(3)		slightly important	(3)
hardly at all	(4)		neutral	(4)
never	(5)		not important at all	(5)
very characteristic	(1)	15. The instructor keeps the discussion on point unless digressions are important for learning.	very important	(1)
characteristic	(2)		important	(2)
sometimes	(3)		slightly important	(3)
hardly at all	(4)		neutral	(4)
never	(5)		not important at all	(5)
very characteristic	(1)	16. The instructor encourages student participation.	very important	(1)
characteristic	(2)		important	(2)
sometimes	(3)		slightly important	(3)
hardly at all	(4)		neutral	(4)
never	(5)		not important at all	(5)

very characteristic (1)	17. The instructor is supportive to student participation when it occurs.	very important	(1)
characteristic (2)		important	(2)
sometimes (3)		slightly important	(3)
hardly at all (4)		neutral	(4)
never (5)		not important at all	(5)
very characteristic (1)	18. The instructor appears to be able to empathize with concerns of students.	very important	(1)
characteristic (2)		important	(2)
sometimes (3)		slightly important	(3)
hardly at all (4)		neutral	(4)
never (5)		not important at all	(5)
very characteristic (1)	19. The instructor appears to understand clearly the questions students ask.	very important	(1)
characteristic (2)		important	(2)
sometimes (3)		slightly important	(3)
hardly at all (4)		neutral	(4)
never (5)		not important at all	(5)
very characteristic (1)	20. The instructor responds to the intellectual and emotional needs of students.	very important	(1)
characteristic (2)		important	(2)
sometimes (3)		slightly important	(3)
hardly at all (4)		neutral	(4)
never (5)		not important at all	(5)
very characteristic (1)	21. The instructor is courteous to students.	very important	(1)
characteristic (2)		important	(2)
sometimes (3)		slightly important	(3)
hardly at all (4)		neutral	(4)
never (5)		not important at all	(5)
very characteristic (1)	22. The instructor appears to be interested in pursuing ideas in great depth.	very important	(1)
characteristic (2)		important	(2)
sometimes (3)		slightly important	(3)
hardly at all (4)		neutral	(4)
never (5)		not important at all	(5)

very characteristic	(1)	23. The instructor makes clear which aspects of the subject are well established, which are known only to some degree, and which are in need of further development.	very important	(1)
characteristic	(2)		important	(2)
sometimes	(3)		slightly important	(3)
hardly at all	(4)		neutral	(4)
never	(5)		not important at all	(5)
very characteristic	(1)	24. The instructor appears to have spent a good deal of time and energy in learning his subject.	very important	(1)
characteristic	(2)		important	(2)
sometimes	(3)		slightly important	(3)
hardly at all	(4)		neutral	(4)
never	(5)		not important at all	(5)
very characteristic	(1)	25. The instructor appears to understand what it is like to be a student.	very important	(1)
characteristic	(2)		important	(2)
sometimes	(3)		slightly important	(3)
hardly at all	(4)		neutral	(4)
never	(5)		not important at all	(5)
very characteristic	(1)	26. The instructor appears to be ongoingly involved in learning more about his subject or keeping	very important	(1)
characteristic	(2)		important	(2)
sometimes	(3)		slightly important	(3)
hardly at all	(4)		neutral	(4)
never	(5)		not important at all	(5)
very characteristic	(1)	27. The instructor is energetic.	very important	(1)
characteristic	(2)		important	(2)
sometimes	(3)		slightly important	(3)
hardly at all	(4)		neutral	(4)
never	(5)		not important at all	(5)

very characteristic	(1)	28.	The instructor creates student learning during the course.	very important	(1)
characteristic	(2)			important	(2)
sometimes	(3)			slightly important	(3)
hardly at all	(4)			neutral	(4)
never	(5)			not important at all	(5)

very characteristic	(1)	29.	The instructor inspires the students to pursue learning beyond the course requirements.	very important	(1)
characteristic	(2)			important	(2)
sometimes	(3)			slightly important	(3)
hardly at all	(4)			neutral	(4)
never	(5)			not important at all	(5)

Below is a statement that may describe your class. On the scale below, please circle the number that best indicates the extent to which this statement is characteristic of your class.

The instructor has a vast storehouse of experience in the field from which he can draw and adapt to the particular course level he happens to be teaching. This course provides students with an introduction to this area to round out a broad, general knowledge of this field, to view this field as an area of possible major interest; and for those planning further study, it acts as a springboard. Besides learning the basic principles appropriate to this course level, students are trained to think in problem solving terms rather than by memorizing facts.

To a Great Extent — Not at All

1 2 3 4 5 6 7 8

APPENDIX II

INTERVIEW FORMAT

QUESTION I. How would you describe the content of your course?

In order to assess:

A. Quantity and quality of involvement with subject

B. Perspective of subject matter in relation to other subjects

C. Perception of subject to the larger world, the past and the future

D. Commitment to the "pursuit of truth."

QUESTION II. What kinds of things do you do outside the classroom which would be described as professional involvement or development?

In order to assess:

A. How the instructor expands his/her ideas, e.g., professional journals--an example of a current article read, current research

B. Extent of professional interaction with colleagues in the same, related or other fields--meetings both formal and informal

C. Contact with advanced students in the field

QUESTION III. What kinds of concerns do you have about the students in your class?

In order to assess:

A. To what extent the students are considered

B. Ways in which students are considered, e.g., why students are taking the course, emotional needs

of students, level of students' interest and capability, what students are expected to take away, relevance, other

QUESTION IV. How do you go about preparing for class?

In order to assess:

A. The number of elements considered in choice of content

B. The number of elements considered in choice of method

GENERAL STATEMENT

QUESTION V. What is your personal philosophy, theory or value system concerning your class as a vehicle for learning your particular subject?

QUESTION VI. What kinds of goals do you have for your class and how do you plan your class so that these goals are achieved?

QUESTION VII. Specifically, what kinds of things do you <u>do</u> in your class to achieve these goals?

BIBLIOGRAPHY

Anderson, R. C. "Learning in Discussion: A Resume of the Authoritarian-Democratic Studies." Harvard Educational Review, 29 (1959), 201-15.

Baird, Leonard L. "Teaching Styles: An Exploratory Study of Dimensions and Effects." Journal of Educational Psychology, Vol. 64, No. 1 (1973), 15-21.

Cantor, N. The Dynamics of Learning. Buffalo: Foster and Stewart, 1946.

Chambers, Jack A. "College Teachers: Their Effect on Creativity of Students." Journal of Educational Psychology, Vol. 65, No. 3 (1973), 326-34.

Chessick, Richard D. The Technique and Practice of Intensive Psychotherapy. New York: Jason Aronson, Inc., 1974.

Combs, Arthur W. and Donald Snygg. Individual Behavior: A New Frame of Reference for Psychology, 2nd ed. New York: Harper and Bros., 1959.

Costin, Frank. "Empirical Test of the 'Teacher-Centered' versus 'Student-Centered' Dichotomy." Journal of Educational Psychology, Vol. 62, No. 5 (1971), 410-12.

Costin, Frank and Joseph E. Grush. "Personality Correlates of Teacher-Student Behavior in the College Classroom." Journal of Educational Psychology, Vol. 65, No. 1 (1973), 35-44.

Deshpande, A. S., S. C. Webb and E. Marks. "Student Perceptions of Engineering Instructor Behaviors and Their Relationships to the Evaluation of Instructors and Courses." American Educational Research Journal, 7 (1970), 289-306.

Dixon, Wilfrid J. and Frank J. Massey, Jr. Introduction to Statistical Analysis, 2nd ed. New York: McGraw-Hill Book Co., Inc., 1957.

Dollard, John and Neal E. Miller. "Requirements of the Therapist as a Special Kind of Teacher." Personality and Psychotherapy. New York: McGraw-Hill, 1950.

Domino, George. "Interactive Effects of Achievement Orientation and Teaching Style on Academic Achievement." Journal of Educational Psychology, Vol. 12, No. 4 (1971), 427-31.

Dowaliby, Fred J. and Harry Schumer. "Teacher-Centered versus Student-Centered Mode of College Classroom Instruction as Related to Manifest Anxiety." Journal of Educational Psychology, Vol. 64, No. 2 (1973), 125-32.

Ellenberger, Henri F. "A Clinical Introduction to Psychiatric Phenomenology and Existential Analysis." Eds. Rollo May, Ernest Angel and Henri F. Ellenberger. Existence. New York: Simon and Schuster, 1958.

Faw, Volney E. "A Psychotherapeutic Method of Teaching Psychology." American Psychologist, 4 (1949), 104-09.

French-Lazorik. "Predictability of Students' Evaluations of College Teachers from Component Ratings." Journal of Educational Psychology, Vol. 66, No. 3 (1974), 373-85.

Getzels, J. W. and P. W. Jackson. "The Teacher's Personality and Characteristics," in Gage, N. L. (ed.), Handbook of Research on Teaching. Chicago: Rand McNally, 1963.

Gross, L. "An Experimental Study of the Validity of the Non-Directive Method of Teaching." Journal of Psychology, 26 (1948), 243-48.

Isaacson, R. L., W. J. McKeachie and J. E. Milholland. "Correlation of Teacher Personality Variables and Student Ratings." Journal of Educational Psychology, 7 (1963), 110-17.

Isaacson, R. L., W. J. McKeachie, J. E. Milholland, Y. G. Lin, M. Hofellar, J. W. Baerwaldt and K. L. Zinn. "Dimensions of Student Evaluations of Teaching." Journal of Educational Psychology, 55 (1964), 344-55.

Jaeger, Richard M. and Tom D. Freijo. "Some Psychometric Questions in the Evaluation of Professors." Journal of Educational Psychology, Vol. 66, No. 3 (1974), 416-23.

Jones, Ernest. The Life and Work of Sigmund Freud. Eds. Lional Trilling and Steven Marcus. New York: Basic Books, Inc., 1961.

Kelley, Earl C. Education for What is Real. New York: Harper and Bros., 1947.

Kerlinger, Frederick N. Foundations of Behavioral Research; Educational and Psychological Inquiry [by] Fred N. Kerlinger. New York: Holt, Rinehart and Winston, 1964.

Koch, Sigmund, ed. Psychology: A Study of Science. Vol. III. New York: McGraw-Hill, 1955.

Levinthal, Leonard, M. Lansky and O. Ernewt Andrews. "Student Evaluation of Teacher Behavior as Estimations of Real-Ideal Discrepancies: A Critique of Teacher Rating Methods." Journal of Educational Psychology, Vol. 62, No. 2 (1971), 104-09.

McKeachie, W. J. "A Dialogue with W. J. McKeachie." Research News, Vol. XXIII, No. 6. University of Michigan, Ann Arbor, Dec., 1972.

_____. "Research on College Teaching." Memo to the Faculty, No. 44. University of Michigan, Ann Arbor, May, 1971.

Rogers, Carl. Client-Centered Therapy. Boston: Houghton Mifflin Co., 1951.

_____. Freedom to Learn. Columbus, Ohio: Charles E. Merrill Publishing Co., 1969.

Ryans, D. G. Characteristics of Teachers: A Research Study. Washington, D.C.: American Council on Education, 1960.

Seidman, Jerome M. "Perception of Self and Others in the Helping Relationship." Educating for Mental Health, 1963.

Smith, D. E. P., A. L. Wood, J. W. Downer and A. L. Raygor. "Reading Improvement as a Function of Student Personality and Teaching Method." Journal of Educational Psychology, 47 (1956), 47-58.

Sullivan, Arthur M. and Graham R. Skanes. "Validity of Student Evaluation of Teaching and the Characteristics of Successful Instructors." Journal of Educational Psychology, Vol. 66, No. 4 (1974), 584-90.

Solomon, D. W. E. Bezdeck, and L. Rosenberg. Teaching Styles and Learning. Chicago: Center for the Study of Liberal Education for Adults, 1966.

Sullivan, Harry Stack. Clinical Studies in Psychiatry. Ed. Helen Swick Perry, Mary Ladd Gawel and Martha Gibbon. New York: W. W. Norton & Co., Inc., 1973.

Symonds, P. A. "Education and Psychotherapy." Journal of Educational Psychology, 40 (1949), 1-32.

Tolor, Alexander. "Evaluation of Perceived Teacher Effectiveness." Journal of Educational Psychology, Vol. 64 (1973), 98-104.

Wolff, Werner. Contemporary Psychotherapists Examine Themselves: An Evaluation of Facts and Values Based Upon Guided Interviews with Forty-three Representatives of Various Schools. Springfield, Illinois: Charles C. Thomas, 1956.