

A STUDY OF FACTORS OF EFFECTIVE TEACHING AS PERCEIVED
BY STUDENTS IN A COMMUNITY-JUNIOR COLLEGE

by

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CHAPTER I

INTRODUCTION

In recent years, faculty evaluation has come into focus primarily because of students and their effort to gain a place in the power structure of the university and the move toward accountability at all levels of the public sector. Major studies by Gustad (47), in 1961 and 1966, reported that colleges and universities evaluated teaching performance through chairman evaluations, informal student opinion, classroom visits, colleague opinion, dean evaluations, systematic student evaluations, scholarly research and publication, and committee evaluation for the expressed purposes of faculty promotion, salary increases, tenure, and the improvement of teaching.

Tyler views evaluation as follows:

The process of evaluation is essentially the process of determining to what extent the educational objectives are actually being realized by the program of curriculum and instruction. (93:69)

The concept of evaluation as viewed by Stake and Denny is:

Considered broadly, evaluation is the discovery of the nature and worth of something. In relation to education, we may evaluate students, teachers, curriculums, administrators, systems, programs, and nations. The purposes for our evaluation may be many, but always,

evaluation attempts to describe something and to indicate its perceived merits and shortcomings. Evaluation is not a search for cause and effect, an inventory of present status, or a prediction of future success. It is something of all of these, but only as they contribute to understanding substance, function, and worth. (89:370)

Paul Dressel (30:25) considers evaluation as a concept which can help to insure that all activities contribute to educational goals. As he relates, "Properly conceived, evaluation is not separate from instruction and learning; it is an integral part of both" (31:538). But as Dressel points out, "Evaluation involves judging the worth of an experience, idea or process. The judgments presuppose standards or criteria" (30:6).

Bolton defines criterion "as a standard of attainment against which comparisons may be made" (11:102). He gives as an alternate definition that criterion is "the behavior and results of behavior actually attained by a teacher on the job" (11:102). Continuing, Bolton states, "The selection of criteria is a crucial step to the evaluation process, since it becomes the basis for identifying the specific teacher behaviors and results of behavior that are desired" (11:102).

Mitzel notes that:

. . . more than a half-century of research effort has not yielded meaningful, measurable criteria around which the majority of the nation's educators can rally. No standards exist which are commonly agreed upon as the criteria of teacher effectiveness. (72:1481)

He suggests that more powerful statistical methods will help to identify relationships between teaching behaviors and their effects. Furthermore, he expresses the fact that "teacher effectiveness as a concept has no meaning apart from the criterion measures or operational definitions of success as a teacher" (72:1482).

David Ryans writes that we have made "embarrassingly little progress" in finding out "the details that are necessary for describing competent teaching" (85:2). In addition, he states, "Adequate descriptions of major teacher characteristics, which might provide a basis for studying the relationships of teacher behavior to the varying objectives of teaching and concepts of teaching competence, have not been developed" (85:4).

Cohen and Brawer contend that most research evaluating teaching has been concentrated at the elementary and secondary levels of education.

We know little about the factors in good evaluation of junior college instructors. One reason for the dearth of information is that in the extensive material devoted to assessment, the evaluation of college teaching has not received the critical attention it deserves and needs. In fact, although much lip service is paid to the importance of the good instructor, few criteria for appraising the quality of college teaching have been established. (19:177)

Even though no criterion or set of criteria of what constitutes effective teaching has had complete approval by researchers, both H. H. Remmers (82) and B. O. Smith (88) reveal that two criteria have emerged more often than others

for evaluating teachers. The first criterion is that of pupil change, defined in terms of achievement, abilities, habits, attitudes, or other characteristics brought about as the direct result of teaching. The second criterion is that of a set of teacher characteristics or behaviors which are considered to be related to the teacher's effectiveness in bringing about desirable changes in students. The characteristics are usually built into and evaluated on a rating scale.

Dressel proposes that teacher effectiveness be evaluated by student perception as well as instructor and peer appraisal. He emphasizes evaluation of classroom behavior rather than personality traits, because "it makes more sense to consider what a teacher does rather than what he is" (32:306). Jiobu and Pollis go as far as to suggest that an alternate criterion to determine effective teaching should be "the opinion of students about course and instructors" (56:317).

Studies by Remmers (82), Eble (36), and McKeachie (65), primarily on the university and four-year college level, have found that students can make reliable and valid judgments about teaching. Writing about student evaluation of teaching in the junior college, Boyer states, ". . . when properly administered, they provide the best criterion of the quality of instruction" (12:no page).

Students' perceptions of what happens to them in the course of, and as a result of, their interaction with a given instructor may be as valuable as any data we can now acquire about that instructor's performance. If we grant the legitimacy of using evaluation by students as one means of assessing course and teaching effectiveness, it becomes apparent that more information is needed about what factors (criteria) the students perceive as relating to effective teaching. This is particularly true at the community-junior college level where the primary function of the faculty is teaching.

Statement of the Problem

Before the process of instructor evaluation can take place, there should be a criterion or set of criteria upon which to compare the outcomes of the evaluation. Since one method of evaluating teaching is through the use of rating forms completed by students, their perceptions of what they consider to be effective teaching could help to establish such criteria. Perhaps, because of the uniqueness of the community-junior college, research has been limited in the seeking of criteria of effective teaching, even though the institution, with its primary purpose of teaching, its multi-purposed educational roles, its heterogeneous and non-traditional student body, provides a fertile base for seeking such criteria.

Purposes of the Study

The two major purposes of the study were:

1. To identify the criteria factors of effective teaching as perceived by students at San Antonio College.
2. To determine if there was any significant relationship between these criteria factors of effective teaching and certain student, faculty, and course characteristics.

Limitations of the Study

1. The study involved only San Antonio College, a large, urban, public community-junior college.
2. The study included only full time instructional faculty of San Antonio College.
3. The study included only students enrolled in day classes of San Antonio College in the spring semester of 1974-1975 school year.
4. Student perceptions of faculty teaching were obtained from an administration of the Faculty Rating Questionnaire.

Definition of Terms

As an assistance to the reader, the following terms are defined:

1. Faculty Rating Questionnaire refers to a rating scale for the evaluation of instruction developed by the Mathematics Department of San Antonio College.

2. Instructor or Teacher denotes any full time faculty member of any rank in an institution of higher learning.

3. Faculty Evaluation or Rating is the process by which faculty members receive a performance assessment.

4. Criteria Factor of Effective Teaching is a trait perceived by students relating to the quality of teaching.

Research Questions

The relationships to be investigated in this paper come under three broad hypotheses:

1. There is no significant relationship between the criteria factors of effective teaching and the sex, ethnic origin, age, classification, degree program, grade point average, course load, and work load of the student.

2. There is no significant relationship between the criteria factors of effective teaching and the sex, ethnic origin, age, teaching area, rank, tenure, teaching experience, academic preparation, and highest degree held by the instructor.

3. There is no significant relationship between the criteria factors of effective teaching according to required courses versus non-required courses, developmental studies courses versus non-developmental studies courses, and the meeting time of courses.

CHAPTER II

REVIEW OF THE LITERATURE

In recent years, probably no aspect of higher education has received greater attention than the topic of faculty evaluation. A complex and often highly debated issue, faculty evaluation has come into the limelight primarily because of two movements that had their origin in the 1960's.

There has been a growing concern on the part of some students, administrators, legislators, faculty, and the public at large about the quality of education at all levels. Of course, a major factor contributing to the quality of education is that of the teacher and the functions he performs while fulfilling his role. The college teacher and his teaching have not escaped this growing concern and criticism. As Paul Dressel relates:

The college student . . . in any given term is fortunate if he has one 'good' teacher. . . . The student finds that too many of his teachers are indifferent, unavailable, disorganized, unclear, and incoherent in lectures, discussions, and assignments. Some are completely unwilling or unable to discuss the relevance of the course substance to other disciplines or external realities. No wonder that . . . even the normally rather passive student, charitable in his appraisal of the worth of his education, flares into a heated demand for student evaluation of faculty and administrative discharge of the incompetent. (33:1)

A special project sponsored by the American Association of University Professors and the Association of American Colleges and supported by the Carnegie Corporation focused its attention on the student movement situation.

Dissatisfaction with teaching is part of current student unrest. Dissatisfaction with some teachers and some courses is often intense. The more general complaints are with such matters as the practice of lecturing or with the attitude of the lecturer or with the irrelevance of the approach or the dullness of the manner. Or, it may be part of a larger complaint about the absence of the teacher, either because the graduate school and research lure him away from the undergraduate classroom or because the superior attractions of advanced specialized study leave him absent in spirit from the introductory courses he may be teaching. (35:3)

Shane, after analyzing the conversations of some 300 upper division undergraduate students relating to the teaching and learning process, reported " . . . that much of the unrest among students stems from dissatisfaction with their classroom experiences and their relationship with their professors" (87:18). According to Peterson, students, having expressed their concern for an educational experience which would be relevant and meaningful,

. . . are seeking some share of authority in such academic matters as creating and eliminating courses, grading practices, examination policies and practices, and assessing faculty teaching competence . . . (78:66)

The second of these movements is that of accountability at all levels of the public sector. The public, particularly legislative bodies, have become increasingly concerned over the cost of education and the quality of

the product. As a consequence, administrators are actively reaching for dramatic results to prove their institutions worthy of necessary funds. This has meant, for many institutions, a move toward more openness, increased visibility, and an upsurge of rating procedures.

In an effort to make institutions more accountable, legislatures have passed laws aimed at the evaluation of teaching. An example of such a law is Senate Bill 696 of the State of California. The major intent of this bill was clearly to evaluate for the improvement of the quality of instruction in California's community colleges. The new law provided that:

The governing board of each district in consultation with the faculty shall adopt rules and regulations establishing the specific procedures for the evaluation of its contract and regular employees on an individual basis and setting forth reasonable but specific standards which it expects its certificated employees to meet in performance of their duties.

(25:2)

A third movement, longer of duration and perhaps less visible than those of the 1960's, has also caused increased interest in the evaluation of faculty. This movement is comprised of interested educators who have expressed concern and criticism of the quality of teaching evaluation, the lack of recognition and rewarding of teaching excellence, and the general resistance of some faculty to evaluation. George B. Cutten, President Emeritus of Colgate University, writes:

A large number of persons on the faculties of our colleges and universities lack teaching ability and have no interest in the teaching function. Indeed, with the possible exception of the Sunday School, probably the poorest contemporary teaching is that to be found in colleges. (24:372)

David H. Bayley states that:

Teaching is the only profession which does not accept responsibility for the professional activities of its members. Moreover, it staunchly maintains that it should not even try to do so. (4:116)

Mayhew points out that most professions have methods by which their effectiveness of practice can be measured. He leaves no doubt about the fact that college teaching is not one of these professions.

Only the professional act of college teaching seems to have exempted itself from any kind of realistic assessment. Yet it is the principal professional activity of the vast majority of those who teach in colleges and universities. (69:5)

Stuit notes that " . . . only on rare occasions have faculty members themselves requested that efforts be made to evaluate the quality of their work" (92:51). He points out that while most colleges and universities state that one factor considered in recommending appointments, promotions, and merit is quality of teaching, the fact remains that most administrators and faculty are content to rely on secondhand reports concerning the quality of teaching.

Eble (37) gives the primary reason for increased interest in the evaluation of teaching as that of teaching visibility. The reward system in higher education attaches

prestige and reward to research, because it is visibly seen through publications, but not to teaching because it has not been highly visible. The professors who teach now feel that they should be rewarded for their performance in the classroom.

Others, such as Dressel (29) and Remmers (82), feel that most faculties are usually resistant to the idea of evaluation of their teaching. Remmers cites this strong objection to systematic evaluation and the lack of a generally accepted definition of what constitutes effective teaching as the reasons for the lack of rewards to those who only teach and do no research.

A joint committee of the American Association of University Professors and the Association of American Colleges summarized its thoughts about the present methods of evaluation of faculty performance:

The inadequacies of our present procedures for evaluating and recognizing teaching effectiveness are most apparent where decisions are being made about retention, promotion, and tenure. The decision for or against tenure is critically important both for the young teacher and the institution, but in thousands of instances each year this decision is made on the basis of extremely tenuous information about his teaching ability; a limited amount of student response, usually informal, indiscriminated, and distorted by successive reporters; judgments by deans, and corridor exchanges; and guesses about classroom effectiveness based on the faculty member's performance of quite different institutional duties. (36:16)

Continuing, the committee stated that it was the responsibility of the profession to make its "most important personnel decisions" based upon "precise and searching

criteria" (36:16).

Trends in Faculty Evaluation

In 1949, Francis J. Mueller (74) contacted all 898 colleges, universities, and teachers colleges listed in the 1948-49 Education Directory, in an effort to determine the nature of their experience with student ratings of faculty. He categorized the responses into three classifications, uninterested in ratings, interest short of trial, and actual experience with student ratings. The number and percentages of institutions in these three classifications are summarized in table 1.

TABLE 1
CLASSIFICATION OF INSTITUTIONS

	Uninterested in student ratings	Interest short of trial	Actual experience
Colleges and Universities	167 (26%)	222 (35%)	245 (39%)
Teacher Colleges	58 (34%)	61 (36%)	51 (30%)
All Insti- tutions	225 (28%)	283 (35%)	296 (37%)

(74:321)

Analysis of the data showed that publicly controlled colleges and universities showed the greatest interest in student ratings, with independent and Protestant institutions

showing less interest. The least interest in student ratings was shown by Catholic colleges and universities and teachers colleges. This analysis was significant at the .01 level of confidence.

Analysis by enrollment categories revealed that interest in student ratings increased with enrollment up to 2,000 students, being significant at the .01 level of confidence. Institutions with enrollment of over 2,000 showed a decline in interest but not to a significant degree.

Geographic location of the institution was the final category to be analyzed and also proved to be significant at the .01 level of confidence. The central and western portions of the United States showed the greatest overall interest in student ratings. Interest diminished progressively from the southern states through the middle states to New England.

In 1961, John W. Gustad (47) reported on a survey of the policies and practices employed by 456 colleges and universities to evaluate teaching performance. The most frequently used sources of information employed for evaluation teaching were chairman evaluations, informal student opinions, classroom visits, colleagues' opinions, dean evaluations, and systematic student evaluation. Less frequently used were long term follow-up of students, committee evaluations, alumni opinions, self-evaluations, course syllabi and examinations, and student factors such as grade

distribution, examination performances, and enrollment in elective courses. Scholarly research and publications were not used in evaluating teaching performance.

Five years later, Gustad (47) conducted a follow-up study in which 855 colleges and universities were surveyed. Several significant changes had taken place during the five-year period. The 1966 survey revealed that scholarly research and publications were now used frequently as a source for evaluating teaching, except at the junior college level. Committee evaluations and the use of grade distributions were used much more frequently, whereas classroom visitations and systematic student ratings showed substantial decreases in their employment for the use of evaluating teaching. Informal student opinions as well as evaluations by deans and chairmen were still frequently used.

The question remains: What kinds of data do students, deans, and chairmen have available for making such evaluations? Students . . . are regular observers, but . . . classroom visitation has become less frequent, a fact that leaves one to wonder where chairmen and deans get their information . . . unless it be from informal student opinions. The same question applies to committees. (47:271)

Gustad found that about 25 percent of the colleges and universities surveyed employed some type of rating forms or other special techniques to evaluate teachers. He suggested that while research has shown that the reliability of these forms was generally satisfactory, the decline in the use of student ratings might have been due

to the almost total lack of research into the validity of such forms.

A similar survey was conducted in 1966 by Alexander W. Astin and Calvin B. T. Lee (3). From their findings, as shown in table 2, the authors found that chairmen, deans, and colleagues relied heavily on informal student opinions and that scholarly research and publications were currently the primary sources in evaluating the teaching ability of faculty members.

TABLE 2

FREQUENCY OF USE OF VARIOUS SOURCES OF INFORMATION
IN THE EVALUATION OF TEACHING EFFECTIVENESS

Source of Information	Used in all or most departments (%)	Not Used (%)
Chairman evaluation	85.1	3.4
Dean evaluation	82.3	5.8
Colleagues' opinions	48.9	8.7
Scholarly research and publications	43.8	21.6
Informal student opinions	41.2	9.6
Grade distributions	28.0	37.4
Course syllabi and examinations	26.4	28.0
Committee evaluation	25.1	52.4
Student examination performance	19.6	35.8
Self-evaluation or report	16.3	57.2
Classroom visits	14.0	39.5
Systematic student ratings	12.4	47.6
Enrollment in elective courses	11.0	49.9
Long-term follow-up of students	10.2	47.1
Alumni opinions	9.0	46.8

Source: completed questionnaires from 1,110 academic deans.
(3:298)

Astin and Lee concluded by stating that:

If the ultimate measure of the teacher's effectiveness is his impact on the student--a view which few educators would dispute--it is unfortunate that those sources of information about this influence are least likely to be used. Carefully planned systematic student questionnaires offer an insight into the impact on the learner. (3:299)

Bryan (14) reported on a survey, made during the 1966-1967 year, involving 416 institutions offering a bachelor's degree and having an enrollment of 1,500 or more students. The purpose of the survey was to determine the number of institutions that had a plan under which students rated faculty members. Of the 307 replies, 149 or 49 percent currently had a plan for the student rating of teachers, 117 or 38 percent had never systematically had a plan for the student rating of teachers, and 41 or 13 percent had discontinued the use of student rating of teachers.

In 1973, Seldin and Wakin (86) surveyed the academic deans of all accredited private liberal arts colleges to determine how they were rating their faculty and teaching performance. Some 410 of 491 deans responded to the questionnaire that was a duplicate of the one used by the American Council on Education in 1966 (3). This enabled the authors to compare their survey and the one conducted in 1966. The results of the comparison are given in table 3 and table 4.

TABLE 3

IMPORTANCE OF FACTORS USED IN EVALUATING FACULTY
FOR PROMOTION, SALARY OR TENURE (IN PERCENTAGE)

Factors	1966 Survey	1973 Survey
Classroom teaching	97.6	same
Personal attributes	61.3	53.2
Research	31.7	22.2
Publication	24.5	17.1
Student advising	46.8	68.8
Campus committee work	32.6	49.5
Activity in professional societies	23.9	15.8
Competing job offers	9.8	3.2
Public service	16.1	lower

The comparison revealed that classroom teaching still was the most important factor used in evaluation. Increases in the factors of student advising and campus committee work, coupled with decreases in the factors of personal attributes, research, publication, activity in professional societies, competing job offers, and public service, indicated that more emphasis was being placed on what professors were doing on campus rather than off campus.

The way in which deans gathered information was further proof of their changing attitudes toward evaluating their faculty. It seemed that they were taking more into account systematic student ratings rather than informal student opinions, and the traditional criteria of grade distributions, scholarly research and publication, and student examination performance.

TABLE 4

FREQUENCY WITH WHICH VARIOUS SOURCES OF EVALUATIVE
INFORMATION ARE USED (IN PERCENTAGE)

Sources	1966 Survey	1973 Survey
Grade distributions	36.0	2.4
Classroom visits	9.8	5.1
Scholarly research and publication	36.6	19.5
Chairman evaluation	82.2	82.0
Dean evaluation	83.5	85.0
Colleagues' opinions	50.6	39.8
Committee evaluation	28.9	42.2
Student examination performance	24.7	3.7
Systematic student ratings	11.2	29.3
Informal student opinions	47.2	17.8
Course syllabi and examinations	29.4	10.5

Deans and department chairman evaluations remained important. However, colleagues' opinions had dropped and committee evaluation had risen considerably. The authors viewed this as a "trend toward decentralization and the sharing of decision making" (86:49). In addition, it was probably an effort to gather a wider range of opinions to make the evaluation process more reliable.

It now appears that the student appeals of the sixties for some participation in the process of their education has emerged in the form of a substantial role in faculty evaluation. It also appears that faculty evaluation has taken on a less haphazard and more structured form.

Arguments Against Student Evaluations

The evaluation of teaching through the use of student evaluations is both a complicated and controversial form of measurement. As Doyle writes:

The reasons for their controversiality seem both clear and understandable: these ratings constitute at least a perceived threat to self-esteem, reputation, and job satisfaction of the faculty member, perhaps even a threat to his very career. On the other hand, the pressures on faculty and institution to find ways of documenting instructional effectiveness are tremendous, especially when the educational community as a whole is emphasizing the importance of improving teaching and when fiscal realities are at least reducing growth if not requiring active programs of retrenchment. Thus a tension is created. That most teaching faculty have not had any real training as teachers and are being asked to spend a considerable portion of their professional lives teaching as their teachers taught without the confidence that stems from training, and that in many institutions the reward structure continues to favor scholarly productivity over teaching, sometimes in spite of pronouncements and protestations to the contrary--these conditions do nothing to reduce the tension. (28:xv)

Kent (58) contends that many educators are against the use of systematic student ratings because they feel that students cannot accurately assess teaching effectiveness, and the student is viewed as an immature, biased, and incompetent judge. Also, many faculty simply do not trust students. Kent thinks this strange because these same educators will in turn use informal student opinion to judge a teacher's performance. She gives a second reason for the failure to use systematic student ratings as the fact that they are deemed invalid and unreliable, primarily because of the rating instruments used.

Paul T. Bryant writes:

I submit that a department chairman or his delegate, visiting a classroom, examining course materials, and discussing course objectives and techniques with the professor, will arrive at a more reliable evaluation of a teacher's effectiveness than will an undergraduate who has his personal axe to grind. (15:329)

Max S. Marshall states his objections to student evaluations in the following remark:

The men who set up a system for 'evaluations of faculty' are hypocritical in seeking the opinions of students. Business or industry and education both operate far better when everybody works with reasonable cheer toward principal goals. . . . The less evaluation and the more attention to the real goals, the better. (66:281)

Dressel, while calling for the improvement of college teaching, dismisses student evaluation as a means of measuring faculty performance.

Student evaluation is a weak and erratic basis for rewarding or condemning the performance of faculty members because the student's ability to appraise and value good teaching has been inhibited by the inadequacies to what he has experienced. (33:1)

Kerlinger (59) discusses several reasons why student initiated evaluations of faculty seem to be unacceptable. The first of these relates to the fact that many professors consider this type of evaluation as not being an integral part of the instructional process because it has been formulated and conducted by the students. Secondly is the fact that student initiated evaluations sometimes cause resentment, hostility, and distrust among the faculty because they consider it as a threat to their autonomy and an invasion of teaching responsibility. Thirdly, student

initiated evaluations undermine professional autonomy because the specifics of classroom methods and course content have traditionally been left to the discretion of the individual professor.

Professional motivation is cited by Kerlinger as a fourth consequence of student initiated evaluations. In order to be an effective teacher, the individual faculty member must be able to try new ideas and to develop his own style of teaching. Student initiated evaluations will discourage this. Fifthly, student initiated evaluations will weaken the professor's sense of responsibility for attaining the objectives and goals of instruction. Student evaluations, particularly in published form, may cause some faculty members to have negative thoughts toward their instructional responsibility. Lastly, student initiated evaluations may tend to undermine the student's respect and confidence in the university and its faculty. These evaluations could cause mutual distrust between faculty and students and ultimately hurt instruction itself.

Howard Brogan considers the evaluation of teaching to be very subjective, based on fragmented and inadequate data, and comprised mainly of "opinions of immature and relatively uninformed adolescents whose experience does not extend beyond the local campus" (13:191). Even though he feels that students can be adequate judges of the presentation of the subject matter, he still considers them too

inexperienced and unlearned to be effective judges of the content of teaching.

Richard Morton (73) notes several limitations of student evaluation of teaching. These include: students may not take the evaluation seriously; student evaluations contain much bias and prejudice, with students often blaming the teacher for defects in the textbook or for their poor showing in the course; and the students may have difficulty with the rating form to the extent of misinterpreting some of the questions. He contends that limitations such as these would place some doubt on the reliability of student ratings.

Nonetheless, Morton supports the use of student ratings of teaching. He contends that this is but one of the sources of information the teacher may use to get some idea of his teaching performance.

Perhaps the greatest argument against student evaluations is given with respect to student learning. Do student ratings improve the instructional level? This was the basic question investigated by Martin T. Miller (71). The purpose of his study was to determine if providing faculty members with data from student ratings had any effects on their later ratings by students. In addition, an attempt was made to determine if these effects were a result of faculty attitudes toward student ratings.

The findings revealed that teaching assistants who had access to midsemester students ratings and those who did not, did not differ significantly in their end-of-the-semester ratings. Also, no significant differences were found between the teaching assistants' final ratings and their attitude toward the ratings. If the primary purpose of student evaluations is to improve instruction and thus, hopefully, the academic performance of the students, Miller concluded that his study showed that this was not happening.

Perhaps Kent has the best remark to those who are opposed to the student and his ability to assess the performance of his teachers.

These criticisms may be justified by the attitudes and responses of some students. But to jump to the conclusion that all, or even most students are incompetent, gullible, or vicious is to fall wide of the mark.

(58:337)

Arguments for Student Evaluations

Student evaluations of teaching can contribute important data to departmental chairmen, deans, and other administrators about the effectiveness of the teaching at their particular college. This data may not be obtainable in any other manner than through the students.

McDonagh (62) builds his case for student evaluations of teachers by discussing what he contends are the valuable outcomes. First, published reports of the ratings of professors would give prospective students the opportunity to select their courses and professors with more

direction and meaning than their predecessors. Secondly, the reports would be valuable to the professors themselves, serving as a mirror to reflect their traits, both personal and teaching, thus enabling them to ask why students do and do not accept their teaching. Thirdly, ratings of professors would elevate the status of teaching to a much higher level and would afford recognition to the deserving teachers. The ratings would tend to stimulate the professors to do a better job of teaching. Lastly, the ratings would serve as an objective means to determine the qualifications of professors who are deserving of promotion and tenure.

Voeks (95) considers student evaluations to be the best methods to estimate teaching effectiveness. This method avoids some of the limitations of comparison of student achievement and peer and administrator ratings. After all, the students have actually experienced the teaching and because of the larger number of evaluations by students, there is a broader base of information upon which to estimate the teacher's effectiveness. In addition, students are the only ones in position to answer some of the questions that are asked about instruction.

. . . students know whether their interest has been increased, whether their teacher seems interested in their progress, and whether their enthusiasm for learning has been heightened. On such matters, the students' opinions are bound to be valid. (95:213)

James A. Johnson considers the student the ultimate consumer of instruction and, therefore, the best judge. He

says:

It is often the individual student who knows best whether or not he is learning. It is the student who knows best when he cannot understand or already knows what is being discussed. It is the student who knows when a course is stimulating him to learn more about a subject or whether it is boring him to death. . . . It is the student who can best evaluate when he is beginning to integrate the process of learning with the problems he continually confronts in life. (57:289-90)

Philip Jacob states that:

Students, for their part, have demonstrated a capacity for shrewdly evaluating the performance of instructors. They particularly value the teacher who couples high respect for students as persons with a capacity to arouse interest in his subject. (55:313)

Writing in Saturday Review, Woodring remarks:

The greatest potential contribution of students--and the most threatening to the faculty--is that of rating the competence of professors as classroom teacher. Students who sit through entire courses know much more about the effectiveness of teachers than do professors who rarely visit the classrooms of their colleagues. The judgment of any individual student may reflect his own biases, but if entire classes are polled anonymously as they now are in a number of universities, the combined judgment cannot safely be ignored. (99:66)

In the early 1950's, A. W. Bendig conducted several studies relating to student evaluation of psychology faculty at the University of Pittsburgh. The first of his studies (5) utilized ten daytime and two evening instructors, each teaching a section of introductory psychology. Three of these instructors were full time faculty and the other eight were part time lecturers working toward the Ph.D. degree. Some 489 students were in daytime sections, and 127 students were in the evening classes.

Bendig employed a rating scale devised by Crannell (21) at Miami University of Ohio. The scale contained fourteen five-point rating items covering course, organization, instructor attitude, grading system, and teaching characteristics of the instructor.

The results indicated that twelve of the fourteen items on the rating scale discriminated among the evaluation of the ten daytime instructors at the .001 level of confidence. The other two items discriminated at the .05 level of confidence. Among the two evening instructors, the rating scale showed less discrimination. Six of the items discriminated at the .001 level and four items showed no discrimination at all.

Bendig concluded that one criterion for rating instructors should be student evaluations since his research showed that such ratings can statistically be shown to discriminate the individual differences between instructors. He recommended that such ratings be a part of a multiple criterion of teaching effectiveness.

In the late 1950's, a joint committee of the American Association of Colleges and the American Association of University Professors reported that students can accurately report on teacher effectiveness:

The popularity of student evaluations draws attention to the problem today. The anxiety many faculty members feel about student evaluation is in part a justifiable fear that students evaluate on too narrow a basis. The

fact that even the worst teacher has his adherents and even the best his detractors casts suspicion on any attempt at bad teaching, and teaching evaluation booklets clearly demonstrate that large numbers of students can agree upon the effectiveness of an individual teacher. (35:3)

Kenneth Elbe (36) in his work, The Recognition and Evaluation of Teaching, draws attention to both sides of the question of student evaluation. In supporting the position for student evaluation of faculty, Elbe makes these points:

1. Student evaluation increases the likelihood that excellence in teaching will be recognized and rewarded. It may help to attract into education those who see teaching as an attractive livelihood.

2. Student evaluation allows a means of participation between faculty and students. This may lead to more involvement by the faculty and students in the teaching-learning process which may raise the entire level of instruction.

3. Student evaluation is the only direct means of evaluating teaching. More information is gained and there is no intrusion on the classroom situation like visitations.

4. Student evaluation may lead to the stimulation of institutional goals and values.

5. Student evaluations may lead to the participation of students in other university areas.

A long time supporter of student evaluation of faculty, McKeachie, summarizes his thoughts about the

situation:

I believe student evaluation of teaching can be valid and useful; but let us remember that the ultimate purpose of evaluating teaching is to improve learning. Evaluation is not an end in itself. If a program of evaluation creates anxiety, that interferes with good teaching. If it simply takes so much time from learning that the net gain is negative, let's forget it. We must weigh the cost of evaluation against the gains. I believe there can be important gains but I would not overlook cost. The college is a learning community. Evaluation of either students or teachers should be forced to justify its existence in terms of learning.
(65:7)

The following excerpt from a statement approved by the Council of the American Association of University Professors in June, 1974, indicates the position of this organization relative to student evaluations.

Student perceptions are a prime source of information from those who must be affected if learning is to take place. Student responses can provide continuing insights into a number of the important dimensions of a teacher's efforts: classroom performance, advising, informal and formal contacts with students outside of class. A variety of ways are available to gather student opinion, ranging from informal questioning of individual students about details of a specific course to campus-wide questionnaires. Faculty members should be meaningfully involved in any systematic efforts to obtain student opinions. (1:169)

Reliability and Validity of Student Evaluations

Underlying all the arguments for and against student evaluations of teachers is the nagging concern relating to the reliability and validity of such evaluations. The lack or supposed lack of these two statistical measures has been a prime argument of faculty against the use of student ratings.

Remmers states, "By definition, if one is concerned only with measuring the perception the students have of instructors, validity equals reliability" (82:21). In all of his years of research on student evaluation of faculty, Remmers has not considered the problems of reliability and validity as separate difficulties, but rather as a problem of oneness.

Wilbert J. McKeachie notes, ". . . if one accepts as a legitimate educational objective the favorable reaction of students, ratings by students have high face validity" (63:4). Even twelve years later, he reinforces his initial statement relative to the validity of student evaluations. "In summary, student ratings do have some validity. Teachers rated as effective by students tend to be those teachers whose students learn most" (64:440).

Centra places limitations on the reliability and validity of student ratings.

There is every indication that in certain areas, student ratings of instruction can be valid and useful. Past studies, on the whole, indicate that student judgments of classroom procedures and student-teacher interaction are more reliable than overall student judgments of the instructor himself. Students can accurately report, for example, whether the material was clearly presented, whether they were stimulated to work in a course, whether objectives were made clear, and whether the course seemed worthwhile to them. . . . Students, for instance, cannot report as accurately other aspects of effective teaching, such as the instructor's qualifications in the subject, the soundness of objectives, the validity of reference material, and the intrinsic merit of the course. (17:11)

Research in teacher evaluation was conducted during the period 1943 to 1946 at Brooklyn College by Maslow and Zimmerman (67). As part of their study, students were directed to rate their instructors "as a teacher" and "as a personality." Faculty members were likewise asked to do the same for their colleagues. In addition, faculty members were asked to rate each of their colleagues for "creativity in the field."

The intercorrelations that were found showed that the two student ratings, "as a teacher" and "as a personality," were related as were "as a teacher" and "creativity" for colleague ratings. The authors interpreted this to mean that students tended to equate good teaching with personality, while faculty equated good teaching with creativity. Nonetheless, there was high agreement between the ratings of the students and faculty, leading to the following statement by the researchers:

Finally we may say a word about the validity of student judgments of their teachers. These correlate so well ($r=0.69$) with faculty judgments of these same teachers that a faculty cannot take student judgment lightly without casting aspersions on its own competence to judge. (67:189)

Drucker and Remmers (34) studied the ratings made on the same 102 instructors by current students and alumni of ten years. Their conclusion, shown in table 5, was that both groups tended to agree substantially on their ratings of these instructors with the current students giving slightly higher ratings.

TABLE 5

RANKING OF PURDUE RATING SCALE FOR INSTRUCTION
TRAITS BY STUDENTS AND ALUMNI

Trait	Student Rank Order	Alumni Rank Order
Presentation of subject matter	1	1
Interest in subject	2	2
Stimulating intellectual curiosity	3	3
Liberal and progressive attitude	4	4
Sympathetic attitude toward student	5	6
Fairness in grading	6	8
Self-reliance and confidence	7	7
Sense of proportion and humor	8	5
Personal appearance	9	9
Personal peculiarities	10	10

(34:137)

Patton and Meyer (76) compiled a list of 244 statements describing specific teacher behavior from essays written by fifty college students about their best college teacher or worst college teacher. After several refinements a list of 100 items covering such areas as method of teaching, knowledge of subject, examination and grading procedures, student-teacher relations, personal traits, and textbooks was finalized. This finalized scale was then administered to ninety-eight students from seven classes at a private urban university with 10,000 students and to 110 students from classes at a rural university with 5,000 students.

Findings were significant at the .01 level of confidence, leading the researchers to conclude that students

can discriminate between good and poor teachers when given a scale consisting of favorable items describing specific teacher behavior. In addition, the authors felt that their work made it evident that good teaching can be assessed and that the judgment of students was consistent with that of faculty members.

Crawford and Bradshaw (23) analyzed 300 student themes describing university faculty teaching characteristics which they considered essential to effective teaching. Thirteen different descriptive statements pertaining to classroom teaching behavior emerged.

The researchers presented these thirteen characteristics to faculty, administrators, and students to determine how well these three groups compared in their judgment of these characteristics. All coefficients of consistency were found to be significant at the .01 level, indicating that within each of the three groups there was significant agreement among their perceptions as to the essential characteristics of effective teaching.

Lastly, correlations were calculated between these three groups of judges. High correlations indicated that the thirteen statements were ranked essentially in the same order by students, faculty, and administrators. However, the value placed on each statement by the groups was often different.

Peter Gessner (44) utilized medical students in a study to determine the validity of student evaluations as a measure of teaching effectiveness. The scores of these medical students on the national medical board examination were correlated to the ratings given by these students to the instructors in the twenty subject areas over which they tested. These students were asked to rate their instructors on the content and the presentation of the course of instruction. Correlations of .77 and .69 were found between the student's score on the national examination and his rating of course content and course presentation respectively. Both of these correlations were statistically significant ($p=.001$).

In drawing his conclusions, Gessner stated that if examination results are thought of as an objective measure of student learning and thereby teaching effectiveness, the high correlation he found between student ratings of their courses and instructors and their performance on a national examination would also appear to validate student ratings as a measure of teaching effectiveness.

Greenwood, Bridges, Ware and McLean (46) undertook a study that focused on specific teaching behaviors. A sample of students, faculty, and administrators of a large southeastern state university were asked to describe six characteristics of their best and worst college instructor. Through a series of refinements, the 134 behavioral state-

ments acquired from the sample were condensed to a final set of sixty items. The researchers then selected another sample of 328 students and 554 faculty members who were asked to rate the sixty items on a scale of -3 to +3 as being associated with bad or good college teaching. Means and standard deviations for both students and faculty responses on each of the sixty items were calculated. Although there was a significant difference (.05 level of confidence) between the means of the student and faculty on twenty-five out of the sixty items, both the students and faculty means on all sixty items had the same sign (+ or -). In other words, the responses of the students and faculty on each item had the same directionality. Quoting from their report, the authors concluded:

(1) students and faculty react similarly in identifying teaching behaviors as desirable or undesirable; (2) students tend to react more extremely in their relevance value assignments to the items; (3) students tend to be more homogeneous in their responses to items than do the faculty. Critics of student evaluation of college teaching often argue that students do not know what good teaching is. These data would suggest that there is a great amount of agreement between faculty and students as to what constitutes good and bad teaching, at least when they are asked to respond in terms of items that focus on specific teaching behaviors. In fact, the students in this sample would appear to have slightly greater agreement among themselves along with slightly stronger opinions than did the faculty.
(46:604)

In 1973, Bryson (16) undertook to investigate the relationship between teacher evaluations and student learning. Five hundred eighty-two students enrolled in twenty sections of college algebra and fourteen instructors

participated in the study. The teacher evaluation instrument consisted of fourteen items dealing with instructor characteristics and the student learning was measured by the Cooperative Intermediate Algebra Test (CIAT).

The results showed that positive correlations were obtained between teacher evaluations and the CIAT score (amount learned). The author concluded her study by stating, ". . . these results imply that evaluation of an instructor is directly related to amount learned from that instructor" (16:13) and that the continued use of student evaluations is warranted in the absence of other valid criteria of teacher performance.

Studies of Effective Teacher Characteristics

In an attempt to identify the factors involved in the appraisal of the performance of college instructors by their students, Crannell (22) utilized classes in the College of Arts and Sciences at Miami University of Ohio. Three hundred student evaluations were obtained from thirteen upper and lower division courses taught by nine instructors in English, chemistry, psychology, mathematics, and speech.

The evaluation form consisted of twenty-one items and the results of each item were tabulated in terms of five categories (clusters) of response. These clusters with their respective items were:

Cluster C-1:

- Items: b. Content of classroom presentation
- k. Orientation of subject matter
(usefulness)
- m. Amount being learned
- s. Would you recommend this course to a
good friend whose interests were like
yours?
- u. Overall rating of the course

Cluster C-2A:

- Items: c. Attitude toward questions
- d. Attitude toward students (friendliness)
- e. Attitude toward student effort
- j. Sense of humor
- l. Mannerisms

Cluster C-2B:

- Items: o. Demand for original thinking
- p. Relation to other areas of knowledge

Cluster C-3A:

- Items: a. Organization of course material
- f. Control of class
- n. Preparation for class meetings
- r. Voice

Cluster C-3B:

- Items: g. Length of assignments
- h. Nature of examinations (fairness)
- i. Grading system (impartiality)

Item q. (Tolerance to student opinion) was found to fit equally well in either C-2A or C-2B. Item t. (Contribution of textbook) did not fit well into any cluster.

The researcher assigned names to these three clusters. Cluster C-1 was called "Course result: what the student thinks he is getting out of the course." Cluster C-2 (C-2A and C-2B) was called "Personal interaction: the relationship the student feels he has with the instructor as a person." Cluster C-3 (C-3A and C-3B) was called "Instructor effort: what the student thinks the instructor is putting into the course."

In an effort to determine if students could be adequate judges of effective teaching and teachers, Coffman (18) conducted a study utilizing fifty-five teachers and approximately 2,000 students at Oklahoma A&M College. A rating scale consisting of eighteen specific teacher traits and a general estimate of the teacher's effectiveness was used.

Four reference factors, labeled A, B, C, and D, were developed from these nineteen items of the rating scale. The factors were named: A, empathy; B, organization; C, punctual, neat, and "normal" individual vs. the opposite "absent-minded" professor; and D, verbal fluency. Factor A was found to be significantly correlated to the teacher traits of ability to arouse interest in students, sense of humor, feeling between instructor and student, and

tolerance and liberality. Factor B was significantly correlated to the teacher traits of preparation for class meetings and organization of the course. Teacher interest and enthusiasm in subject, thinking demanded of student, scholarship, punctuality in meeting and dismissing classes, and personal appearance were correlated significantly with Factor C. Factor D was correlated significantly with ability to arouse interest in students, enunciation, ability to express thought, self-confidence, and lack of personal peculiarities. Factors A, B, and D were also significantly correlated to the general estimate of the instructor as a teacher.

A study by Bendig (7) concentrated on the student evaluations of ten daytime instructors of introductory psychology classes. Ratings were obtained by use of the Miami University Instructor Rating Sheet (22).

The ratings of these ten instructors on the individual fourteen-item rating scale were correlated, and the matrix of intercorrelations was factor analyzed by inverted factor techniques. Three factors were extracted, each containing three of the items of the rating scale. Bendig identified the factors as:

Factor I: Containing item 2 (content of lectures),
 item 6 (control of class), and item 10
 (sense of humor).

Factor II: Containing item 1 (organization of material), item 4 (attitude toward students), and item 7 (length of assignment).

Factor III: Containing item 5 (attitude toward student effort), item 8 (nature of examinations), and item 12 (mannerisms).

A second study by Bendig (10) subjected the results of the student evaluations of eleven introductory psychology instructors to a factor analysis. Evaluations had been obtained from measurements on the first ten items of the Purdue Rating Scale for Instruction (PRSI) (83).

The factor analysis revealed three factors. Factor I was considered a general factor, or "halo" factor that was related to all the items of the PRSI, but item 9 (personal appearance).

Factor II was found to be related to four items of the PRSI: item 1 (interest in subject), item 5 (presentation of subject matter), item 7 (self-reliance and confidence), and item 10 (stimulating intellectual curiosity). Bendig named this factor "Instructional Competence."

Factor III was called "Instructor Empathy." It was also found to be related to four items of the PRSI: item 2 (sympathetic attitude toward students), item 3 (fairness in grading), item 8 (personal peculiarities), and item 9 (personal appearance).

Having found two teaching factors called Factor II (Instructional Competence) and Factor III (Instructor Empathy) as a result of previous research (10), Bendig (9) sought to determine if a relation existed between these factors, the achievement of students in the course, and sex of the student. Student ratings were obtained on five instructors of introductory psychology classes using the PRSI (83). Course achievement of the students was the letter grade each received at the end of the semester. Ratings and data of 121 sophomore students were analyzed.

The analysis of variance applied to the data indicated that significant differences existed between the instructors on Factor II (.05 level) and Factor III (.01 level). No general differences between men and women student ratings were found for either Factor II or Factor III. Covariance analysis revealed a high negative correlation between mean student grade and Factor II, but none was found between mean student grade and Factor III.

French (41) developed a set of forty-one selected statements describing the classroom behavior or characteristics of college teachers. This set of items was submitted to the students of 133 faculty members at the University of Washington so that they could evaluate their instructors.

Her findings revealed that this set of forty-one items accounted for 78.3 percent of the variance relating to overall judgment of teacher effectiveness. This being the

case, French concluded that the items selected on her instrument measured most of the variables related to the student's concept of teaching.

Findings also revealed that no more than eight factors or dimensions were left to student judgment. However, the scope of her study did not include the finding of the exact number of factors, nor the identification or naming of the factors. Of the forty-one items on the rating instrument, the following ranked as the most important: 1) interprets abstract ideas and theories clearly, 2) gets students interested in the subject, 3) has increased my skills in thinking, 4) has helped broaden my interests, 5) stresses important material, 6) makes good use of examples and illustrations, 7) motivates me to do my best work, 8) inspires class confidence in his knowledge of the subject, 9) has given me new viewpoints or appreciations, and 10) is clear and understandable in his explanations.

Using the same set of forty-one selected statements describing teaching effectiveness as French (41), Hodgson (53) carried the research further. The data was statistically investigated by the methods of factor analysis in order to determine and name those factors or dimensions of student judgment of teacher evaluation.

The results of the research isolated one general factor and eight primary factors. The general factor was seen to contribute only 5 percent to the systematic item

variance of the system. This represented only a small proportion of the total systematic variation and was interpreted, as with other studies, to represent "halo error."

It was the eight primary factors that represented the principal source of factor contribution to the set of forty-one items. Even though eight primary factors were isolated, Hodgson could only give meaningful interpretation to six in terms of item factor loadings. These six factors were described as follows:

Factor I: Organized lucid exposition of course content.

Factor II: Personal presentability together with straightforward, practical lecture methods.

Factor III: Identification with student needs marked by tolerance, sincerity, and sensitivity.

Factor IV: Stimulation of wide intellectual interests among students.

Factor V: Achievement of active student participation by making the course a challenge.

Factor VI: Fair and reasonable methods of examination.

Introductory psychology classes at the University of Michigan were the scene for a study aimed at identifying the dimensions of teacher behavior as perceived by students (54).

Two groups of students, 689 in the fall semester and 589 in the spring semester, participated in the research. These students evaluated seventeen teachers in the fall semester and sixteen teachers in the spring semester. The evaluation instrument consisted of forty-six rating items.

The factor analysis of the data revealed six factors that appeared consistent over the two administrations, in both semesters, with male and female students and different teachers. These factors were labeled Skill, Overload, Structure, Feedback, Group Interaction, and Student-Teacher Rapport. The Skill Factor accounted for the greatest amount of variance having high loadings on seventeen items of the evaluation form.

In 1963, at the University of Oregon, Quick and Wolfe (80) conducted a study to determine the characteristics of the ideal professor. From the replies of 483 students, they found the ideal professor characterized by ten statements. In order of importance, these statements were: 1) encourages independent thinking, 2) has the subject matter and course well organized, 3) has enthusiasm for subject, 4) has the ability to explain clearly, 5) welcomes differences of opinion, 6) tests and grades fairly and impartially, 7) has a good knowledge of the subject matter, 8) shows interest in students individually, 9) has a good voice and speaks clearly, and 10) is scholarly and participates in research.

F. G. Pogue, Jr. (79) used the same instrument as Quick and Wolfe for his research at Philander Smith College. Some 307 students participated in this study and characterized the ideal professor, in order of importance, as one who: 1) has a good knowledge of the subject matter, 2) tests and grades fairly and impartially, 3) has the ability to explain clearly, 4) has the subject matter and course well organized, 5) shows interest in students individually, 6) has enthusiasm for subject, 7) welcomes differences of opinion, 8) is scholarly and participates in research, 9) encourages independent thinking, and 10) has a good voice and speaks clearly.

In 1966, Gadzella (43) utilized the campus of Western Washington State College to determine what students considered the most important criteria for a quality professor. A questionnaire consisting of twenty-five criteria of the ideal professor was developed and 443 students were asked to respond to it. Students were asked to select the five criteria most important for them and to indicate their relative importance.

The results indicated that the five most important criteria in describing the ideal professor, beginning with the most important, were:

1. Knowledge of subject: has a thorough knowledge, both basic and current, of the subject he teaches.

2. Interest in subject: has a deep interest in and enthusiasm for the subject he teaches.

3. Flexibility: is inspiring, has the ability to present material to meet students' interests and needs.

4. Daily and course preparations: has daily lessons well organized, provides an outline of the course and its objectives and a list of basic references.

5. Vocabulary: uses appropriate language, has ability to explain clearly, presents material at the students' level of comprehension.

Musella and Rusch (75) conducted a study in 1966 at the State University of New York at Albany utilizing 394 seniors. One purpose of their study was to determine teacher behaviors and characteristics that were associated with effective teaching in general.

When asked to list those qualities of the teacher that promoted their thinking, the researchers found that students most often listed: 1) attitudes toward subject, 2) attitudes toward students, 3) questioning, 4) speaking ability, 5) knowledge of subject, 6) organization of subject matter, 7) discussion, 8) ability to explain, 9) tolerance to disagreement, and 10) instructor as "human being." When asked to rank the five most important qualities of teaching in general, the students selected: 1) expert knowledge of subject, 2) systematic organization of subject matter, 3) ability to explain clearly, 4) enthusiastic attitude toward

subject, and 5) ability to encourage thought.

Ryans (85) reported that substantial evidence has been accumulated about teacher behavior and at least five clusters of teacher behaving styles have been identified. These five clusters were:

Cluster X: Considerate, understanding, warm, sensitive, nurturant, and supportive teacher behavior.

Cluster Y: Organizing, managing, orderly, responsible, and businesslike teacher behavior.

Cluster Z: Achievement motivating, stimulating and imaginative teacher behavior.

Cluster E: Expressive, attractice, clear, personally and academically impressive teacher behavior.

Cluster DI: Directive, authoritarian vs. non-directive, integrative teacher behavior.

During the winter quarter of 1967, Rayder (81) carried out research at Colorado State College, Greeley, Colorado. All faculty and students within the School of Education participated in this study. This consisted of eighty-seven faculty members and some 4,402 students. The purpose of the study was to determine if certain student and faculty characteristics related to ratings of the faculty by the

students.

Students were asked to rate their instructors on three seven-point continuums. These three continuums were identified by Ryans (85) as being important teacher traits or patterns of behavior. Rayder lists them as:

- | | | |
|------------------------|-----|--------------------------|
| I. aloof, egocentric | vs. | friendly, understand- |
| restricted behavior | | ing behavior |
| II. evading, unplanned | vs. | responsible, systematic, |
| slipshod behavior | | businesslike behavior |
| III. dull, routine | vs. | stimulating, imagina- |
| behavior | | tive, enthusiastic |
| | | behavior |

The results of the study showed that student ratings of faculty were not substantially related to the student characteristics of sex, age, grade classification, major, grade point average, or previous grades received from the faculty member they rated. This was found for all three continuums.

The student ratings showed more relationship to faculty characteristics. Faculty characteristics such as sex, age, degree held, faculty rank, department, and number of years of experience, when taken collectively, showed an above average relationship to student ratings on continuum II. (evading vs. businesslike). The most influencing of these variables, when taken individually, was the department of the faculty member. The younger and less experienced

faculty received overall higher student ratings than the more educated and more experienced faculty.

In 1968, Hildebrand, Wilson and Dienst (52) conducted a study at the University of California at Davis, in which the overall ratings of teacher effectiveness were correlated with the academic rank of the teacher, class size, course level, number of courses previously taken in the same department, whether the course was in the student's major or not, and whether or not the course was optional. Correlations nearing the .05 level of significance were found for the last two variables.

Correlations were also made with the student variables of class level, sex, overall GPA, and expected course grade. These correlations were not significant at the .01 level.

In the second phase of this study, students were asked to identify the best teachers and worst teachers that they had had during the preceding year and to describe their teaching. Faculty members were asked to identify best and worst teachers among their colleagues and to answer questions about their behavior and teaching activities. The participants were not given a definition of effective teaching but left to select the best and worst teachers using their own criteria. In comparing the selections of the students and faculty for best teachers and worst teachers, it was found that the two groups were in very strong agreement

(significant at the .0005 level).

With strong agreement between students and faculty, the study undertook to characterize effective teaching. From the student responses, the researchers selected ninety-one items describing the teaching of 338 teachers identified as the best teachers and analyzed them through factor analysis. Thirty six items with factor coefficients greater than .40 were formed into a five-factor solution scale showing the components of effective teaching. These five factor scales were:

- Factor Scale 1. Analytic/Synthetic Approach, relates to scholarship, with emphasis on breadth, analytic ability, and conceptual understanding.
- Factor Scale 2. Organization/Clarity, relates to skill at presentation, but is subject-related, not student-related, and not concerned merely with rhetorical skill.
- Factor Scale 3. Instructor-Group Interaction, relates to rapport with the class as a whole, sensitivity to class response, and skill at securing active class participation.
- Factor Scale 4. Instructor-Individual Student Interaction, relates to mutual

respect and rapport between the instructor and the individual student.

Factor Scale 5. Dynamism/Enthusiasm, relates to the flair and infectious enthusiasm that comes with confidence, excitement for the subject, and pleasure in teaching.

In 1969, the University of Toledo (77) conducted a study which centered on identifying effective teaching behaviors and determining their relative importance. Students, faculty, and alumni identified some 13,643 effective teaching behaviors which were reviewed and summarized into sixty criterion behaviors. Each of these sixty criterion behaviors was then rated according to importance by these three groups and a factor value for each criterion behavior was determined. The composite rank ordering of the first ten criterion behaviors was: 1) being well prepared for class, 2) establishing sincere interest in the subject being taught, 3) demonstrating comprehensive knowledge of his subject, 4) using teaching methods which enable students to achieve objectives of the course, 5) constructing tests which search for understanding on the part of students rather than memory ability, 6) being fair and reasonable to students in evaluation procedures, 7) communication effectively at levels appropriate to the preparedness of

students, 8) encouraging intelligent independent thought by students, 9) organizing the course in logical fashion, and 10) motivating students to do their best.

The School of Education at the University of Northern Colorado was the setting for a study conducted by Fox and Brookshire (40). Their purposes were to formulate a definition of effective college teaching and to determine the relative importance of the various elements of such a definition.

Ninety-one faculty members from the School of Education were asked to list what they considered to be the essential ingredients of effective college teaching. The responses were examined and reexamined until they were narrowed to five major categories: 1) personal characteristics, 2) professional qualities, 3) interpersonal relationships, 4) technical skills of teaching, and 5) communication skills.

Deshpande, Webb, and Marks (26) undertook a study to examine the significant dimensions of teaching behaviors of instructors in engineering. The researchers developed a 150-item questionnaire, called the Teacher Description Instrument (TDI). Some 674 undergraduate students in the Mechanical Engineering School of Georgia Tech University were asked to rate their respective instructors using the TDI. The thirty-two male instructors rated varied in age, teaching experience, and academic ranks.

The class means of the items of the TDI were inter-correlated and factor analyzed with the outcome being fourteen behavioral first order factors. These fourteen first ordered factors were labeled: motivation, rapport, structure, clarity, content mastery, overload, evaluation function, use of teaching aids, instruction skill, teaching styles, encouragement, individual assistance, interaction, and test-adherence.

In discussing the results of their study, the authors concluded that: 1) the first-order factor of clarity was related to courses that emphasized practice rather than theory; 2) the first-order factors of evaluation function, instructional skill, and individual assistance were slightly more associated with courses that emphasized practice; 3) the first-order factors of motivation, structure, content mastery, and instructional skill were highly correlated to teaching ability; 4) the first-order factors of motivation, structure, and content mastery were highly associated with the values of the course as perceived by the student; 5) the first-order factors of encouragement, evaluation function, and use of teaching aids showed moderate but significant positive correlation with both student evaluations of course and teaching ability of the instructor, and 6) the first-order factor of clarity was not related to either student ratings of the course or the instructor.

Studies of Student Evaluations and Their Relationship to
Student, Faculty, and Course Characteristics

In May, 1947, over 90 percent of the students at Brooklyn College rated five of their teachers (45). In all, some 6,681 students participated in this study. Students were requested to measure teaching competence in terms of ten qualities. In addition, students were to select what they considered to be the three qualities of greatest importance in a teacher. The results of the study are given in table 6.

TABLE 6
RANK ORDERING OF QUALITIES

	Arts	Science	Social Science
Organization of subject matter	5	2	2
Speaking ability	6	7	7
Ability to explain	4	1	5
Encouragement to thinking	2	4	1
Attitude toward students	9	8	10
Knowledge of subject	1	3	4
Attitude toward subject	3	5	6
Fairness in examinations	10	6	8
Tolerance to disagreement	8	10	3
Instructor as "human being"	7	9	9

(45:347)

Further analysis of the results was made in relationship to certain student, faculty, and institutional characteristics. It was found that the better scholastic students turned in more critical evaluations on every attribute but "knowledge of subject." However, the overall

range of differences between the good and poor students was not very great. In addition, there was no relationship found between ratings and student's sex, college class, or whether the student was a veteran or non-veteran.

The study showed that the younger faculty received more favorable ratings on nine of the ten qualities, the only exception was "knowledge of subject." Only a slight relationship was found between the instructor ratings and class size. No relationship was found on the basis of the class being elective or required.

Crannell (21) reported on the development and initial use of the Miami University Instructor Rating Sheet. This rating sheet was first administered to 4,696 students of all undergraduate levels in eighteen departments of the College of Arts and Science at Miami University of Ohio during the fall semester, 1947-48.

The results of this study revealed that there were no great differences in ratings according to course levels. Greater differences in ratings appeared between departments. Correlations between the fourteen items ranged from .78 to .32 indicating that students did take some care in attempting to evaluate their instructor on each separate item.

Armentrout (2) reported on the results of his research with student evaluations of faculty and selected variables at Colorado State College of Education in Greeley. Utilizing the PRSI (83), he reported that: 1) there was a

positive but not significant correlation between higher ratings and increased size of class, 2) there was very little correlation between the grades given to a student and his evaluation of the teacher, 3) there was a slight negative correlation between the class standing of the student and his evaluation of the teacher, 4) senior students tended to give higher evaluations than freshman and sophomore students, 5) summer school students gave higher evaluations than students in the regular semester, 6) there was no difference in ratings given by students in required courses and elective courses, and 7) the PRSI helped to improve instruction because teachers who have used it consistently showed higher scores on later ratings.

In 1949, State College of Washington conducted a student evaluation of its teaching. Some 16,000 evaluation forms were completed. A sample of 300 of these ratings was selected and the results were analyzed by Downie (27). He found that: 1) ratings by students with a GPA of three and above gave more favorable ratings than those with a GPA of less than three; 2) ratings by upper division students were more favorable than those of the lower division; 3) there was a slight difference in the ratings when compared on a required versus an elective course basis; 4) the largest differences in ratings were in relationship to class size, with classes of thirty or more students giving less favorable ratings than classes with less than thirty students;

5) ratings for faculty members age forty and over did not differ from those of age less than forty; 6) there were no differences in the ratings according to the sex of the faculty member; 7) ratings were not related to the number of years of employment at State College of Washington; 8) with regard to academic rank, the full professors received ratings somewhat better than the other three ranks; and 9) faculty members with the doctorate and master's degree were rated higher than those with only a bachelor's degree.

Stuit and Ebel (91) reported on student evaluations of teachers at State University of Iowa during both semesters of the 1950-51 academic year. During this time period, 7,559 rating sheets were processed for instructors of 267 classes.

Assistant professors received the highest mean ratings for all categories with the other three academic ranks not far behind. The differences of mean ratings among class levels was not great, showing a difference of .16.

One of the greatest differences of norms of individual items on the evaluation form appeared between "knowledge of subject" and "skill in presenting subject" with the former having the higher norm. The authors seemed to think this reflected on the idea that the instructor knew his subject matter, but could not put it across to the students. Instructors, therefore, might be more seriously limited by lack of teaching skills than by lack of knowledge.

A study by Bendig (6) was based upon the student ratings of two psychology instructors in three classes. Ratings for the first instructor were obtained from twenty-four students in one class of introductory psychology. The second instructor received twenty-seven ratings from one introductory psychology class and twenty from one social psychology class. Ratings were obtained by use of the Miami University Instructor Rating Sheet (21).

The findings of this study showed that women students tended to rate the instructors more unfavorably than did men students. In addition, freshmen and sophomore students gave higher ratings than juniors and seniors.

Does the achievement of a student in a particular class influence his evaluation of his instructor? This was the question Bendig (8) sought to answer in another of his research projects.

Utilizing the PRSI (83), 132 student ratings were obtained from introductory psychology classes at the University of Pittsburgh. Five instructors, one of associate professor rank, two of instructor rank, and two part-time lecturers, were evaluated.

Bendig completed an analysis of variance using the three variables, student achievement as measured by three course examinations, student rating of his instructor as measured from the PRSI, and student rating of course as measured from the PRSI. The analysis revealed that the

differences between the classes in their ratings of the instructors and the course were significant at the .001 level. The differences between classes on the total achievement test scores were not significant at the .05 level and the student achievement variable was found not to be significantly related to student rating of the instructor.

Essays in which 100 seniors described their best and worst college teachers was the basis for a study conducted at Grinnell College (61). Findings indicated that there was good agreement between students and faculty as to the items describing best, average, and worst teachers. There was also close agreement as to those items that differentiate between the best and worst teacher. In addition, the study found: no differences in the ratings given by male and female students, significant differences (.01 level) between ratings given by seniors and each of the other three classes, faculty members teaching non-required courses received significantly higher ratings than those teaching required courses, and faculty members teaching larger classes (thirty-one and up) rated significantly lower (.01 level).

Research was conducted at the University of Washington by Voeks and French (94) into the affects of grades on the student ratings of teachers. Students at the sophomore level and higher were asked to list five faculty

members who in their judgment should receive a rating of a) very superior, b) superior, c) competent, d) only fair, or e) of less value to me than others. A mean rating was computed for each teacher mentioned by twenty or more students. These mean ratings had a high reliability ($r=.944$) and correlated highly with other student ratings of teachers.

Most of the teachers evaluated were from two physical science departments and one in the humanities. Grades from the previous semester for these teachers were made available, listed by department, and grouped as A and B, C, and D and E. Two rank-difference correlations were computed. All of the correlations between grades and student ratings were negligible.

Do students, when rating an instructor, tend to give him about the same grade they expect to receive in the course? Is student criticism of an instructor directed toward both his personality and his teaching skills? These were the two major questions investigated by Weaver (97).

Twelve instructors of history, English, speech, and personnel were rated by thirty-nine classes. A total of 699 rating sheets from students at all four undergraduate levels were completed.

The results displayed several significant differences among the groups on the total mean scores and the teaching technique scores, but only one significant differ-

ence was found in the ratings of personality. The author concluded that: 1) student ratings were biased in the direction of the grades that students expected to receive; 2) most of the student bias in the ratings was in the area of teaching skills and abilities of the instructor; 3) student bias did not affect the ratings of instructor personality variable, thus ruling out popularity halo as an influence in the ratings; and 4) students who expected to receive a C tended to agree more consistently with each other in their ratings.

There has been debate about the relationship between quality of teaching and research. Voeks (95) sought to investigate this relationship through the use of student evaluations of teaching at the University of Washington. Students at the sophomore level and higher were asked to list five faculty members who, in their judgment, should receive a rating of a) very superior, b) superior, c) competent, d) only fair, or e) less value to me than others. A mean rating was computed for each teacher mentioned by twenty or more students. The mean ratings had a high reliability ($r=.944$) and had correlated highly with other student ratings of teachers.

In an attempt to estimate the quality of research, the ratings of teachers belonging to the University's Research Society, a society consisting of individuals considered to have done outstanding research, was compared to

the ratings of teachers who did not belong to the Research Society. Analysis showed that the teaching effectiveness of the two groups as measured by student ratings did not differ significantly.

Next, the relationship between the number of publications and teaching effectiveness was investigated. Lists of publications for faculty members, both for the last five years and for the individual's professional life, were acquired and a weighting system was devised according to the number of pages in each publication.

Results showed that when teaching and research were done simultaneously, teaching did not suffer or become better. The total number of publications had no relationship to teacher effectiveness.

In a study conducted at the University of South Florida (90) involving sixty-seven instructors and 1,975 students, attempts were made to determine relationships between college students' grade estimates and their ratings of certain teacher characteristics. Students expecting high grades rated their teachers higher than those who expected low grades, approved more of the teacher's grading policies, and considered the organization of lectures and knowledge of the subject to be better. Other findings revealed no relationship between the class of the rater and the overall ratings given the teacher.

Kooker (60) utilized the psychology department of North Texas State University to conduct his research relating to student evaluations. His investigation centered on relationships between student grades and student evaluations.

An upper class sample of 143 and a freshmen sample of 183 students, all enrolled in psychology classes, were asked to rate any class that they had had the previous semester. A rating scale with a total of seventy-three items under seven topical headings was the rating instrument. Also, students were asked to indicate the grade that they received in the course they rated. The students were then classified into three groups, those who received A, B, and C and below.

The results showed that all seven topical headings, presentation, textbook, assignments, tests, grading, stimulation, and relations, were significantly related to the grades of the freshman sample (.01 level). The last five topical headings were also significantly related to the grades of the upper class sample (.01 level).

Twelve hundred undergraduate classes in all colleges and schools of Temple University were used in a study by Rosenshine, Cohen, and Furst (84) in 1970. The purpose of the study was to determine if certain demographic variables were related to the student ratings of courses and instructors. The thirty-eight item Course Evaluation Survey developed by one of the researchers was used as the rating

instrument. No significant relationships were found between student ratings and the following student variables: sex, age, marital status, year in college, grade point average, expected grade, and number of previous courses in the subject matter area.

Elmore and LaPointe (38) conducted a study in 1971 utilizing students enrolled in 1,474 courses at Southern Illinois University at Carbondale. The purpose of the study was to determine if women faculty received significantly different ratings than men faculty and if this was related to the sex of the student doing the rating.

The authors found no interaction between the sex of faculty and the student. In addition, there was little meaningful difference between male and female faculty. Only three questions of the twenty item questionnaire showed any significance. Male faculty members received significantly higher ratings on the item, "spoke understandably," while the female faculty members received significantly higher ratings on the item, "promptly returned homework and tests." The only significant difference between male and female students occurred when female students rated faculty members higher on "specified objectives of the course."

A study of student evaluations was conducted during the winter and spring quarters of the 1971-72 academic year at Sangamon State University (20). The following was found: 1) there was no significant relationship between class size

and student ratings; 2) there was no significant relationship between teaching methods (lecture versus discussion) and student ratings; 3) there was no significant relationship between types of classes (innovative versus traditional) and student ratings; 4) there was no significant relationship between the faculty characteristics of academic rank, salary, experience, or educational level, and student evaluations; 5) there was a significant relationship between signers and non-signers of the rating forms and their ratings; 6) there was no significant relationship between the grade received by a student and his rating; and 7) there was no significant relationship between the age, sex, or undergraduate versus graduate status of a student and his rating.

A study involving over 4,000 college and university classes on sixteen campuses across the country was conducted to investigate class size and student evaluations of faculty (98). Classes investigated ranged in size from fewer than five students to near 500 students. Findings revealed that most college and university classes tend to be small with the modal size in the ten to nineteen students per class. Teaching ratings for classes of less than ten students began relatively high and progressively declined until at class size of about 250 students. After this, the teaching ratings climbed upward and continued to do so through class sizes of near 500 students. The researchers developed a second degree polynomial regression equation

reflecting the parabolic nature of their findings.

In attempting to explain their findings, the researchers examined variables of rank, highest degree, and number of years of experience since the last degree. Their conclusion was that these variables were not the cause of the curvilinear relationship that was found between class size and student ratings.

No work on faculty evaluation is complete without the discussion of the research of two individuals, E. R. Guthrie and H. H. Remmers. Both have had great impact and have made many contributions to the area of faculty evaluation, particularly to the investigation of student ratings of faculty.

Since 1924, the University of Washington has been continuously involved with studies of evaluation of teaching on the basis of faculty and student judgments. From his years of investigation at this institution, Guthrie (48) concluded that: 1) upper classmen and graduate students tended to agree strongly in their overall evaluations of teaching effectiveness ($r=.73$); 2) student evaluations and colleague evaluations showed some agreement ($r=.43$); 3) there was little, if any, relation between class size and ratings received by the faculty; 4) there was no relation between the major of the student and the major teaching area of the faculty member; 5) there was no relation between the GPA of the student and the rating given; 6) there

was no relation between the experience of the faculty members and the rating received by the faculty member; 7) there was a slight relation between faculty rank and the rating received by the faculty member; 8) there was very little relation between colleague ratings on research productivity and student ratings of teaching effectiveness; and 9) student judgments of teaching effectiveness were consistent.

Remmers (83) has conducted extensive research into the evaluation of teaching for over forty years. He was instrumental in the development of the Purdue Rating Scale for Instruction, a well known twenty-six item scale used to evaluate instructors and the instructional processes. After his years of research with this rating scale, he has reached the following conclusions relative to student evaluations of instruction:

1. A considerable number of those who have used student ratings believe this procedure is useful for facilitating the educational process.
2. Knowledge of student opinions and attitudes leads to the improvement of the teacher's personality and educational procedures.
3. There is some evidence that student opinion is positively related to achievement as measured by examination of students.
4. If twenty-five or more student ratings are averaged they have as much reliability as do the better educational and mental tests at present available.
5. Grades of students are not, in general, related to their ratings of the teacher.

6. While the effect on student ratings of a generalized attitude ('halo effect') toward the teacher has not been isolated, it apparently does not exist to an extent sufficient to invalidate the ratings of separate aspects of teaching methods and of the course. Evidence indicates that students discriminate reliability for different aspects of the teacher's personality and of the course, and between different instructors and courses.
7. There is evidence showing that little if any relationship exists between student ratings of teachers and the judged difficulty of the course.
8. In a given institution there exist wide and important departmental differences in effectiveness of teaching as judged by student opinion.
9. The sex of the student raters bears little or no relationship to their ratings of teachers.
10. The cost in time and money of obtaining student opinion is low. In fact, it is considerably lower than the administration of a typical standardized educational test of some comprehensiveness.
11. Popularity in extra class activities of the teacher is probably not appreciably related to student ratings of that teacher. For instance, in a certain department of Purdue University the ratings of all instructors were uniformly high. However, teachers in this department are not at all prominent for their extra class activities.
12. No research has been published invalidating the use of student opinion as one criterion of teaching effectiveness.
13. A positive relationship ($r=.24$) exists between student achievement and ratings awarded after initial ability has been partialled out.
14. Teachers with less than five years experience tend to be rated lower than teachers with more than eight years experience.
15. The sex of the instructor has no effect on the ratings received.

16. The year in school of the rater has no effect on the ratings given, except that ratings by graduate students tend to be a bit higher than those by undergraduates.
17. Alumni of ten years standing tend to rate their former instructors in the same way as do the present students of those instructors.
18. Students are more favorable to student ratings than instructors but more instructors have noticed improvement in their teaching as a result of student ratings than the students.

(83:12-13)

Studies of Faculty Evaluation in
the Community-Junior College

Hendrix (50) reported in his research involving junior college faculties that in colleges using evaluation policies and procedures, administrators were apt to rely more heavily on previous teaching experience in their efforts to select the most successful and effective teachers. He also pointed out that faculty members with previous teaching experience in the junior college were probably more confident of their ability to be successful in situations involving formal evaluation of their teaching.

The two-year colleges of Kansas were utilized by Foree (39) to determine if there were any significant differences between evaluations of teachers by students, administrators, and self, and certain teacher characteristics. A rating scale developed at the University of North Dakota, entitled Rating Scale for Teachers, was the instrument used for evaluating 177 teachers from eight two-year colleges. The results were analyzed using the chi-square test.

In relationship to the student evaluations of teachers, Foree found significant differences with the teacher characteristics of years teaching in present position, years as an administrator, years of experience as a junior high school or elementary teacher, non-education work experience, graduate hours, and recency of college workshop. Teacher variables of non-education work experience and sponsorship of student activities were significantly related to administrator evaluations of teachers. Lastly, self-evaluations were found significantly related to the teacher characteristics of non-education work experience, graduation from a two-year college, recency of college courses taken, and membership in social organizations.

In 1970, Highland Community College (51) in Illinois reported on a study that was conducted as the college was attempting to develop a formal evaluation program for its faculty. The primary question asked in this study was "do students, faculty, and administrators value selected teaching behaviors the same?"

The instrument used in this study was one developed by Perry (77) containing sixty teacher behaviors that had been identified by students, faculty, and alumni of the University of Toledo as being those of effective teachers. Returns were obtained from eight administrators, thirty faculty, and ninety students. Null hypotheses were tested at the .05 level of significance between the returns of

students and faculty, faculty and administrators, students and administrators, and the total returns of Highland Community College and the results of Perry's study.

All null hypotheses were rejected, meaning that all three groups, students, faculty, and administrators, placed the same importance on certain selected instructional behaviors. In addition to having shown the criteria for evaluation to be the same at Highland Community College, this study showed that "the university community tends to view teaching behaviors with the same general importance as does the community college community, suggesting some agreement as to the identification of effective teaching behaviors" (51:23).

Menzie (70) conducted research on teacher evaluation during the period 1971-1973 as practiced in the community colleges of this country. He found that in order of rank, the methods of evaluation used on a five-point scale were administrative judgment (3.8), peer judgment (3.3), self-evaluation (3.3), student opinion (3.2), student outcomes (2.9), external evaluation (1.2), and teacher performance tests (1.2). In many colleges, these ratings took place during classroom visits and in some cases, the ratings were discussed between the teacher and his direct supervisor. Most teacher evaluation programs used some type of rating form because of economical reasons and in an effort to quantify the qualitative variables involved.

Menzie further found that three-fourths of all community colleges in the country had a formal evaluation program. All community colleges with evaluation programs evaluated all probationary teachers, but only 60 percent evaluated tenured faculty. About two-thirds of these colleges had programs to evaluate part-time teachers also.

In conclusion, Menzie stated that: 1) teacher evaluation was being used to improve instruction and learning in the community college; 2) administrators and teachers needed more and better training in the methods, objectives, and the limitations of teacher evaluation; 3) there was further need for research on every aspect of evaluation at the community college level; and 4) time and resources should be allocated to teacher evaluation in proportion to the objectives of evaluation.

In 1967, Walker (96) used the PRSI (83) in evaluating the effectiveness of the faculty of Lee College, a junior college in Texas. Some 1,450 student ratings were acquired on teachers of business administration, psychology, English and humanities, foreign language, mathematics, physical education, science, and social science. His purpose was to determine if certain variables were important to the way in which junior college students evaluated their teachers. Using Pearson's Coefficient of Correlation, rank ordering correlation, student's t-test, and analysis of variance to analyze his data, Walker reached the following

conclusions:

1. Expected grades: students that expected higher grades rated their teachers significantly higher than students who expected lower grades ($r=.113$).

2. Expectation of course: students rated teachers higher in courses that they felt were similar to what they expected than did students who felt that the courses were not what they expected. (Significant at the .001 level.)

3. Course difficulty: course difficulty as perceived by the students was not significantly related to their evaluations.

4. Fulfillment of needs: students gave significantly higher ratings to teachers in courses that they felt were fulfilling their needs. (Significant at the .001 level.)

5. Teacher qualities: students did not consider teacher qualities equally in their total rating of the teacher.

6. Sex of students: the sex of the students was not significantly related to the evaluation of the teacher, even though female students tended to give female teachers higher ratings.

7. Class of student: the class of the student was not significantly related to the evaluation of the teacher.

8. Age of student: older students (age greater than twenty-three years) rated their teachers significantly

higher than younger students (age less than or equal to twenty-three years). (Significant at .01 level.)

9. Sex of teacher: the sex of the teacher was not significant in the evaluation of the teacher.

10. Experience of teacher: the more experienced teachers (experience greater than or equal to five years) received higher evaluations than the less experienced teachers (experience less than five years).

11. Subject area: when grouped by general subject areas, the teachers of mathematics and science received higher ratings.

Maxwell (68) utilized the community colleges in the states of Florida, Iowa, New York, Texas, and Washington in his research. The purpose of his study was to determine the performance appraisal methods being used in the community colleges of those states and to identify factors that accounted for variations in these procedures.

The results of his research answered the following questions:

1. Who does the appraisals? In rank order, the immediate supervisor, students, and self-evaluations were used in the appraisals.

2. What were the purposes for the appraisals? In rank order, the purposes were for the improvement of instruction, retention of effective personnel, articulation of goals and objectives which affect supervisors and instruc-

tors, tenure decisions, promotion, transfers and discharges, legal requirements, and salary purposes.

3. What methods were used for appraisal? In rank order, the methods used were rating scales, management of objectives, free-form essay, and group appraisal.

4. What criteria for measuring performance were evaluated? In rank order, these criteria were: classroom interaction; the group of traits of attitude, judgment, initiative, and leadership; classroom management; instructional planning and preparation; commitment to institutional goals; interaction with faculty; improvement since last appraisal; contribution to the teaching profession; and participation on college committees.

In her dissertation, Hatcher (49) compared the characteristics, attitudes, and personality traits of Piper Foundation nominees, who represented perceived teacher effectiveness, to a random sample of college faculty selected from Texas colleges and universities. Comparisons were made in the personal and professional background, experience characteristics, educational attitudes, and personality traits.

The conclusions of the study were as follows: 1) the two groups were more different than alike with regard to selected personal and professional background and experience variables; 2) more Piper nominees held doctoral degrees; 3) the most significant difference occurred between the two

groups with regard to their reasons for continuing to teach at the college level, with the Piper nominees giving responses of enjoyment of students, preference for a discipline, and preference for an atmosphere of creativity, freedom and growth; 4) the Piper nominees were older than the random sample; 5) the Piper nominees had more college teaching experience; 6) the Piper nominees had higher academic rank with over 50 percent being full professors; 7) more Piper nominees held tenure; 8) the Piper nominees had had more experience in the development of teaching innovations; 9) there were more similarities than differences between the two groups with regard to their attitudes toward teacher role, change and innovation, evaluation of student growth, students, and the teaching-learning process; and 10) with the exception that the Piper nominees were less cautious, the two groups did not differ significantly in their personality traits.

Summary

There is a growing trend for more student participation in the evaluation of teaching. Even though there is opposition to student ratings of teachers, evidence shows that student judgments are as reliable and valid as those of others on many aspects relating to teaching performance.

While no precise definition of effective teaching exists, studies have been conducted seeking a set of criteria perceived as relating to good teaching. Researchers,

such as Ryans (85), suggest that one empirical approach to the isolating, naming, and refinement of this set of criteria is that of the factor analysis of the intercorrelations of observers' ratings of a number of definable teacher behaviors.

In relationship to the outcomes of student ratings and certain faculty, student, course, and institutional characteristics, the findings are mixed, with most studies being conducted at the four-year college or university level. Research on student evaluations of teaching in the community-junior college has been limited.

CHAPTER III

METHODS AND PROCEDURES

The Research Site

The subjects chosen for this study were the students and faculty of San Antonio College, a community-junior college, located in San Antonio, Texas. San Antonio College is one of the two colleges of the San Antonio Union Junior College District and provides: (a) freshman and sophomore courses designed to fulfill associate degree requirements or for transfer to senior colleges and universities, (b) courses for technical and vocational programs, and (c) a program of developmental studies.

The college is divided into two teaching branches, academic and technical-vocational. The academic branch consists of eighteen departments and 324 full-time faculty members. The developmental studies curriculum is found in the academic branch. The technical-vocational branch contains eight departments and ninety-four full-time faculty. Administratively, all twenty-six department chairpersons are directly responsible to the dean of the college.

San Antonio College is entering into its second half-century of service and has the largest enrollment of

any two-year college in the state of Texas, 19,281 students. This student population is both heterogeneous and nontraditional, reflecting the contemporary trend of many community-junior colleges across the nation.

Students range in age from sixteen to seventy-four years, with 75 percent being over twenty-one years of age, and 44 percent being over twenty-five years of age. Ethnically, 7,165 (36.2 percent) students are Mexican-American, 11,368 (57.4 percent) are Anglo, 1,007 (5 percent) are Black, and 281 (1.4 percent) are of other ancestry. Eleven thousand three hundred and eighty-seven (57.4 percent) students are male and 8,434 (42.6 percent) are female. By classification, 11,797 (59.5 percent) students are freshmen, 5,233 (26.4 percent) are sophomore, and 2,791 (14.1 percent) have more than sixty semester hours of college work. Over three-fourths of the entering freshman students rank in the lower one-fourth of their high school graduating class and show a composite American College Testing Score 4.9 points below the national norm for all students entering college.

The Research Instrument and Its Development

The Faculty Rating Questionnaire (as shown in Appendix A) was developed in the fall semester of 1973 by the Mathematics Department of San Antonio College for the purpose of having their students appraise the teaching of the department. The development of this instrument was the direct result of the administration of the college requiring

each department to establish some method or methods of appraising the teaching of its faculty. The mathematics department considered students to be a primary source of information concerning the quality of its teaching.

A committee consisting of sixteen members of the mathematics department was formed to develop some methods of obtaining student opinions of teaching. This committee spent several months reviewing student evaluation instruments and articles relating to student appraisal of teaching.

The committee found no rating instrument exactly suited to the occasion. As a result, the committee formulated a thirty-five item questionnaire for student evaluation of the mathematics faculty, called the Faculty Rating Questionnaire. This form required students to respond to each of the thirty-five questions on a five place scale.

In April 1973, the Faculty Rating Questionnaire was initially administered to all day classes of the mathematics department of San Antonio College. Means and standard deviations were calculated for each faculty member on each of the thirty-five items, and a departmental average was determined. Profiles for each faculty member were drawn graphically so that each member could compare his average rating on each item to the departmental average on that item. In addition, faculty members were ranked according to a total mean score on all of the thirty-five questions.

Reliability and Validity of the Instrument

In order to establish some measure of reliability for the Faculty Rating Questionnaire, the ratings for the members of the mathematics department for the spring semester 1973 and the spring semester 1974 were compared. The instructors for both of the above semesters were ranked according to the total mean score on all of the thirty-five items of the questionnaire. A Spearman Rank-Difference Coefficient of Correlation was computed between these two rankings. The coefficient of correlation was found to be .85, thus establishing an excellent measure of consistency for the instrument.

No mathematical methods were used to determine validity for the Faculty Rating Questionnaire. Typically, rating scales of this type have claimed validity on the basis of content. It was assumed that the Faculty Rating Questionnaire had "content validity," that is, the questions in the instrument presented statements relating to teaching and its effectiveness. The instrument was developed for the purpose of obtaining from students descriptive information relating to instructor behavior and various aspects of course organization. The questions on the instrument do not represent all the aspects of teacher behavior or teaching, but do reflect some of the dimensions about which students make judgments.

Numerically speaking, the validity of the Faculty Rating Questionnaire could be equated with the statistically determined reliability of the scale. For, as Remmers stated, "By definition, if one is concerned only with measuring the perception the students have of instructors, validity equals reliability" (82:21).

The Data Collecting Procedures

The data for this study were collected during the last week of April and the first week of May, 1975. At this point in time, the student had been exposed to the teaching of his teacher for fourteen weeks, ample time for him to have made judgments of the quality of the course he was taking. All full-time faculty members of San Antonio College teaching three or more day classes were chosen for the study. This consisted of 392 faculty members.

Each of these faculty members was addressed a brief explanatory note with a packet containing a teacher information sheet and thirty-five Faculty Rating Questionnaires. Information sought about the student responder was printed onto each Faculty Rating Questionnaire so that the student would only have to respond to one form. The packets were hand carried and placed into the college mail box of each teacher. The brief explanatory note, teacher information sheet, and student information requested are given in Appendices B, C, and D respectively.

Each faculty member was asked to select one day class of his choosing and have this class evaluate his teaching performance. In addition, the faculty member was asked to complete the teacher information sheet and to return all the completed forms to the college mail box of the researcher. No follow-up reminder was sent.

Of the 392 packets distributed, 180 were returned. Six of these were discarded for lack of completion of the teacher information sheet or the omission of a large number of responses on the Faculty Rating Questionnaire by the students. In addition to the six packets containing eighty-nine student evaluations, eleven other student evaluations were discarded for lack of student information or omission of responses to the evaluation questions. Even with these discarded ratings, data from 3,427 students were analyzed. All data were transferred to IBM answer sheets for optical scanning into the computer.

It must be noted that the number of student evaluations and the number of students included in the sample are not necessarily the same, because students may have rated more than one teacher. There was no way of determining this because of the anonymity of the evaluation.

Statistical Techniques Used

Two statistical techniques were employed in analyzing the data. They were factor analysis and one-way analysis of variance.

The definition given by Fruchler for factor analysis states:

It is a method of analyzing a set of observations from their interrelations to determine whether the variations represented can be accounted for adequately by a number of basic categories (factors) smaller than that with which the investigation was started. Thus data obtained with a large number of a priori measure may be explained in terms of a smaller number of reference variables. (42:1)

The raw data, consisting of all the student responses to the thirty-five items of the Faculty Rating Questionnaire, were reduced to a mean rating on each item for each faculty member. Factor analysis was then used to reduce further these mean ratings to a smaller set of factors relating to teacher effectiveness.

The statistical technique of one-way analysis of variance is designed to test the significance of the differences between two or more groups simultaneously. In this study, the groups were formed according to student, faculty, or course characteristics. The means of the student ratings of these groups were compared to determine if they were significantly different when related to the factors found in the factor analysis portion of the research. All tests of significance will be made at the .01 and .05 level of confidence.

CHAPTER IV

THE ANALYSIS OF THE DATA

Factor Analysis

Responses from the 3,427 students to the Faculty Rating Questionnaire were coded on IBM data sheets and entered into the computer by optical scanner. Student responses of A, B, C, D, and E were given numerical values of 1, 2, 3, 4, and 5 respectively.

From these student responses a mean rating was determined for each of the 174 teachers that were evaluated on each of the thirty-five items of the questionnaire. This constituted a total of 6,090 means. These means were placed into a 174 by 35 matrix, as illustrated, and called the Matrix of Means.

MATRIX OF MEANS

Instructor	Q1	Q2	Q3	...	Q34	Q35
1						
2						
3						
.						
.						
.						
174						

The purpose of employing factor analysis was to determine if the thirty-five items of the Faculty Rating Questionnaire could be reduced to a smaller set of perceived factors of effective teaching by determining if the variance of each item showed variance from the mean of every other item in the questionnaire. In other words, factor analysis finds the independent sources of data variation.

The Matrix of Means was the basis for the principal axis factor analysis program without iterations and with varimax rotation. This factor analysis program produces several types of statistical information. Among those of importance include the intercorrelations between the means of the thirty-five items of the Faculty Rating Questionnaire, factors with eigenvalues, percent of variance for each factor, communalities for each of the thirty-five items, and the rotated factor matrix.

The intercorrelation matrix, a 35 by 35 matrix, consists of the intercorrelations between the means of the responses for each of the thirty-five items of the Faculty Rating Questionnaire. This matrix establishes the fact that the Faculty Rating Questionnaire contains items that are related to teaching effectiveness. Items 1 through 34 show a positive correlation ranging from .34606 to .93753 with item 35, overall teaching rating. The intercorrelation matrix is given in Appendix F.

The communality of a variable refers to the total variance of a variable accounted for by the combination of all common factors. In the present research, each of the thirty-five items of the Faculty Rating Questionnaire represents a variable and the predicting factors of effective teaching represent the common factors. Thus, the communality of a variable gives the amount of variance for that variable that can be predicted from knowledge of the factors. By subtracting the communality from 1, the uniqueness of a variable is determined. This indicates to what degree a variable is unrelated to the others, that is, the degree to which the variance of a variable cannot be predicted from the common factors.

The eigenvalue for each factor consists of the sum of the squares of the loadings under each factor. In this study, there were thirty-five loadings under each factor, since the Faculty Rating Questionnaire consisted of thirty-five items. The eigenvalue measures the amount of variance accounted for by a factor. Normally in the factor analysis program, only those factors with eigenvalues greater than one are considered. However, this criterion can be changed so that a larger or smaller number of factors can be generated.

With regard to the research data, five eigenvalues were found to have a value greater than one, thus five factors were generated. These five factors were subjected to

varimax rotation for better interpretation and naming of the factors. These five factors accounted for 76.3 percent of the total variance.

Observations of the rotated five factor matrix did not give distinct and identifiable clusters according to their loadings with the thirty-five items of the Faculty Rating Questionnaire. Several of the thirty-five item statements loaded heavily on more than one factor, and it was not possible to determine which statements should be placed under a particular factor.

In an attempt to find a better clustering of the thirty-five item statements, the number of factors was increased to six as one eigenvalue observation in the first attempt was near to the value of one. The six factors accounted for 79 percent of the total variance. But once again, when these six factors were rotated, a distinct clustering of item statements by high loadings was difficult to make because several item statements again loaded high on several factors.

Expanding from five to six factors had produced an additional factor that had shown high loadings on only two item statements. Therefore, increasing the number of factors did not appear to be the direction to proceed in seeking a better clustering of the item statements. As a result, the number of factors was reduced to four.

Four factors accounted for 73.2 percent of the variance and rotation of these four factors still resulted in high loadings on several item statements, but lent themselves to a better clustering as far as labeling was concerned. The rotated factor loadings and communalities for these four factors are given in table 7 and table 8, respectively.

The rotation of factors by the varimax method is supposed to give the researcher a distinct clustering of item statements which should allow him to interpret and label the factors. However, as Hodgson points out:

Such interpretation is often confronted with the charge that this is the point at which factor analysis departs from scientific methodology and enters into 'armchair' speculation. . . . Granting that attachment of labels or short descriptive phrases to factors is a subjective process, this does not necessarily characterize the descriptive aspect of factor analysis as being somehow qualitatively different from the descriptive features of other experimental designs. (53:73)

Factor 1, with the variance of 57.1 percent, consisted of the set of item statements listed in table 9. This set of item statements appears to describe the skills that seem to be indicative of an effective teacher, that is, planning, organization, clarity, motivation, stimulation, interest, and enthusiasm of teaching. All of these seem to be the greatest contributors to the over-all rating of the teacher.

TABLE 7

VARIMAX ROTATED FACTOR MATRIX FOR FOUR FACTORS

Item #	Factor 1	Factor 2	Factor 3	Factor 4
Q1	.73858	.45580	.21013	-.07010
Q2	.79994	.35152	.13275	.13862
Q3	.22993	.85391	.12987	.14547
Q4	.63031	.51183	.22287	.05485
Q5	.79532	.32905	.34730	.08725
Q6	.50287	.71846	.23854	.12588
Q7	.57455	.45333	.27073	-.04690
Q8	.64126	.42987	.39707	-.00427
Q9	.67864	.35944	.28495	.22296
Q10	.43143	.74550	.18564	.12561
Q11	.51560	.29016	-.02780	.27249
Q12	.73782	.07564	.09488	.46192
Q13	.26637	.72309	.17213	.37294
Q14	.71587	.39263	.15903	.32508
Q15	.37618	.56336	.26769	.11087
Q16	.35179	.51582	.28725	.31207
Q17	.20378	.86750	.16960	.20247
Q18	.36473	.68294	.10585	.09389
Q19	.46655	.29335	.31417	.43787
Q20	.66685	.43166	.41311	.10895
Q21	.45285	.23470	.47612	.28542
Q22	.19087	.17148	.80172	.22052
Q23	.54421	.17528	.63056	.06714
Q24	.61185	.08011	.46449	.26323
Q25	.22738	.20716	.80286	.23501
Q26	.21502	.19555	.82289	.17153
Q27	.14980	.15283	.69278	.34825
Q28	.07466	.43875	.53594	.50924
Q29	.00282	.14855	.29537	.75855
Q30	.33682	.13422	.41457	.67088
Q31	.28332	.29127	.35383	.62838
Q32	.59561	.55694	.33550	.21938
Q33	.58592	.47497	.30370	.24471
Q34	.62838	.58538	.27981	.20666
Q35	.66923	.58396	.27030	.20261

TABLE 8
COMMUNALITY FOR FOUR FACTORS

Item #	Communality
Q1	.80232
Q2	.80032
Q3	.82007
Q4	.71194
Q5	.86904
Q6	.84181
Q7	.61111
Q8	.75368
Q9	.72066
Q10	.79214
Q11	.42506
Q12	.77247
Q13	.76253
Q14	.79759
Q15	.54284
Q16	.56973
Q17	.86385
Q18	.61945
Q19	.59415
Q20	.81355
Q21	.56831
Q22	.75723
Q23	.72901
Q24	.66582
Q25	.79443
Q26	.79104
Q27	.64702
Q28	.74465
Q29	.68471
Q30	.75341
Q31	.68517
Q32	.82564
Q33	.72102
Q34	.85854
Q35	.90299

TABLE 9
FACTOR 1: TEACHING SKILLS

Item #	
1.	Ability to stimulate interest, intellectual curiosity, and independent thinking.
2.	Ability to explain topics clearly.
4.	Ability to answer questions adequately.
5.	Over-all evaluation of teaching skills.
7.	Interest and enthusiasm in teaching this course.
8.	Motivates students to do their best.
9.	Ability to give examples and illustrations effectively.
11.	Legibility of material written on the board and/or handouts.
12.	Apparent planning and organization of classes.
14.	Over-all evaluation of classroom management.
19.	Rate the clearness of assignments.
20.	Rate the instructor's ability in motivating you to want to learn the subject matter.
24.	Rate the pacing of the course.
32.	Assign a rating to indicate your feelings about taking another course from this instructor.
33.	Rate this instructor in comparison with other instructors you have had in this subject area.
34.	Rate this instructor in comparison with other instructors you have had at San Antonio College.
35.	Assign an over-all rating for this instructor.

Factor 2, with a variance of 7.9 percent, showed the set of item statements listed in table 10.

TABLE 10

FACTOR 2: TEACHER-STUDENT INTERACTION

Item #	
3.	Willingness to answer questions.
6.	Efforts in helping students to understand explanations.
10.	Does the instructor try to understand your questions?
13.	Fairness in dealing with students.
15.	Instructor's encouragement of students to seek help in out-of-class conferences.
16.	Instructor's availability to students who seek help in out-of-class conferences.
17.	Instructor's respect for and courtesy toward students.
18.	How do you rate the instructor's sense of humor?

These items clearly relate to the teacher's attitude and actions toward the student. This factor certainly indicates that students consider their interaction with the instructor to be important.

Factor 3, contributing a variance of 4.8 percent, was identified with the set of item statements given in table 11.

TABLE 11
FACTOR 3: COURSE CONTENT

Item #	
21.	How well is excessive repetition of material covered in prerequisite courses avoided?
22.	To what extent did the assignments prepare you for major quizzes?
23.	Rate the degree of learning experience you received from the assignments.
25.	How well do the examinations cover the important material given in lectures or assignments?
26.	To what degree are examinations free from ambiguity?
27.	How would you rate the length of examinations?

This set of item statements seems to concentrate on the material that was presented in terms of the important points of the course, their relationship to examinations, and the degree of learning that took place.

The fourth and last factor had a variance of 3.4 percent and was associated with the set of item statements as found in table 12.

TABLE 12
FACTOR 4: GRADING

Item #	
28.	Indicate how fair the instructor was in grading examinations.
29.	Rate the instructor's performance in returning examinations and/or assignments.
30.	Indicate how well the examinations were spaced over the semester.
31.	Indicate how clearly the instructor's grading system was explained.

Obviously, the item statements listed for factor 4 relate to examination and grading, not only in terms of fairness, but also to some of the mechanics of the examination processes.

One-Way Analysis of Variance

The one-way analysis of variance was used to determine if the four perceived factors of effective teaching found in the factor analysis portion of the investigation showed any significant relationships to certain student, faculty, and course characteristics. The one-way analysis of variance tested for equality of the means of different groups across each of the four perceived factors of effective teaching.

Student Variables

The first variable tested by the one-way analysis of variance was that of the sex of the student rater and its relationship to each of the four factors of effective teaching. As the results show in table 13, the sex of the student rater was significant for all four factors at the .01 level of confidence, with the female students giving higher ratings on all four factors.

The variable of ethnic origin of the student rater was found to be significantly related to perceived factor 2 (teacher-student interaction) at the .05 level, and perceived factor 3 (course content) at the .01 level. The results, as given in table 14, show that the Mexican-American students gave lower ratings on all four factors.

The age of the student rater was broken into six categories for the comparison of the mean ratings. Table 15 reveals that all four perceived factors of effective teaching were significantly related to the age of the student rater at the .01 level. The seventeen to twenty year age group gave the lowest ratings on all four factors, while the age group, fifty years and older, gave the highest ratings.

TABLE 13

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS
ACCORDING TO THE SEX OF THE STUDENT RATER

Factor	Male n=1804	Female n=1618	F Ratio
1	1.7259	1.6617	10.434**
2	1.6732	1.6016	12.868**
3	1.8831	1.8031	13.426**
4	1.7242	1.6342	14.824**

**significant at .01 level

TABLE 14

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS
ACCORDING TO THE ETHNIC ORIGIN OF THE STUDENT RATER

Factor	Anglo n=1872	Mexican American n=1177	Black n=175	Other n=142	F Ratio
1	1.6889	1.7056	1.6765	1.6635	0.386
2	1.6345	1.6630	1.5167	1.6143	3.366*
3	1.8172	1.8966	1.8183	1.8009	4.100**
4	1.6677	1.7132	1.6286	1.6455	1.583

* significant at .05 level

** significant at .01 level

TABLE 15

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS
ACCORDING TO THE AGE OF THE STUDENT RATER

Factor	17-20 years n=1952	21-25 years n=774	26-30 years n=268	31-40 years n=250	41-50 years n=114	+50 years n=69	F Ratio
1	1.7466	1.6928	1.6218	1.5484	1.5344	1.3665	13.496**
2	1.6927	1.6367	1.5488	1.5063	1.4563	1.3072	14.108**
3	1.9008	1.8622	1.7383	1.6553	1.6702	1.4838	15.472**
4	1.7433	1.6829	1.5634	1.5017	1.4766	1.3623	13.539**

** significant at .01 level

The classification of the student rater was presented in three categories: freshman, sophomore, and students with more than sixty semester hours. Table 16 shows all four perceived factors to be significantly related to the variable of student classification. Factor 1 was significant at the .05 level and the other factors were significant at the .01 level. Students with more than sixty semester hours gave the highest ratings on all factors.

TABLE 16

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS
ACCORDING TO THE CLASSIFICATION OF THE STUDENT RATER

Factor	Freshman n=1782	Sophomore n=1360	More than 60 Semester Hrs n=219	F Ratio
1	1.7013	1.7051	1.5881	4.032*
2	1.6609	1.6298	1.5321	5.135**
3	1.8681	1.8404	1.7218	5.274**
4	1.7119	1.6698	1.5293	7.377**

* significant at .05 level

** significant at .01 level

The degree program of each rater was the next variable examined. Categories of the variable were four year degree program, two year or technical degree program, and undecided. None of the four perceived factors of effective teaching was significantly related to this variable as shown in table 17.

TABLE 17

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS
ACCORDING TO THE DEGREE PROGRAM OF THE STUDENT RATER

Factor	Four Year n=2287	Two Year or Technical n=753	Undecided n=381	F Ratio
1	1.7019	1.6781	1.6896	0.492
2	1.6360	1.6411	1.6567	0.210
3	1.8446	1.8412	1.8566	0.079
4	1.6723	1.6948	1.7084	0.641

Each student rater was asked to specify his grade point average on a scale of 0 to 4. The outcome of the one-way analysis of variance, as given in table 18, shows that all four factors of effective teaching were significantly related to the grade point average of the rater at the .01 level. Students with a GPA of 3.5 to 4.0 gave the highest ratings on all four factors.

TABLE 18

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS
ACCORDING TO THE GRADE POINT AVERAGE
OF THE STUDENT RATER

Factor	3.5- 4.0 n=543	2.50- 3.49 n=1651	1.50- 2.49 n=520	0.5- 1.49 n=35	.0- .49 n=3	F Ratio
1	1.5697	1.7182	1.7401	1.8296	1.8027	8.333**
2	1.5069	1.6626	1.7010	1.7525	1.6250	9.624**
3	1.6771	1.8675	1.9267	1.9453	1.9443	12.393**
4	1.5391	1.7056	1.7381	1.7714	2.0833	7.707**

** significant at .01 level

The last two variables examined were that of student course load and student work load. Table 19 shows that the student course load was not significantly related to the four perceived factors of effective teaching.

TABLE 19

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS
ACCORDING TO THE COURSE LOAD OF THE STUDENT RATER

Factor	Less than 12 Semester Hours n=765	12 Semester Hours Or More n=2647	F Ratio
1	1.6756	1.6999	1.039
2	1.6223	1.6433	0.774
3	1.8583	1.8402	0.476
4	1.6617	1.6869	0.807

Table 20 shows that students who worked less gave the better ratings on all four factors. Only perceived factor 3 (course content) was significantly related to the work load of the student. This significance was at the .05 level.

TABLE 20

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS
ACCORDING TO THE WORK LOAD OF THE STUDENT RATER

Factor	Less than 16 Hours per Week n=1731	16 or More Hours per Week n=1646	F Ratio
1	1.6861	1.7036	0.769
2	1.6317	1.6480	0.653
3	1.8220	1.8681	4.362*
4	1.6771	1.6866	0.158

* significant at .05 level

Faculty Variables

Tables 21 through 29 show that the four perceived factors of effective teaching were not significantly related to the faculty variables of sex, ethnic origin, age, teaching area, academic rank, tenure status, highest degree held, types of teaching experience, and number of years of teaching experience prior to the present teaching position. In fact, the results show no consistent pattern except on the variables of academic rank, tenure status, highest degree held, types of teaching experience, and number of years of teaching experience prior to present teaching position. Non-tenured teachers, those with the doctorate, and those with teaching experience in only the junior college and senior institutions received the higher ratings. Full professors and those teachers with the most teaching experience prior to coming to San Antonio College received the lower ratings.

TABLE 21

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS ACCORDING TO THE SEX OF THE FACULTY MEMBER

Factor	Male N=122	Female N=52	F Ratio
1	1.6896	1.6684	0.189
2	1.6300	1.6131	0.117
3	1.7901	1.7977	0.026
4	1.6605	1.6888	0.277

TABLE 22

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS ACCORDING TO THE ETHNIC ORIGIN OF THE FACULTY MEMBER

Factor	Anglo N=154	Mexican American N=10	Black N=2	Other N=8	F Ratio
1	1.6883	1.5642	1.7770	1.7110	0.653
2	1.6261	1.5984	1.8975	1.5680	0.686
3	1.7981	1.7483	1.7955	1.7350	0.208
4	1.6662	1.7435	1.7165	1.6162	0.263

TABLE 23

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS ACCORDING TO THE AGE OF THE FACULTY MEMBER

Factor	20-25 Years N=4	26-30 Years N=25	31-35 Years N=38	36-40 Years N=31	41-50 Years N=39	Over 50 Years N=37	F Ratio
1	1.7367	1.6425	1.6245	1.6645	1.6926	1.7712	1.131
2	1.6982	1.6132	1.5674	1.6342	1.6025	1.7000	0.865
3	1.9377	1.7580	1.7838	1.7977	1.7576	1.8407	0.619
4	1.6147	1.7104	1.6550	1.7250	1.6617	1.6219	0.459

TABLE 24

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS ACCORDING TO THE TEACHING AREA OF THE FACULTY MEMBER

Factor	Natural Science N=47	Social Science N=33	Fine Arts N=40	Other Acad. N=23	Voc.- Tech. N=31	F Ratio
1	1.7538	1.6145	1.6997	1.7248	1.5974	1.988
2	1.6781	1.5793	1.6146	1.7026	1.5488	1.509
3	1.8055	1.7823	1.7982	1.7905	1.7768	0.062
4	1.6598	1.6187	1.7426	1.6564	1.6506	0.759

Note: The breakdown of the teaching areas is given in Appendix E.

TABLE 25

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS ACCORDING TO ACADEMIC RANK OF THE FACULTY MEMBER

Factor	Instructor N=28	Assistant Professor N=100	Associate Professor N=34	Full Professor N=12	F Ratio
1	1.6689	1.6618	1.7100	1.8195	1.160
2	1.5811	1.6190	1.6428	1.7257	0.716
3	1.7550	1.7924	1.7906	1.8836	0.572
4	1.6644	1.6591	1.6716	1.7544	0.311

TABLE 26

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS ACCORDING TO TENURE STATUS OF THE FACULTY MEMBER

Factor	Tenured N=80	Non-tenured N=94	F Ratio
1	1.7277	1.6455	3.443
2	1.6656	1.5903	2.815
3	1.8359	1.7552	3.560
4	1.7150	1.6298	3.039

TABLE 27

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS ACCORDING TO HIGHEST DEGREE OF THE FACULTY MEMBER

Factor	B.S. N=8	M.S. N=149	Ph.D. N=17	F Ratio
1	1.6527	1.6983	1.5661	1.606
2	1.5555	1.6383	1.5403	1.065
3	1.7032	1.8052	1.7215	1.080
4	1.8164	1.6624	1.6566	0.875

TABLE 28

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS ACCORDING TO NUMBER OF YEARS OF TEACHING EXPERIENCE OF FACULTY MEMBER PRIOR TO PRESENT POSITION

Factor	0 Years	1-5 Years	6-10 Years	11-15 Years	16-20 Years	Over 20 Years	F Ratio
1	1.6667	1.6932	1.6403	1.6370	1.8490	1.8970	0.959
2	1.5993	1.6441	1.5886	1.7027	1.7050	1.6402	0.385
3	1.8504	1.7888	1.7436	1.6513	1.6724	1.9017	1.205
4	1.6507	1.7086	1.6343	1.5050	1.5788	1.7552	0.779

TABLE 29
 PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS
 ACCORDING TO THE TYPES OF TEACHING EXPERIENCE
 OF THE FACULTY MEMBER

Factor	None n=48	Public School Only n=63	Junior College Only n=6	College or Univ. Only n=28	Public School and Junior College n=5	Public School and Senior College or Univ. n=13	Junior and Senior College or Univ. n=5	Public School- Junior College- Senior College n=6	F Ratio
1	1.6680	1.6861	1.7102	1.7682	1.6590	1.6305	1.4846	1.6527	0.756
2	1.5986	1.6450	1.6005	1.6700	1.6362	1.5908	1.5360	1.5782	0.295
3	1.8536	1.7850	1.8302	1.8007	1.6964	1.6993	1.5540	1.7823	1.140
4	1.6524	1.6914	1.7493	1.6185	1.5892	1.7895	1.3548	1.7882	1.325

Only factor 1 (teaching skills) was significantly related to the total number of years of teaching experience of the faculty member. As table 30 shows, this significance was at the .05 level.

TABLE 30

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS
ACCORDING TO THE TOTAL NUMBER OF YEARS OF TEACHING
EXPERIENCE OF THE FACULTY MEMBER

Factor	1-5 Years n=32	6-10 Years n=60	11-15 Years n=44	16-20 Years n=22	21-25 Years n=8	Over 26 Years n=8	F Ratio
1	1.6804	1.6025	1.7038	1.7391	1.8694	1.8477	2.348*
2	1.5952	1.5613	1.6570	1.7118	1.7815	1.6499	1.582
3	1.8162	1.7652	1.7770	1.8283	1.8101	1.8677	0.364
4	1.6688	1.6372	1.7079	1.6570	1.6822	1.7134	0.278

* significant at .05 level

Table 31 indicates that factor 2 (teacher-student interaction) was significantly related to the faculty variable of number of graduate hours in teaching field. This level of significance was .05.

TABLE 31

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS ACCORDING TO THE NUMBER OF GRADUATE HOURS IN THE TEACHING FIELD OF THE FACULTY MEMBER

Factor	0-18 Semester Hours N=16	19-36 Semester Hours N=64	37-60 Semester Hours N=52	More Than 60 Semester Hours N=42	F Ratio
1	1.6227	1.7362	1.6916	1.6153	1.710
2	1.4979	1.6968	1.6260	1.5624	2.955*
3	1.7451	1.8363	1.8106	1.7208	1.642
4	1.6517	1.7306	1.6874	1.5588	2.546

*significant at .05 level

The number of years of teaching experience of the faculty member in his present teaching position showed significant relationships to three of the four perceived factors. Table 32 shows this variable significantly related to factor 1, factor 2, and factor 3 at the .05 level.

TABLE 32

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS ACCORDING TO THE NUMBER OF YEARS OF TEACHING EXPERIENCE OF THE FACULTY MEMBER IN PRESENT POSITION

Factor	1-5 Years n=66	6-10 Years n=83	11-15 Years n=12	More Than 16 Years n=13	F Ratio
1	1.6199	1.6913	1.7479	1.8944	3.646*
2	1.5463	1.6549	1.6532	1.8072	3.666*
3	1.7269	1.8165	1.8087	1.9555	2.918*
4	1.6051	1.6885	1.8259	1.7235	2.066

* significant at .05 level

Course Variables

Courses were examined from the aspect of required versus non-required, developmental studies versus non-developmental studies, and meeting time. Tables 33, 34, and 35 show that none of these variables was significantly related to the four perceived factors of effective teaching, even though developmental studies courses received higher ratings and courses meeting the Monday-Wednesday-Friday afternoon schedule received lower ratings.

TABLE 33

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS
ACCORDING TO REQUIRED VERSUS NON-REQUIRED COURSES

Factor	Required Course n=2502	Non-Required Course n= 884	F Ratio
1	1.6953	1.7004	0.057
2	1.6354	1.6576	0.937
3	1.8548	1.8179	2.181
4	1.6950	1.6502	2.810

TABLE 34

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS
ACCORDING TO DEVELOPMENTAL STUDIES VERSUS
NON-DEVELOPMENTAL STUDIES COURSE

Factor	Developmental Studies Courses n=16	Non-Developmental Studies Courses n=158	F Ratio
1	1.5607	1.6957	3.115
2	1.5071	1.6369	2.813
3	1.6808	1.8036	2.756
4	1.6050	1.6754	0.689

TABLE 35

PERCEIVED FACTORS OF EFFECTIVE TEACHING AND MEAN RATINGS
ACCORDING TO THE MEETING TIME OF THE COURSE

Factor	MWF AM Only n=67	MWF PM Only n=21	TT AM Only n=55	TT PM Only n=15	Other n=16	F Ratio
1	1.7114	1.6872	1.6930	1.6627	1.5461	1.065
2	1.6661	1.6843	1.5941	1.6024	1.5002	1.422
3	1.8071	1.8365	1.8008	1.8214	1.6162	1.802
4	1.7011	1.7637	1.6564	1.6315	1.4886	1.981

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The community-junior college purports to be a teaching institution, striving to have the most effective teaching possible. In order to accomplish this goal, there must be an evaluation process. But before the evaluation process takes place, there should be a criterion or set of criteria against which to assess the outcomes of the evaluation.

Since one method of evaluating teaching is through the use of rating forms completed by students, their perceptions of what they consider to be effective teaching could help to establish such criteria. Perhaps, because of the uniqueness of the community-junior college, research seeking criteria of effective teaching in these institutions has been limited.

The purposes of this study sought the answers to the following questions:

1. What criteria factors of effective teaching are perceived by the students in a large, urban community-junior college?

2. Are there any significant relationships between these perceived criteria factors of effective teaching and certain student, faculty, and course characteristics?

The full-time day faculty of San Antonio College were asked to have one of their classes rate their instruction utilizing the Faculty Rating Questionnaire, a thirty-five item, five point scaled rating form, developed by the Mathematics Department of San Antonio College. Data were acquired from 174 faculty members and 3,427 student raters.

Mean ratings for each faculty member were calculated for each of the thirty-five rating items. This formed the matrix of means, a 174 by 35 matrix. This matrix was the basis for the statistical analysis by way of the principal axis factor analysis without iterations and with varimax rotation.

Although five factors had eigenvalues greater than one, the factor loadings clustered for better interpretation when only four factors were considered. These four factors of effective teaching accounted for 73.2 percent of the variance. The four factors were analyzed and labeled according to the item statements of the Faculty Rating Questionnaire that clustered under each factor.

Factor 1 was labeled "teaching skills," containing a cluster of seventeen item statements and having a variance of 57.1 percent. "Teacher-student interaction" was the label assigned to factor 2. This factor had a variance of

7.9 percent and consisted of eight item statements.

Factor 3, named "course content," had a variance of 4.8 percent and contained a clustering of six item statements. The fourth factor had a variance of 3.4 percent and was labeled "grading" according to the four item statements clustered with it.

One-way analysis of variance was used to test for significant differences of the mean responses of different groups according to certain student, faculty, and course characteristics in relationship to the four perceived factors of effective teaching. Factor 1 was significantly related to the student characteristics of sex (.01), age (.01), classification (.05), and grade point average (.01). Faculty characteristics related to factor 1 were total number of years of teaching experience (.05) and the number of years of teaching experience in the teacher's present position (.05).

Factor 2 was found to be significantly related to the sex (.01), ethnic origin (.05), age (.01), classification (.01), and grade point average (.01) of the student. Factor 2 was significantly related to the faculty characteristics of number of graduate hours in teaching field (.05) and the number of years of teaching experience in teacher's present position (.05).

Factor 3 was determined to be significantly related to the student characteristics of sex (.01), ethnic origin

(.01), age (.01), classification (.01), grade point average (.01), and student work load (.05). The only faculty characteristic significantly related to factor 3 was the number of years of teaching experience in the teacher's present position (.05).

Only student characteristics were found to be significantly related to factor 4. These were sex (.01), age (.01), classification (.01), and grade point average (.01). No course characteristics were found to be significantly related to any of the four perceived factors of effective teaching.

In summarizing the statistical findings of this study, it can be concluded that the four perceived factors of effective teaching that were identified had the greatest number of significant relationships with student rater characteristics. Fewer significant relationships were found between these four perceived factors and teacher characteristics.

Conclusions

The following conclusions were drawn from the findings of this study:

1. Four perceived factors of effective teaching were identified.

2. Of these four perceived factors of effective teaching, factor 1, labeled "teaching skills," weighed more on the evaluation process because it accounted for

the greatest amount of variance, 57.1 percent.

3. In relationship to student characteristics, the following patterns emerged from the student ratings of faculty in this study: a) female students gave the highest ratings; b) Mexican-American students gave the lowest ratings; c) the older the students, the higher the ratings, with the youngest age group giving the lowest ratings while the oldest age group gave the highest ratings; d) the more semester hours of schooling the students had, the higher the ratings, with students with more than sixty semester hours giving the highest ratings; e) the higher the GPA of the students, the higher their ratings; f) the lighter the course load of the students, the higher the ratings; and g) the lighter the work load of the students, the higher the ratings.

4. Student characteristics found significant to all four perceived factors were sex, age, classification, and grade point average. Ethnic origin significantly related to factors 2 and 3, while the work load of the student rater was determined to be significantly related to factor 3. The course load and degree program characteristics were not significant.

Apparently, all the student raters in this study did not have the same concept of what constituted effective teaching. This may very well be the result of the heterogeneous makeup of the rater group.

5. In relationship to faculty characteristics, the following patterns emerged from the student ratings of faculty: a) full professors received the lowest ratings, b) non-tenured faculty received the highest ratings, c) faculty with the Ph.D. received higher ratings, d) faculty with the most teaching experience prior to coming to San Antonio College received lower ratings, e) faculty with only teaching experience in the junior college and senior institutions received the highest ratings, f) faculty with the greatest number of years of teaching experience received lower ratings, g) faculty with the most number of graduate hours in their teaching area received higher ratings, and h) faculty with the greatest number of years of teaching experience at San Antonio College received lower ratings.

6. Faculty characteristics of sex, ethnic origin, age, teaching area, academic rank, tenure status, highest degree held, teaching experience prior to present position, and types of teaching experience were not significantly related to the perceived factors of effective teaching. The number of years of teaching experience in the teacher's present position showed significant relationships to factor 1, factor 2, and factor 3. Total years of teaching experience was significantly related to factor 1, while number of graduate hours in teaching area was significantly related to factor 2. The faculty, as a whole, when judged by their characteristics, was seen by the student raters as being a

homogeneous group.

7. In relationship to course characteristics, the following patterns emerged from the student ratings of the faculty: a) teaching in developmental courses was rated the highest and b) teaching in courses meeting the Monday-Wednesday-Friday afternoon schedule was rated lower.

8. The three course characteristics of required versus non-required courses, developmental studies versus non-developmental studies courses, and the meeting time of the course were not significantly related to any of the four perceived factors of effective teaching.

9. Analysis of the data further established the Faculty Rating Questionnaire as an instrument that does show a measure of effective teaching as perceived by students. The mean ratings from the first thirty-four item statements of the questionnaire showed positive correlations, ranging from .34606 to .93753, to the mean rating of the last item statement of the rating form, overall evaluation of the instructor.

10. The four perceived factors of effective teaching found in this study tend to support the results of other studies. Crannell (22), Coffman (18), Bendig (10), Hodgson (53), Isaacson (54), Hildebrand (52), and Greenwood (46) found factors relating to effective teaching in studies at four-year institutions of higher education. Some of the same factors were found in this study.

The results of this study also support the findings of other studies in the community-junior college. Some of the same findings by Foree (39), relating faculty characteristics to evaluating teaching, and Walker (96), relating student characteristics to evaluating teaching, were also found in this study.

Recommendations

1. That the findings be given to the administration and all departments of San Antonio College for whatever purposes they deem pertinent. Possible uses of the findings could be made with regard to such areas as: a) the counseling and placement of students; b) the making or modifying of policies relating to faculty tenure, rank, schoolwide and departmental faculty evaluation, screening of potential new faculty, and faculty development programs; and c) course scheduling.

2. That further investigations be conducted at San Antonio College into the student variables that were found to be significantly related to the four perceived factors of effective teaching. These variables included the sex, ethnic origin, age, classification, grade point average, and work load of the student. All of these variables add to the complexity of the teacher evaluation process and to the difficulties of identifying what constitutes effective teaching. There is a need to determine the reasons for the different conceptions of effective teaching for these signifi-

cantly related student variables.

3. That similar investigations be conducted at San Antonio College into the faculty variables that were found to be significantly related to the four perceived factors of effective teaching. Why do the number of years of teaching in one's present position, the total number of years of teaching experience, and the number of graduate hours in one's teaching field show significant relationships to the perceived factors of effective teaching?

4. Research should be conducted in other community-junior colleges to determine if student perceptions of effective teaching are similar to those found in this study.

5. Research should be made to find other item statements that might generate other factors of effective teaching. This would increase the percentage of variance accounted for by student ratings. By doing this, it would increase both the reliability and validity of these ratings. This would benefit both the critics and proponents of student ratings. The critics would be provided with additional information that student values may be sound and those who use student ratings would be provided with the same information as a basis for further interpretation.

6. The results of this study should be disseminated to all institutions engaged in preparing individuals to teach in the community-junior college. Information from this study could help these institutions to establish

courses and objectives for their teacher-training programs.

7. Research should be directed toward the development of faculty evaluations models using as a basis the four perceived factors of effective teaching.

8. All institutions and departments that employ rating forms to evaluate instruction should utilize the factor analysis approach to statistical investigation.

There are several reasons for employing factor analysis:

a) It allows for the reduction of data to a more manageable form. b) It would help individual institutions, departments, and individuals to identify those factors perceived as relating to effective teaching by those doing the rating. This could result in establishing orientation programs for new faculty, the development or change of general course objectives, or the modification of teaching techniques. c) It could help to eliminate the duplication of items on the rating instrument as well as to eliminate items that are not determined to be important.

9. That further investigations be conducted by matching students and faculty in courses by certain common characteristics as ethnic origin, age, or sex, to determine if there are changes in the student's perception of teaching.

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APPENDIX

- A. Faculty Rating Questionnaire
- B. Explanatory Letter Sent to Faculty
- C. Faculty Information Sheet
- D. Student Information Sheet
- E. Teaching Areas of Faculty
- F. Matrix of Item Intercorrelations

APPENDIX A: FACULTY RATING QUESTIONNAIRE

This questionnaire gives you an opportunity to rate the instructor that you have for this course. Please rate your instructor as A, B, C, D, or F for each of the following items by placing your choice in the blank to the left of each question. The list below is furnished as a guide.

RATING	DEFINITION OF RATING		
A	Superior	Always	Very High
B	Above Average	Frequently	High
C	Average	Half-the-time	Medium
D	Below Average	Occasionally	Low
F	Poor	Never	Very Low

- ___ 1. Ability to stimulate interest, intellectual curiosity, and independent thinking.
- ___ 2. Ability to explain topics clearly.
- ___ 3. Willingness to answer questions.
- ___ 4. Ability to answer questions adequately.
- ___ 5. Over-all evaluation of teaching skills.
- ___ 6. Efforts in helping students to understand explanations.
- ___ 7. Interest and enthusiasm in teaching this course.
- ___ 8. Motivates students to do their best.
- ___ 9. Ability to give examples and illustrations effectively.
- ___ 10. Does the instructor try to understand your questions?
- ___ 11. Legibility of material written on the board and/or handouts.
- ___ 12. Apparent planning and organization of classes.
- ___ 13. Fairness in dealing with students.
- ___ 14. Over-all evaluation of classroom management.
- ___ 15. Instructor's encouragement of students to seek help in out-of-class conferences.
- ___ 16. Instructor's availability to students who seek help in out-of-class conferences.

APPENDIX A--Continued

- ___ 17. Instructor's respect for and courtesy toward students.
- ___ 18. How do you rate the instructor's sense of humor?
- ___ 19. Rate the clearness of assignments.
- ___ 20. Rate the instructor's ability in motivating you to want to learn the subject matter.
- ___ 21. How well is excessive repetition of material covered in prerequisite courses avoided?
- ___ 22. To what extent did the assignments prepare you for major quizzes?
- ___ 23. Rate the degree of learning experience you received from the assignments.
- ___ 24. Rate the pacing of the course.
- ___ 25. How well do the examinations cover the important material given in lectures or assignments?
- ___ 26. To what degree are examinations free from ambiguity?
- ___ 27. How would you rate the length of examinations?
- ___ 28. Indicate how fair the instructor was in grading examinations.
- ___ 29. Rate the instructor's performance in returning examinations and/or assignments.
- ___ 30. Indicate how well the examinations were spaced over the semester.
- ___ 31. Indicate how clearly the instructor's grading system was explained.
- ___ 32. Assign a rating to indicate your feelings about taking another course from this instructor.
- ___ 33. Rate this instructor in comparison with other instructors you have had in this subject area.
- ___ 34. Rate this instructor in comparison with other instructors you have had at San Antonio College.
- ___ 35. Assign an over-all rating for this instructor.

APPENDIX B: EXPLANATORY LETTER SENT TO FACULTY

April 21, 1975

Fellow San Antonio College Faculty Member:

With the consent of the college administration, I am collecting data for my dissertation utilizing the faculty and students of San Antonio College. This research involves student evaluation of faculty.

This envelope contains a faculty information sheet and thirty-five student evaluation forms. You are asked to select one of your day classes to evaluate your teaching performance.

Please return the completed evaluation forms and the faculty information sheet in this envelope to Box 303 no later than April 30.

Thank you for your cooperation in this endeavor.

Tommy Knox
Mathematics Department
Ext. 296

APPENDIX C: FACULTY INFORMATION SHEET

Please fill in as completely as possible all information requested about yourself. DO NOT SIGN YOUR NAME.

1. Teaching Area: _____
2. Is this a Developmental Studies class? ___ Yes ___ No
3. Time this class meets: _____
4. Sex: ___ M ___ F
5. Age Range: ___ 20-25 ___ 31-35 ___ 41-50
 ___ 26-30 ___ 36-40 ___ over 50
6. Ethnic Origin: ___ Anglo ___ Black
 ___ Mexican-American ___ Other
 (specify)
7. Faculty Rank:
 ___ Instructor ___ Associate Professor
 ___ Assistant Professor ___ Full Professor
8. Do you have tenure? ___ Yes ___ No
9. Type and number of years of teaching experience prior to San Antonio College.
 ___ Elementary or Junior High School
 ___ High School
 ___ Community-Junior College
 ___ Four-year College or University
10. Number of years of teaching experience at San Antonio College including this year: _____
11. Approximate number of graduate hours (including Masters work) in your teaching area: _____
12. Highest degree held: _____

APPENDIX E: TEACHING AREAS OF FACULTY

Natural Science N=47	Mathematics	- - - - -	24
	Geology	- - - - -	2
	Biology	- - - - -	11
	Chemistry	- - - - -	4
	Earth Sciences	- - - - -	2
	Physics	- - - - -	4
Social Science N=33	Government	- - - - -	2
	History	- - - - -	12
	Social Science	- - - - -	4
	Economics	- - - - -	2
	Sociology	- - - - -	3
	Psychology	- - - - -	10
Fine Arts N=40	English	- - - - -	18
	Theatre and Communications	- - -	5
	Art	- - - - -	1
	Journalism	- - - - -	3
	Foreign Language	- - - - -	9
	Music	- - - - -	4
Other Academic N=23	Business Administration	- - - - -	7
	Physical Education	- - - - -	10
	Reading	- - - - -	6
Technical- Vocational N=31	Law Enforcement	- - - - -	2
	Nursing	- - - - -	2
	Drafting	- - - - -	3
	Engineering Technology	- - - - -	1
	Municipal Administration	- - - - -	1
	Management	- - - - -	3
	Business Technology	- - - - -	8
	Data Processing	- - - - -	4
	Child Development	- - - - -	3
	Technical Mathematics	- - - - -	1
	Medical Technology	- - - - -	1
	Mortuary Science	- - - - -	2

APPENDIX F: MATRIX OF ITEM INTERCORRELATIONS

	Q1	Q2	Q3	Q4	Q5	Q6	Q7
Q1							
Q2	.73791						
Q3	.54480	.55618					
Q4	.69148	.82106	.68487				
Q5	.79930	.82599	.54135	.79494			
Q6	.70676	.73072	.78990	.76101	.72849		
Q7	.76356	.55670	.52720	.57350	.67942	.64253	
Q8	.76691	.63233	.53074	.65041	.76776	.70874	.71840
Q9	.70077	.75828	.54266	.71263	.75922	.70826	.62734
Q10	.64973	.67165	.80280	.70396	.69079	.82882	.58828
Q11	.43629	.53281	.40405	.48105	.50286	.52156	.40044
Q12	.49847	.68254	.34057	.56330	.67699	.50870	.50726
Q13	.49868	.51852	.72770	.55319	.52208	.71414	.48594
Q14	.70498	.75486	.53929	.70987	.77107	.74865	.54636
Q15	.54967	.44748	.57337	.56767	.56959	.67307	.61205
Q16	.49328	.46550	.55078	.51475	.53050	.63609	.55070
Q17	.54008	.51594	.81641	.61605	.53088	.78847	.54017
Q18	.68438	.54690	.60910	.50740	.52032	.66773	.52288
Q19	.52494	.57044	.43310	.46972	.57179	.56811	.43354
Q20	.81926	.71920	.58974	.66829	.80574	.72010	.71902
Q21	.50878	.54553	.41459	.54573	.57863	.52206	.47631
Q22	.34234	.37898	.34614	.39163	.50831	.45517	.35364
Q23	.58842	.54353	.38816	.53402	.69326	.54943	.50408
Q24	.54439	.51827	.31389	.44665	.66696	.51663	.48078
Q25	.38428	.42846	.36983	.46745	.55319	.52440	.36700
Q26	.37057	.43833	.35668	.48095	.53233	.47058	.42413
Q27	.32451	.34011	.31195	.38711	.45971	.40179	.34586
Q28	.37826	.36492	.48593	.45189	.45758	.51280	.38218
Q29	.15851	.17113	.31209	.18314	.26403	.26145	.22991
Q30	.36115	.46403	.37546	.42540	.54498	.47663	.37384
Q31	.44293	.48333	.41788	.43575	.47286	.50664	.35403
Q32	.72839	.76258	.68602	.74501	.80882	.78134	.61274
Q33	.67089	.71186	.59573	.67862	.73133	.69467	.58767
Q34	.80484	.80036	.69869	.76195	.82576	.81412	.66285
Q35	.80111	.81720	.71380	.77836	.85093	.83416	.67415

APPENDIX F--Continued

	Q8	Q9	Q10	Q11	Q12	Q13	Q14
Q1							
Q2							
Q3							
Q4							
Q5							
Q6							
Q7							
Q8							
Q9	.66279						
Q10	.61571	.63307					
Q11	.46975	.43965	.50770				
Q12	.51368	.62464	.50425	.60175			
Q13	.52484	.58593	.72619	.46021	.49910		
Q14	.64431	.74022	.68129	.49672	.69841	.66988	
Q15	.75037	.51771	.58545	.43756	.42636	.58599	.54752
Q16	.67114	.58183	.59145	.39657	.53220	.65817	.58325
Q17	.56633	.54335	.78880	.40810	.35665	.78102	.60218
Q18	.51924	.53303	.64959	.37143	.31573	.63359	.59825
Q19	.51647	.64635	.53275	.34336	.52471	.58157	.72640
Q20	.84246	.73130	.66538	.45519	.56012	.58888	.71243
Q21	.58359	.59146	.46903	.27163	.53694	.53573	.61615
Q22	.43892	.46216	.43754	.24194	.42509	.45129	.43900
Q23	.70576	.60390	.48276	.35661	.47454	.43702	.56565
Q24	.63360	.60991	.47947	.34623	.60773	.46742	.65995
Q25	.48860	.52156	.48454	.26361	.39626	.44947	.48986
Q26	.49428	.51191	.43418	.30320	.38501	.40403	.41730
Q27	.42813	.40657	.33338	.27217	.34997	.35553	.36132
Q28	.44565	.48527	.49630	.33740	.35426	.61686	.46874
Q29	.26425	.32365	.25302	.16632	.33634	.34495	.26802
Q30	.42800	.49875	.38831	.35498	.55896	.45111	.56334
Q31	.49877	.54606	.45035	.31228	.47815	.51940	.56047
Q32	.72623	.72460	.75036	.49212	.58304	.66137	.74914
Q33	.67364	.67838	.66043	.44524	.57698	.61944	.69228
Q34	.72514	.71379	.76252	.46924	.59154	.67510	.77191
Q35	.75913	.76580	.78522	.48484	.62366	.70371	.81824

APPENDIX F--Continued

	Q15	Q16	Q17	Q18	Q19	Q20	Q21
Q1							
Q2							
Q3							
Q4							
Q5							
Q6							
Q7							
Q8							
Q9							
Q10							
Q11							
Q12							
Q13							
Q14							
Q15							
Q16	.76720						
Q17	.59019	.61794					
Q18	.44722	.44613	.68120				
Q19	.41092	.45488	.49603	.55389			
Q20	.63837	.58374	.56761	.61972	.65676		
Q21	.49088	.58745	.44221	.41890	.57687	.62688	
Q22	.33476	.45306	.38514	.28805	.51982	.51634	.54632
Q23	.51668	.54360	.38532	.39065	.52477	.73820	.59037
Q24	.47314	.52981	.37054	.36571	.55929	.62826	.57222
Q25	.39205	.43785	.39111	.33915	.55860	.54459	.56844
Q26	.38203	.41119	.40358	.30608	.48194	.53958	.53760
Q27	.36275	.38477	.37135	.29394	.42685	.48804	.49748
Q28	.43870	.50935	.56565	.42855	.51486	.52742	.50127
Q29	.29180	.39549	.28910	.15359	.41484	.35293	.34238
Q30	.38929	.48171	.39973	.35336	.52167	.51632	.52153
Q31	.45884	.54048	.48141	.43934	.62707	.57468	.55503
Q32	.55709	.58507	.68683	.66390	.63353	.80519	.56087
Q33	.49890	.58539	.62631	.60668	.57998	.73443	.56358
Q34	.58915	.60434	.71727	.70036	.62589	.81184	.55215
Q35	.62072	.62695	.73790	.70005	.64968	.84132	.58646

APPENDIX F--Continued

	Q22	Q23	Q24	Q25	Q26	Q27	Q28
Q1							
Q2							
Q3							
Q4							
Q5							
Q6							
Q7							
Q8							
Q9							
Q10							
Q11							
Q12							
Q13							
Q14							
Q15							
Q16							
Q17							
Q18							
Q19							
Q20							
Q21							
Q22							
Q23	.65001						
Q24	.53245	.69249					
Q25	.80656	.60085	.57274				
Q26	.77372	.59884	.49861	.81382			
Q27	.58666	.52062	.50075	.62008	.67049		
Q28	.56962	.47344	.44869	.63293	.62085	.64634	
Q29	.39725	.30261	.28812	.39544	.36750	.45833	.56047
Q30	.48907	.49829	.61652	.58120	.56681	.64308	.63669
Q31	.52234	.49904	.47939	.53901	.47953	.49197	.63802
Q32	.52536	.64169	.57951	.59555	.55912	.45856	.60535
Q33	.45213	.58725	.60231	.52861	.52223	.46787	.56314
Q34	.48807	.62332	.59536	.53596	.50627	.46454	.56684
Q35	.47563	.64133	.64296	.54738	.50958	.44686	.54823

APPENDIX F--Continued

	Q29	Q30	Q31	Q32	Q33	Q34	Q35
Q1							
Q2							
Q3							
Q4							
Q5							
Q6							
Q7							
Q8							
Q9							
Q10							
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Q14							
Q15							
Q16							
Q17							
Q18							
Q19							
Q20							
Q21							
Q22							
Q23							
Q24							
Q25							
Q26							
Q27							
Q28							
Q29							
Q30	.63746						
Q31	.61330	.63080					
Q32	.36282	.55965	.59161				
Q33	.33818	.57109	.53050	.88967			
Q34	.35277	.56598	.60130	.91196	.86267		
Q35	.34606	.58467	.55826	.91670	.86175	.93753	

