

THE RELATIONSHIP OF STUDENT, FACULTY, AND
CLASSROOM VARIABLES TO THE RATINGS
UNIVERSITY SENIORS GIVE FACULTY

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TABLE OF CONTENTS

| Chapter | Page |
|--|------|
| I. INTRODUCTION | 1 |
| Purpose of the Present Study | 3 |
| Study Hypotheses | 4 |
| Assumptions | 6 |
| Limitations | 6 |
| Instrument | 7 |
| Sample and Method of Collecting and Analyzing the Data | 8 |
| Reporting the Study | 9 |
| II. A SURVEY OF THE LITERATURE | 11 |
| Summary | 26 |
| III. DESIGN OF THE STUDY | 28 |
| The Study Instrument | 28 |
| Collection of Data | 29 |
| Analysis of the Data | 30 |
| Summary | 33 |
| IV. THE FINDINGS OF THE STUDY | 34 |
| Personal Characteristics of the Study Sample | 34 |
| Seniors Rate Their Teachers--An Analysis by Teacher Variables | 40 |
| Seniors Rate Their Teachers--An Analysis of Behavioral Characteristics | 46 |
| Classroom Variables | 62 |
| Characteristics of Best, Worst, and Ideal Teachers | 68 |
| Student Characteristics as Related to Choice of Best, Worst, and Ideal Teachers | 72 |
| Data for Life Science Students | 76 |
| Summary | 77 |
| V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS | 82 |
| The Literature in the Field | 82 |
| Purpose and Design of the Study | 83 |
| Results of the Study | 85 |

| Chapter | Page |
|---|------|
| Conclusions | 90 |
| Suggestions for Further Study | 92 |
| Recommendations | 92 |
| Concluding Statement | 94 |
| SELECTED BIBLIOGRAPHY | 95 |
| APPENDIX A - STUDY INSTRUMENT | 102 |
| APPENDIX B - MAILED MATERIAL FROM ACADEMIC VICE PRESIDENT | 107 |
| APPENDIX C - MAILED MATERIAL | 109 |
| APPENDIX D - MAILED MATERIAL | 111 |
| APPENDIX E - STATISTICAL TABLES | 113 |
| APPENDIX F - CHI-SQUARE DATA | 122 |
| APPENDIX G - CODE KEY FOR TEACHER CHARACTERISTICS | 124 |

LIST OF TABLES

| Table | Page |
|---|------|
| I. Distribution of Education Students by Returns and Non>Returns to the Questionnaire | 31 |
| II. Distribution of A. & S. Students by Returns and Non>Returns to the Questionnaires | 32 |
| III. Analysis of Variance for Major Area of Student and Teacher Ratings | 36 |
| IV. Analysis of Variance for Sex of Student and Teacher Ratings | 38 |
| V. Analysis of Variance of Student GPA and Teacher Ratings | 39 |
| VI. Analysis of Variance for Age of Student and Teacher Ratings | 40 |
| VII. Analysis of Variance of Age of Faculty and Student Ratings | 43 |
| VIII. Analysis of Variance of Sex of Faculty and Student Ratings | 45 |
| IX. Analysis of Variance of Educational Background of Faculty and Student Ratings | 46 |
| X. Incidence of and Average Ratings Given to Various Teaching Methods | 49 |
| XI. Analysis of Variance for Teaching Method of Faculty and Student Ratings | 50 |
| XII. Analysis of Variance on Attendance Taking by Faculty and Student Ratings | 52 |
| XIII. Analysis of Variance of Assignment of Seats by Faculty and Student Ratings | 53 |
| XIV. Incidence of and Average Ratings Given to Various Testing Frequencies | 54 |

| Table | Page |
|--|------|
| XV. Analysis of Variance of Testing Frequency of Faculty and Student Ratings | 54 |
| XVI. Analysis of Variance on Providing Course Objectives by Faculty and Student Ratings | 56 |
| XVII. Analysis of Variance on Grading Criteria of Faculty and Student Ratings | 57 |
| XVIII. Analysis of Variance of Useage of Audiovisual Materials by Faculty and Student Ratings | 58 |
| XIX. Analysis of Variance on Availability of Faculty and Student Ratings | 60 |
| XX. Analysis of Variance for Faculty Concern for Students and Student Ratings | 61 |
| XXI. Analysis of Variance for Major Concern of Faculty and Student Ratings | 63 |
| XXII. Analysis of Variance for Courses in Student Major or Elsewhere as Related to the Teacher Ratings | 64 |
| XXIII. Analysis of Variance for Areas of Various Courses and Student Ratings | 66 |
| XXIV. Incidence of and Average Ratings Given to Various Class Sizes | 67 |
| XXV. Analysis of Variance for Class Size as Related to Teacher Ratings | 68 |
| XXVI. Age of Best and Worst Teachers | 70 |
| XXVII. Duncan's Multiple-Range Test: Students' Major Area and Ratings of Faculty | 114 |
| XXVIII. Duncan's Multiple-Range Test: Students' Age and Ratings of Faculty | 115 |
| XXIX. Duncan's Multiple-Range Test: Age of Teacher and Student Ratings | 116 |
| XXX. Duncan's Multiple-Range Test: Teaching Method and Student Ratings | 117 |
| XXXI. Duncan's Multiple-Range Test: Testing Frequency and Student Ratings | 118 |

| Table | Page |
|---|------|
| XXXII. Duncan's Multiple-Range Test: Major Orientation of Faculty and Student Ratings | 119 |
| XXXIII. Duncan's Multiple-Range Test: Class Size and Student Ratings | 120 |
| XXXIV. Duncan's Multiple-Range Test: Areas of Courses and Student Ratings | 121 |
| XXXV. The Relationship Between Student Characteristics and Student Choice of Best, Worst and Ideal Teacher | 123 |

CHAPTER I

INTRODUCTION

Each decade in American higher education has its own set of characteristics and priorities. The decade of the sixties evidenced great expansion in enrollment and physical facilities, particularly at the junior college level and in graduate programs. Brought about by the vast increase in the number of college-age students and by an increase in the percentage of college-age students who pursue college, this college student population explosion necessitated many more college teachers than our graduate schools were producing. As a consequence of this increase in students one major priority of the sixties was the development of graduate programs and the funded research activity that is so necessary to quality graduate education.

The present decade has had and will continue to have a different set of characteristics and priorities. One characteristic will be a decrease in the number of college-age students. Although the birth rate and absolute number of births was very high immediately following World-War II, by the mid and late 1950's both of these had declined considerably. In the last few years federal sponsorship of university research has decreased, but the number of available college teachers with terminal degrees has increased. Recent reports and books on American higher education -- Dressel and Faricy (1972), Newman (1971), and the Carnegie Commission on Higher Education (1972) -- see in these

characteristics a priority change in the direction of an increased concern for effective college teaching. Dunham's urging for a new teaching degree (1969), the plethora of books on college teaching improvement -- Milton and Shoben (1968) Brown and Thornton (1971), Lee (1967), Minter (1967), and McKeachie (1969) -- and the growth in programs (higher education), experiences (internships), and degrees (Doctor of Arts) concerned with a study of the teaching-learning process at the college level also point to such a priority change.

Another characteristic of American higher education -- and an unfortunate one in the opinion of this writer -- is the absence of sufficient evaluation of many of the new programs and experiences attempted during this decade. College teaching itself has been rather poorly evaluated (Brown and Thornton, 1971). Although the fault may lie in the absence of an agreed-upon definition of effective teaching, some progress could be had, if we merely had more consumer opinion of what is effective teaching. The present study will attempt to supply such information in a small localized situation, the consumer opinions of college seniors at Oklahoma State University regarding effective college teaching.

One often-stated goal for Oklahoma State University for the 1970's is improvement in the quality of instruction. To determine any growth in instructional quality which may occur at the end of the 1970's, it is necessary to obtain a present reading against which we might measure any future improvement.

It is also safe to say that regardless of any stated objectives an institution may have for the next decade, some periodic review of one of its major functions should be of high priority. Any institution

that prizes research and spends a sizeable portion of its budget on research should be willing occasionally to turn its research methodology on itself and appraise its three major functions, one of which is effective teaching.

A measure of teaching quality which is growing in acceptance is the use of student opinionnaires. Perhaps this can be attributed to the renewed interest in accountability, and students are, after all, the consumers of teachers' endeavors. Shoben (1968) argues this point and points out that undergraduate views must be accorded genuine respect if conditions for the business of education are to proceed effectively. One such attempt at genuine communication of views with undergraduates is an acceptance of their opinions on teacher effectiveness and classroom conditions. Changing views of the present college population provides another reason for obtaining student ratings, or as Shoben (1968) puts it: "Because our society is in the process of radical transformation at an unprecedented rate, the past is no longer a sufficient guide to the future" (p. 210).

The Research Foundation of Oklahoma State University supports the use of sound research techniques in any evaluation; and the Educational Innovation Committee has, since its inception, encouraged teaching improvement through evaluation. These two agencies were, therefore, not only receptive to the philosophy behind the present study but promoted its actual conception and implementation.

Purpose of the Present Study

Studies which canvass student opinion on the frequency and quality of various instructional practices are valuable because they add

consumer input to the evaluation which every college and university should attempt periodically of its instructional function. These opinions contribute to the understanding of an even greater problem, the definition of effective teaching.

The present study, which benefited from suggestions from faculty committees concerned with instructional evaluation and from college officials eager to receive feedback on the instructional and counseling functions of their college, has these three purposes:

1. To see, through the eyes of students, the incidence and frequency of instructional strategies, of course examination, of the use of course objectives and study guides and, of contact between faculty and students out of class.
2. To obtain an overview of the quality of instruction at Oklahoma State University. Such a measure would be the first step in an evaluation of the efficacy of instructional practices employed in the future.
3. To test certain hypotheses that relate differential ratings of instructional quality to faculty, student and classroom variables.

Study Hypotheses

Five general groups of hypotheses were investigated. Each relationship within the groups is dealt with extensively in the fourth chapter along with the descriptive data.

The first group explored the relationship between selected student characteristics and the ratings they gave of their teachers, to see if student characteristics affect their preceptions of faculty effectiveness. Stated in null form this first group would read:

There is no relationship between ratings of faculty by college seniors and these seniors' major, sex, grade-point average, age, and marital status.

The second group explored the relationship between selected personal characteristics of faculty and the type of ratings given them by their students, to see whether either students prefer certain personal characteristics of faculty or whether selected faculty characteristics are related to teaching effectiveness, as viewed by students. In null form this group states that:

There is no relationship between ratings of faculty by college seniors and sex, educational background, and age of faculty.

The third group explored the relationship between selected behavioral characteristics of faculty and the type of ratings given them by their students, to see whether either students prefer certain faculty behavior or whether such behavior is related to teaching effectiveness, as viewed by students. Worded in testable null form it reads:

There is no relationship between the ratings of faculty by college seniors and the following behavioral characteristics of faculty: teaching method, testing procedure, and the use of study guides, assigned seats, attendance records, specified criteria for grades, or office hours.

A fourth group of hypotheses consisted of three specific relationships that could not be easily placed in any other group. The relationships deal with class size and the ratings given to teachers of these classes, whether the courses were in the students' major or other department and the students' rating of those teachers, and whether the courses were in the general areas of arts, physical science, social science, or life science and the students' ratings of these teachers.

A final group explored the relationship between certain student

characteristics and their choice of the qualities of their best, worst, and ideal teacher. Stated in null form this final cluster would read:

There is no relationship between student choice of best, worst, and ideal teacher and these students' sex, age, grade-point average, and major area of study.

Assumptions

This study is based on these two general premises:

- a. That senior students at Oklahoma State University are capable of recalling their four years of college and of providing valid, accurate responses pertaining to their teachers' effectiveness and classroom variables.
- b. That the tabulation of responses to the questions put to seniors were valid measures of student, faculty and classroom variables associated with teaching.

Limitations

In a study as this, there are bound to be limitations relating to the sample, the questionnaire instrument, and the statistical analysis. In a descriptive survey, there is always a possibility of bias in findings because of the absence of information from nonrespondents.

An instrument which relies upon checks and short responses for information, although conducive to high responses, imposes limits upon the respondent and hinders his freedom of responses. Whether asking respondents to choose any suggested answer will cause bias remains a matter of conjecture. To help minimize this eventuality, free responses were encouraged in part of the questionnaire. The fact that many persons took advantage of this possibility in the pilot study and

the final sample reduces somewhat the probability of bias owing to condensation.

Also of concern as a limiting factor in this study is the accuracy of response of students of their experiences over a four-year period of time. Such factors as maturity and experience may affect their response.

The data obtained and the statistical treatment of it produces some limiting factors. The population under consideration may be representative of only seniors in the two colleges considered, but the high rate of response encourages acceptance of the sample as representative of at least the two colleges studied -- Education and Arts and Science.

The use of seniors may bias the results and make them representative of the opinions of only successful students.

Instrument

Since construction of an appropriate data-gathering instrument was of paramount importance, considerable time and effort was devoted to formulating the questionnaire used in this study. The instrument was a four-page questionnaire, whose development was an outgrowth of examination of other questionnaires as well as original formulation.

Data pertaining to the respondents (such as major, teaching field, sex, age, grade-point average, and marital status) were solicited. Information pertaining to certain teacher characteristics, styles of teaching, and classroom variables were obtained through proper questions. Included in Appendix A is a copy of the questionnaire used in the study. A pilot study was run using 30 junior students. Upon

consideration of their responses and consultation with committee members, some changes were made to obtain better accuracy and clarity.

Sample and Method of Collecting and Analyzing the Data

All 573 seniors from the College of Education and all 1,022 seniors from the College of Arts and Sciences for the second semester of the 1971-72 academic year were designated participants in this study. The College of Arts and Sciences was chosen because it is the largest and most heterogeneous college within the University and the College of Education was chosen as a representative of a professional area.

To insure a high response, the instrument (described above) was accompanied by a letter from the academic vice president. The students were asked to return the completed questionnaire by campus mail. After a three week period, those students not responding were sent the same questionnaire with another accompanying letter. The student daily newspaper solicited responses.

Upon receipt of approximately 70 percent of responses (671) the data were statistically analyzed and reported through descriptive statistics, such as means and percentages. Written-in responses dealing with teacher characteristics were dealt with using not only descriptive statistics but also testing of relationships after a system was devised for categorizing their responses objectively. The facilities of the Oklahoma State University Statistical Laboratory were used in the computational analysis of data. The null hypotheses were tested using the data pertaining to each of the selected statements to identify significant differences. Although the Chi-Square technique

was used for a few selected hypotheses, for the vast majority of the relationships studied the analysis of variance technique was used to attempt to rule out chance, and the level of significance to be required for the rejection of the null hypothesis will be set at the five percent level.

Reporting the Study

As a descriptive-survey, this study was designed to obtain from college seniors at Oklahoma State University their opinions of the quality of instruction they received and the relationship of these ratings to faculty, student and classroom variables.

Chapter II reviews the literature of work done in the area of teacher effectiveness, characteristics of superior teachers, and the use of student ratings as a device for obtaining their opinions on instructional quality. The time span involved in this literature review is 1920 through 1972.

Chapter III discusses in more detail the design of the study, describing the instrument developed for gathering data and the procedures used in analyzing data and testing hypotheses.

Chapter IV sketches pertinent facts about the respondents, certain personal characteristics and variables that could influence their responses on the quality of instruction. It also presents pertinent personal and behavioral characteristics of effective teaching faculty at Oklahoma State University, by reporting the evaluations of instructional quality given by the Oklahoma State University seniors designated for this study and by relating these to student, faculty and classroom variables. It also presents their opinions of superior, inferior,

and ideal instructors. It also presents findings from testing the five major groups of hypotheses.

Chapter V summarizes major findings and conclusions. It also suggests implications, possibilities for further research, and recommendations.

CHAPTER II

A SURVEY OF THE LITERATURE

This study concerns the opinions and perceptions of college seniors regarding the quality of instruction they received at Oklahoma State University and was designed to obtain information from these same students concerning the characteristics of their best, worst and ideal teachers. The review of literature on areas pertinent to this inquiry will concern: (1) research on effective teaching in general, (2) characteristics of effective teachers, and (3) literature dealing with the need for evaluation of effective teaching. Since the quality and quantity of research in this area has steadily improved over the years and since chronological handling highlights certain conclusions, this literature review will be presented in historical sequence.

In one of the earliest studies that canvassed student opinions of effective teaching, Kelly (1929) investigated ratings in 187 church-related colleges. Students were requested to list attributes of their best teachers. Not unlike many early research endeavors, this study discovered that students were primarily interested in the human or personality attributes of their teachers and only secondarily in their intellectual distinction.

R. J. Clinton (1930) in an article entitled "Qualities College Students Desire in College Instructors" reported on the preferences of 177 college juniors. Ranked in the order preferred by these students

the five most desired characteristics were: (1) interest in students, (2) fairness, (3) pleasing personality, (4) sense of humor, and (5) mastery of subject matter. As in the previous study it can be observed that students prefer four human or personality characteristics over an academic quality--the mastery of subject matter.

A study conducted in the thirties by Hart (1934) reveal similar findings. Although it is not on college students preferences, the size of the sample (3,725 students), the proximity to the age of college freshmen (high school seniors), and the quality of the study recommend its inclusion in this review. These students were queried about best-liked and least-liked teachers. Forty-three different reasons were cited by students as their first preference in teachers, and 30 reasons were given for the least-liked teachers. Over 51 percent of the students said that they liked best those teachers who were helpful in school work, who explained lessons, and who used examples in their teaching. Over 40 per cent responded favorably to teachers with a sense of humor. Teachers who were negatively assessed were judged unable to explain clearly, partial to brighter students, and possessing superior, overbearing, or aloof attitudes. Mastery of subject matter, considered vital by faculty and other specialists, ranked sixteenth on both lists. Somehow, students seem willing to take more or less for granted that a teacher knows his material. What seems to make a difference is the teacher's personal style of communicating what he knows.

A study by Bousfield (1940) similar in design to Clinton's and Hart's had some similar findings. However, the emergence of subject matter qualities as on a par or superior to personality characteristics

in the opinion of students is evident in this study. Based on a sample of students from Tufts and the University of Connecticut, this study found these five characteristics to be most prized by students: (1) fairness, (2) mastery of subject, (3) interesting presentation of material, (4) organization of materials, (5) clearness of exposition. This study and the Clinton study, however, have limited value, since both were concerned with small numbers of students and a limited number of institutions.

A study on a much larger scale and involving graduate students and some alumni was undertaken by Bogardus in 1946. With a sample drawn from 39 colleges and universities, the study confirmed the importance of the two major clusters of teacher qualities that appeared in earlier studies: (1) intellectual (knowledge of subject matter, awareness of current affairs in the field, orderly presentation, and stimulating discussion) and (2) personality (fairness, democratic attitudes, enthusiasm, and sense of humor).

In 1950, Witty published the results he obtained from an analysis of 14,000 letters sent in as entries for an essay contest on the topic "The Teacher Who Has Helped Me the Most". Twelve of the most often mentioned characteristics were: (1) cooperative, democratic attitude, (2) kindness and considerateness, (3) patience, (4) wide interest, (5) pleasing personal appearance, (6) fairness and impartiality, (7) sense of humor, (8) good disposition and consistent behavior, (9) interest in pupils' problems, (10) flexibility, (11) use of recognition and praise, and (12) unusual proficiency in subject. The study also cited a list of twelve negative characteristics.

As seen by earlier studies, the personality of teachers has often

been studied to see its relationship to teaching effectiveness. B. M. Symonds (1950) observed 24 teachers preparatory to a study of the relation between the personality of the teacher, the mode of teaching, and the pupil response in the classroom. As revealed by the study, variation and complexity of personalities were great, and it appeared that there was no one personality type that consistently related to effective teaching. Almost all types of personalities were found among successful teachers; and the accepted belief that only normal, well-adjusted persons should be teachers seemed not to hold. Some of the most successful teachers observed were definitely neurotic and their neuroticism seemed to contribute to their success as teachers. There were some general characteristics of the successful teacher that seemed to cut across all the variations in personality. All were more or less secure and confident and were interested in and liked their students. Sincerity seemed an important factor.

In an article by Eckert (1950) weaknesses in the use of student ratings for course and teacher evaluation were discussed. In summary the weaknesses are student immaturity, influence of grades on their ratings, and instability of student opinions. Eckert also felt faculty may use them to obtain popularity. It is interesting to note, however, that in the same article Eckert states that students are in a better position to criticize and rate professors than are peers and administrators, since students are the consumers of teaching endeavors. In the interest of fairness Eckert also cites studies that refute each of her stated objections.

In 1951 Lamke sought to determine if the personalities of good and poor teachers were characteristically different. Results were not

very conclusive, but it appears that good teachers are more likely than poor teachers to be gregarious, adventurous, and frivolous; to have abundant emotional responses; strong artistic and sentimental interests; and to be polished, fastidious, cool, and interested in the opposite sex. Poor teachers are more likely than good teachers to be shy, cautious, and conscientious. They also lack artistry and emotional response or interests; and they have comparatively light interest in the opposite sex, are clumsy, easily pleased, and more attentive to people. There is an implication that good teachers are good for the obverse of reasons why poor teachers are poor and that initial success not only in teaching but in life is a reinforcer to effective teaching.

Using the Teaching Judgement Test, Jarecke (1952) designed a study to evaluate some of the factors which contribute to teachers' success. It centered on performance in the classroom, associations with other teachers, as well as other aspects. One conclusion was the possible relationship of teacher experience to teacher success. There seems, also, to be a relationship between scholastic ability and teaching success as well as a relationship between teaching success and the "stability" of teachers.

Looking into the validity of student ratings of teachers, Gage and Suci (1952) found some agreement between student ratings of teachers and teachers' social perception scores. The latter consisted of a harmonious comparison of pupil attitudes and teachers' perceptions of these attitudes. Therefore, some ability to understand how students feel and what students value is related to judged effectiveness.

Knapp and Goodrich (1952) had an interesting objective in their study of the effect faculty have on students. They wanted the students'

opinions of those faculty characteristics most likely to motivate the students to pursue the professional field of faculty members. The results show that the most motivating faculty characteristics were: (1) masterfulness, (2) warmth, and (3) intellectual distinction.

An interesting study was done by Hale in 1955. All 1,317 students in his sample had attended the same high school but were undergraduates at either Ohio State University or Capital City University in Columbia, Ohio. They were asked to provide the following information: the names of their worst and best teachers and where they encountered them, the subjects these teachers taught, the characteristics of these best and worst teachers, and the effects, the students felt these teachers had on them. Hale then used the Minnesota Teacher Aptitude Inventory and had a personal interview with all the teachers listed by the students. He found that: (1) there was no significant difference between the groups of the best and worst teachers and whether or not they remembered any of the students who had named them, (2) particular teachers do have striking effects on students' attitudes and behavior in the opinion of students, (3) perceived effects of teachers were shown to center around the motivation teachers provided during class contact and in later years, (4) attitudes of these teachers showed promising areas of differentiation between the best and worst teachers and the M.T.A.I. is a good measure of these attitudes.

Students and faculty were contributors of rating on college teaching effectiveness in a study by Guthrie in 1954. Guthrie found that: (1) scholarly attainment was of more importance to faculty than to students, (2) students considered personality and teaching qualities more significant than other qualities, and (3) graduate students were

most influenced by intellectual and scholarly attainment. Qualities of the poor teachers as judged by the sample were: (1) lack of warmth, (2) unfriendliness, and (3) tendency toward sarcasm.

In a study by Maslow and Zimmerman (1956) a high correlation was found between students and faculty ratings of instructors on effectiveness. The three categories concerned evaluation of an instructor: (1) as a teacher, (2) on his personality, and (3) on his creativity. Although there was considerable correlation between student and faculty ratings, faculty tended to cite creativeness as most important and students tended to cite a good personality as primary.

A 1958 study by Ryans is one of the most cited in literature reviews of effective teaching characteristics. Although his own research was done primarily with elementary and secondary teachers, he incorporated his results with those of earlier studies and added an interesting dimension to the design of research studies on teacher characteristics. Instead of obtaining teacher characteristics from student opinions, tests were administered to teachers and the results related to perceived effectiveness of these same teachers. The result of Ryans' research and his literature review reveal the following as important effective teaching criteria: (1) superior intellectual abilities, (2) above average school achievement, (3) good emotional adjustment, (4) attitudes favorable to students, (5) enjoyment of pupil relationship, (6) generosity in the appraisal of the behavior and motives of other persons, and (7) strong interest in reading and literary matters. Age of the teacher in relation to the above characteristics was considered with the older teachers at a disadvantage to the younger teachers especially with regard to warmth, friendliness, and ability

to stimulate.

Tyler gave three reasons for evaluating teaching in his article entitled "The Evaluation of Teaching" (1959). The first reason was self improvement; the second was to use the evaluation as a basis for rewarding effective teaching. The most important reason for evaluating, according to Tyler, was the third one cited, the development of the science of teaching. To become good teachers and to help others become good teachers necessitates more than the results of our own trial and errors and successes. It requires guidance by fundamental concepts and principles of teaching which stand the test of practice. In addition to listing reasons for evaluation Tyler praised the use of information obtained from student questionnaires. He concluded that the summation of student judgements obtained from a questionnaire is positively correlated with other evidences of the effectiveness of teaching and is one of the devices which many teachers will find useful in their own efforts to improve their teaching.

Dealing with teacher personality as a variable in effective teaching Heil, Powell, and Feifer (1960) compared various teacher-pupil personality combinations and found that the well-integrated (healthy, well-rounded, flexible) teachers were most effective with all types of students. Effectiveness was assessed on the basis of student achievement.

Howsam (1960) was interested, as was Tyler, in methods of evaluating effective teaching. He concluded from an extensive literature review that self-ratings have proved to be of little use because there is a consistent bias toward over-rating. On the other hand Howsam says that peer ratings or ratings by fellow teachers or colleagues seem to

be based on marginal evidence. Supervisor or administrator ratings seem to be highly biased and subjective. Student ratings, however, seem to be more consistently and favorably treated in the literature than other rating methods.

Gustad (1961) cited a great need for research in the areas of classroom teaching and evaluation of faculty members in a publication by the American Council on Education. He concurs with Tyler (1959) that student ratings by way of opinionnaires have some objectivity and tend to correlate fairly well with other measures of teaching effectiveness. But with one or two exceptions most existing studies at that time were described simply as hearsay and much more valid and valuable research has to be done.

Over a five-year period Drayer (1961) collected data from 148 students of a four-year liberal arts college. He asked the student to list the teacher he liked the best and the least and to list characteristics of these two teachers. The qualities of the best teachers were: (1) effective presentation of material, (2) sense of humor, (3) pleasant personality, (4) friendliness, and (5) the attitude that allows a relaxed atmosphere in their classes. The characteristics of the least liked professors were: (1) ineffective presentation, (2) lack of objectivity in evaluating work done, and (3) attitudes of superiority and sarcasm.

Cattell's scales were adapted by Corcoran (1961) to examine the characteristics of good and poor college teachers by their students. It was found that good teachers ranked high in: (1) surgency (enthusiasm), (2) comention (cultural interests), and (3) cyclothymia (concern for people).

A study similar to Corcoran's was reported in 1964 by McKeachie, Isaacson, and Milholland. In this study the Cattell scales were used to determine personality characteristics of teachers and these same teachers were rated on their effectiveness. However, in this study, both faculty and students did the rating. The results substantiate those obtained in the Corcoran study except for the third characteristic. Emotional stability was listed in that position instead of cyclothemia.

A 1962 study by Katz was similar to an earlier study by Gage (1953). Both student perception and evaluation of teachers were found to be a function of students' internal frames of reference rather than a result of concrete characteristics possessed by teachers. Therefore, knowledge of the student's personality would lead to more fruitful understanding of ratings given teachers than would placing concentrated effort on teacher effectiveness alone. Knapp (1962) holds somewhat the same view as Gage and Katz, pointing out that students tend to have sharply defined, consistent images of professors. Knapp believes that students tend to emphasize and prefer a personal-social quality in teachers rather than an intellectual quality.

One aspect of a study by Morton (1965) is of particular concern to this study. Freshman and senior students were asked to evaluate their teachers by means of a questionnaire. The sex, age, and grade-point average of students were related to the qualities they preferred in teachers. The results show that male students preferred a teacher who moves surely and vigorously; and they reacted more negatively than did female students to prejudice, unfairness, weakness and error. Of more concern to females was the total personality of

the instructor rather than individual characteristics; and women preferred neat, orderly presentations and were more interested in life's goals than purely intellectual or vocational goals. The more mature and able students preferred a scholarly teacher with an ability to teach, motivate, guide, and befriend his students.

In a review of the literature up to 1965, Gage selected five global characteristics which seemed to be components of effective teaching. The five he selected were: (1) warmth, (2) cognitive organization, (3) orderliness, (4) indirectness, and (5) problem-solving ability.

In Howard Williams' unpublished doctoral dissertation (1965), over 700 juniors and seniors were measured for perception of six personality traits possessed by their best and poorest teachers. The students were to identify aspects of instructional planning, classroom activities, evaluation procedures, and extra-class activities of these two extreme groups of teachers. Three of the more important findings were: (1) a significant number of good instructors were in the 30 to 39 year age group; whereas more poor teachers were in the 50 to 59 year group, (2) good teachers were more often found in political science, history, economics, and philosophy; whereas poorer teachers were found in foreign language, psychology, sociology, and education, and (3) better teachers taught senior classes, and poorer instructors taught freshman classes. No significant difference was found to exist between male and female teachers. The six teacher traits, ranked according to their ability to identify good teachers were: comention (cultural interests), surgency, cyclothymia (concern for people), super-ego strength, coasthenia (a complex variable that includes obstinancy and

indecisiveness) and guilt proneness. The manner in which teachers evaluated students' work appeared to be very important to the students as well as teacher tolerance of student opinion. Although these and other classroom activities differed greatly in poor and good teachers, the amount and type of a teacher's extra-classroom activities did not appear to be a very reliable predictor of students' choice of poor and good teachers.

The basic problem investigated in a study by Rezler (1965) was the influence of psychological needs on students' perception of their instructors. Several results were interesting but one in particular is pertinent to this study. Important differences were found to exist between male and female psychological needs resulting in different perceptions of instructors. This information, which substantiates the finding of the Morton study, was obtained using the Edwards Personal Preference Schedule and the Purdue Rating Scale for Instruction.

Student sex, however, did not prove to be an important variable related to their choice of the type of person with whom they would work in a classroom setting in a study on college students' preferences of their teachers by Yamamoto and Dizney (1966). Also, it was found that students preferred a teacher-mentor to study with rather than a socialite, an administrator, or a researcher.

Three hundred and ninety-four senior students between the age of 20-23 from State University, New York, were asked to list ten qualities of good teachers in a study reported by Musella and Rusch (1966). One aspect of the study concerned teachers in the physical and life sciences. Qualities listed for these teachers were: (1) ability to explain clearly, (2) systematic organization of subject matter, and

(3) expert knowledge of field.

Astin and Lee in a 1966 study defended the use of student ratings in their evaluation of teaching effectiveness. The authors made it clear that the judgment of a chairman or dean, supported or confirmed by the opinions of departmental colleagues, is the most commonly-used means of evaluating an individual faculty member's teaching competence. Astin and Lee perceptively conclude that since the ultimate measure of the teacher's effectiveness is his impact on the student, it is unfortunate that the sources of information that are most likely to yield information are those least likely to be used.

In 1967 Spaight divided his sample of students into high and low achievers by means of their grade-point averages. The majority of below-average achievers viewed the college teacher as impersonal, dictatorial, sarcastic, and lacking in enthusiasm. The entire sample felt that college professors should be willing to provide students with individual conferences, should have respect for the student, and should be enthusiastic.

Under the supervision of Professor Gillispie (1968), Princeton seniors were asked to rate their entire undergraduate faculty. Results demonstrated no clear picture with variations in ratings not only for students as a whole but as grouped into different departments. This apparently suggested to Gillispie that either departments get different types of students or departments have different impacts on their students which lead to broad variations in overall ratings.

Richard Perry of the University of Toledo conducted a study (1969) in which he sought not only to identify effective teaching behaviors but their relative importance. He sampled faculty, students stratified

by college and class rank, and alumni. Perry devised a sixty-item list of criteria for judging teacher effectiveness. Each item was rated on a five point scale. The ten items most highly rated by students were these that describe teachers: (1) being well prepared for class, (2) establishing sincere interest in subject being taught, (3) being fair and reasonable to students in evaluation procedures, (4) demonstrating comprehensive knowledge of the subject, (5) using teaching methods which enable the student to achieve objectives of the course, (6) communicating effectively at levels appropriate to the preparedness of students, (7) constructing tests which search for understanding on the part of students, (8) organizing the course in logical fashion, (9) encouraging independent, intelligent thought by students, and (10) motivating students to do their best. Faculty and alumni varied slightly from this list in their ranking of the 10 most important items. Both placed the encouragement of independent, creative thinking in a higher rank than did students.

An often-stated argument against student evaluation is the charge that these evaluations are merely a popularity contest and sources of unhealthy competition. Kenneth Eble disagrees in his monograph "The Recognition and Evaluation of Teaching" (1970). He contends that various studies of student ratings suggest that the vulgarly popular teacher is not what students are after in asking for better teaching. The better ratings in use are not of abstract "popularity" but of specific characteristics students and faculty have used to define effective teaching.

"Under what circumstances do different kinds of faculty members have different kinds of effects on different kinds of students?" In

an effort to assist colleges and universities in answering this question the Faculty Characteristics Questionnaire was devised by R. C. Wilson, J. G. Gaff and J. L. Bavry (1970). The questionnaire assesses the diversity of attitudes, values, and practices of faculty members. The project, originating at the Center for Research and Development in Higher Education at the University of California at Berkeley consists of a series of studies aimed at learning more about the ways in which faculty members affect and do not affect the course of student development through the college years. The questionnaire deals with the following topics: (1) teacher perceptions of the student's role in curriculum planning, in setting up course objectives, etc., (2) descriptions of how the teacher teaches, (3) teacher perception of the social life of the student, (4) faculty-student relations, (5) roles of teaching and learning, and (6) personal information about faculty members, their philosophy, beliefs, etc. As a result of pilot testing the questionnaire with 1559 faculty members at six diverse colleges and universities, the authors concluded that only about one-third of the faculty felt that students should have a formal voice in determining academic policy. However, three-fourths of the respondents felt that their school should have a formal procedure to evaluate teaching effectiveness and, of those, over 80 per cent felt students should be involved in the evaluation process. Other findings were derived from this study, but they pertain less than the two cited above to the scope of this study.

In a study for the Educational Testing Service by John A. Centra (1972) which was reported to the American Association for Higher Education at Chicago in March, 1972, and summarized by the Chronicle of

Higher Education, November, 1972, it was found that some teachers do better after students rate them. Another interesting thing pointed out by the author was that despite the general expectation that teachers improve with experience, more-experienced teachers received the same student ratings as did those in their first two years of teaching. Basically the results of the study supported the value of student evaluations as a method of improving college teaching. The most frequent criticisms of the teachers were that they were not concerned with student learning, not open enough to other viewpoints, and not clear enough in describing how their students would be rated.

Prior to the study by Centra, participants in the Conference on Evaluation sponsored by the Project to Improve College Teaching (1970) released similar information that student ratings improve teaching. In reviewing the progress of one particular teacher students said that he went from a boring, disinterested lecturer to a professor who was exceptionally competent, tough but fair, and genuinely interested in the students, as shown by providing time to discuss student problems.

Summary

Students emphasized personality traits of effective teachers in the older studies reported in this literature survey. However, more recent studies stress the academic standards of the teacher and the subject matter being taught. This is not to imply that personality variables do not influence students perception of effective teaching but they are no longer of primary concern. Most well designed studies of the 60's and 70's include both personality variables of the teacher and academic variables. Studies also point out that older students

and more advanced students, such as seniors, stress the academic over the personal. Regardless of when the study was completed, most students prefer teachers possessing the characteristics of warmth, friendliness, preparedness, fairness, and a sense of humor.

The preceding review of the literature reflects an insistent concern that too little has been done in the area of effective teaching and the evaluation of it. Articles allegedly describing good teaching are numerous, and many are sound; but most either largely represent the subjective judgment of individuals and committees or are based on studies using small samples in restricted circumstances. Reliable characterization of effective teaching is needed (Hildebrand, Wilson and Dienst, 1971).

With the present emphasis on accountability in all aspects of university structure the business of properly evaluating effective college teaching must be taken seriously (Brown and Thornton, 1971). Studies must be performed to help us arrive at an agreed-upon definition of effective teaching. Of considerable interest to the question of what is effective teaching, is student (consumer) opinion of effective teachers. Because of this lack of basic information it is the purpose of this study to provide input from a group of seniors at Oklahoma State University regarding effective college teaching.

CHAPTER III

DESIGN OF THE STUDY

This study was designed to obtain data from a population of senior students in the College of Arts and Sciences and in the College of Education at Oklahoma State University regarding the frequency and quality of various instructional practices they received and to relate the data on the quality of various instructional practices to faculty, student, and classroom variables. Also obtained in this study was information pertaining to characteristics of good, poor, and ideal teachers as perceived by the students.

This chapter presents the research design utilized in this study, the study instrument used to gather the data, the processes employed in collecting the data, and the various analyses made of the data.

The Study Instrument

The study instrument formulated to gather the data for this study was a questionnaire developed from a review of the literature from 1940 to 1971 and through consultation with faculty members and students at Oklahoma State University. Ideas for particular items of the questionnaire were obtained from the Alciatore (1965) study instrument and the Perry (1969) instrument. The instrument was revised and refined several times after consultation with faculty committees and after a pilot study was run using 30 junior students

Description: The questionnaire was a printed four-page, 8½ by 11 inch leaflet. Each questionnaire was given a four-digit code number for computer sorting purposes and to keep data confidential. The use of a project number on each leaflet provided information for future follow up for those who did not respond to the first mailing. Items included both check-mark responses as well as space for written remarks. The instrument was divided and the items were arranged in three sections:

- (1) A section dealing with personal information about the student such as major, sex, grade-point average, times he changed his major, age, marital status and teaching field.
- (2) A section concerning the personality characteristics and behavioral characteristics of faculty and certain classroom variables and the effect of these on senior student ratings.
- (3) The third section pertains to personal information and characteristics of good, poor, and ideal teachers.

Collection of Data

Descriptions follow concerning the study sample, the mailing of materials, and returns received for the questionnaire.

Study Sample

Seniors in the College of Arts and Sciences were chosen because they are in the largest and most heterogeneous college within the University and seniors in the College of Education were chosen as representatives of a professional area. Questionnaires were sent out to a total of 573 seniors in the College of Education and a total of 1,022 in the College of Arts and Sciences, who were scheduled to be graduated in May of 1972 and so categorized by the Registrar's office.

When actual graduating seniors who were reachable by mail were considered the number was reduced to 969 (342 in Education and 627 in Arts and Science).

Mailing, Returns, and Nonrespondents

To insure a high response in the first mailing, the questionnaire was accompanied by a letter from the academic vice president (see Appendix B). The second and third mailings had accompanying letters from the Director of the Center for Higher Education (see Appendix C and D). The participants were asked to return the completed questionnaire by campus mail. The time table for mailing of original and follow-up material was as follows:

- (1) Original mailing of materials, March 22, 1972.
- (2) First follow-up letter, April 6, 1972.
- (3) Second follow-up letter, July 1, 1972.

These mailings yielded 432 responses from Arts and Science seniors and 239 responses from Education seniors, a response of approximately 70 per cent (see Tables I and II). This figure was reached after subtracting those participants whose questionnaires were returned for incorrect addresses. A large part of our original sample was also excluded because they were not graduating seniors.

Analysis of the Data

All of the data from the questionnaires were coded and punched on IBM cards for use in computer tabulations. The descriptive data pertaining to student characteristics, to faculty behavior and characteristics, and to classroom variables involved frequency counts,

TABLE I
DISTRIBUTION OF EDUCATION STUDENTS BY RETURNS AND
NON-RETURNS TO THE QUESTIONNAIRE

| Category | Number | Per Cent Total N=573 | Per Cent Contacted N=342 |
|---|--------|----------------------------|--------------------------------|
| Total listed in September 1971 as potential May 1972 graduates | 573 | 100 | - |
| Students who dropped out of school or whose inquiries were returned by postal authorities | 70 | 12 | - |
| Students who failed to graduate in May 1972 | 161 | 28 | - |
| Students who were graduated and thought to be contacted | 342 | 60 | 100 |
| Total respondents | 239 | 43 | 39.9 |
| Total non-respondents | 103 | 17 | 30.1 |

TABLE II
DISTRIBUTION OF A. & S. STUDENTS BY RETURNS AND
NON-RETURNS TO THE QUESTIONNAIRES

| Category | Number | Per Cent Total N=1022 | Per Cent Contacted N=627 |
|---|--------|-----------------------------|--------------------------------|
| Total listed in September 1971 as potential May 1972 graduates | 1022 | 100 | - |
| Students who dropped out of school or whose inquiries were returned by postal authorities | 112 | 11 | - |
| Students who failed to graduate in May 1972 | 283 | 28 | - |
| Students who were graduated and thought to be contacted | 627 | 61 | 100 |
| Total respondents | 432 | 42 | 68.9 |
| Total non-respondents | 195 | 19 | 31.1 |

percentages, means, and medians.

The first twenty hypotheses investigated the relationship between the ratings students gave faculty members and either (a) student characteristics, (b) faculty personal characteristics, (c) faculty behavioral characteristics, and (d) other interesting classroom variables. Students were given a choice of five numbers to check in their ratings of these teachers with "five" an excellent rating and "one" a very poor rating. These numbers lend themselves to average or mean ratings for groups and consequently the analysis of variance technique could likely check whether any differences in the mean rating by groups were the result of chance or real rating differences. In this study the A.O.V. technique was used in the first twenty hypotheses. This statistic provides significance levels indicating the probability of erroneously concluding that dissimilarities of sub-group averages exist. The five per cent level of significance was routinely adopted in making this judgment, which would mean in five per cent of the cases, we would be making a type one error and subsequently rejecting a hypothesis which is true. Duncan's Multiple-Range test was used to determine which specific groups actually differed significantly.

The remaining hypotheses investigated the student choice of certain discrete characteristics as identifying their "best," "worst," or "ideal" teachers to see whether these were related to certain student variables. The null hypothesis asserts that the two variables under consideration are independent. For example, if 75 per cent of the total sample felt that their "best" teacher was student oriented, 75 per cent of each sub-group (e.g., males and females) should think the same. These are the expected frequencies. The responses that

various sub-groups actually give are the observed frequencies. The hypothesis test utilizing the chi-square statistic indicates when it is reasonable to conclude that real dissimilarities exist among sub-groups, a considerable discrepancy then occurring between the expected and the observed frequencies of response.

Tables of probabilities from the distribution of the chi-square statistic provide significance levels indicating the probability of erroneously concluding that dissimilarities of sub-group distribution exist. The five per cent level of significance was also routinely adopted for this group of hypotheses.

Summary

This chapter has described the research design of the study. The study instrument, the sample involved, and the procedures used to collect the data were also described. The chapter concludes with an explanation of the statistical procedure used to analyze the descriptive data and to test the basic hypotheses.

CHAPTER IV

THE FINDINGS OF THE STUDY

The data gathered from the questionnaires sent to seniors in the College of Arts and Sciences and in the College of Education cover four areas related to the purposes of this study. Findings are presented concerning the personal characteristics of the respondents and the behavioral and personal characteristics of the faculty. Certain classroom variables and the written-in responses concerning the characteristics of good, poor, and ideal teachers are also reported. The results of the tests of hypotheses are incorporated with the descriptive data.

Personal Characteristics of the Study Sample

In order to demonstrate the diversity of the study sample and to fulfill the purpose of obtaining knowledge about the seniors in the Colleges of Arts and Science and of Education at Oklahoma State University in 1972, a report follows on the major, the number of times the major was changed, the sex, the grade-point average, and the marital status of students in the sample.

Expressed Major of the Students

The students' major were designated by four-digit department code numbers to aid in the statistical computation of the data. Seventy-six different majors were represented in the study with as few as one

student per department (Botany, French, Wildlife Ecology, Women Health, Physical Education and Recreation) to as many as 92 in a single department (Education). This item was included in the questionnaire because it was pointed out in the Princeton Project (Gillispie, 1968) that the department or major to which a student belongs tend to affect the ratings a student may give.

For simplicity the various departments represented in this study were sectioned into four groups: (1) physical science with 14 departments and a total of 108 students, (2) arts and humanities with 30 departments and a total of 209 students, (3) life science with 11 departments and 90 students, and (4) social sciences with 20 departments and a total of 269 students. Since this reporter is a zoology major and particularly interested in the life science area, the life sciences will be singled out for special analysis.

The number of times a student changed his major was calculated. Surprisingly 44 per cent of the students have never changed their major and 35 per cent changed it only once.

The null hypothesis concerning the ratings of Oklahoma State University faculty by students and the students' major field of study is as follows:

- (1) There is no relationship between ratings of faculty by college seniors and these seniors' major field.

Students were placed in one of four areas as mentioned above:

(1) social science, (2) physical science, (3) life science, and (4) arts and humanities. Since the calculated F value (3.75) was greater than the table F (2.60) the null hypothesis was rejected (Table III).

TABLE III
ANALYSIS OF VARIANCE FOR MAJOR AREA OF STUDENT
AND TEACHER RATINGS

| Source | SS | DF | MS | F | D |
|---------------|--------|-----|------|------|------|
| Total | 286.00 | 666 | | | |
| Between Group | 4.78 | 3 | 1.59 | 3.75 | <.05 |
| Within Group | 281.22 | 663 | 0.42 | | |

Duncan's Multiple-Range test was used to determine the position of variation (Table XXVII, Appendix E). The test revealed that students in physical science and life science do not vary significantly in their ratings of Oklahoma State University teachers. However, they do vary significantly from the ratings of social science students and slightly but not significantly from arts and humanities students. It could be concluded that social science students were more critical in rating their teachers. Life science and physical science students were less critical.

It was discovered from other calculations that teachers in the physical and life science areas were also classified as the poorer teachers. Perhaps faculty in these areas lack the motivation which can be stimulated by critical students. Since it was found that students give higher ratings to faculty in their own major it appears as though the poor ratings given to physical and life science faculty must have come principally from students in the social science and/or

arts and humanities areas.

Sex of the Students

As was demonstrated in a number of studied reviews in the second chapter, sex appears to have some relationship to perception of teacher effectiveness. In this study 353 or 52.3 per cent of the students were males and 323 or 47.7 per cent of the students were females. This evenness of distribution by sex breaks down when the sex of students by colleges is considered. Arts and Science had 276 or 63.4 per cent males and 159 or 36.5 per cent females. Education, however had more females (164 or 67.7 per cent) than males (78 or 32.2 per cent).

The second hypothesis tested was formulated to determine whether a student's sex is related to the ratings given teachers. Stated in null form this hypothesis reads:

- (2) There is no relationship between ratings of faculty by college seniors and these seniors' sex.

The null hypothesis was accepted that sex is not related to student ratings of their teachers. The calculated F value at the .05 level of significance was 3.25 and the table value was 3.84 (Table IV). Males gave slightly higher ratings to teachers than do females but the difference is not great enough to be categorized as significant.

Grade-Point Average of the Students

The mean grade-point average of the students was 2.86 on a four-point scale with a range from 1.70 to 3.97. This average was slightly higher for Education students (2.91) than for Arts and Science students (2.83).

TABLE IV
ANALYSIS OF VARIANCE FOR SEX OF STUDENT AND TEACHER RATINGS

| Source | SS | Df | MS | F | P |
|---------------|--------|-----|------|------|------|
| Total | 285.90 | 665 | | | |
| Between Group | 1.39 | 1 | 1.39 | 3.25 | >.05 |
| Within Group | 284.51 | 664 | 0.43 | | |

The third hypothesis of this study explores the relationship between the students' grade-point average and the ratings given to faculty members. In null form it reads:

- (3) There is no relationship between ratings of faculty by college seniors and these seniors' grade-point average.

Students were divided into five groups based upon their grade-point average. The author concludes that there is no relationship between student ratings of their faculty and the student's grade-point average, since the calculated F of 1.14 was less than the table F of 2.37 (Table V).

Age of the Students

The average age of the student in this sample was 22.7 years with a range from 19 years to 51 years. Seventy-four per cent of the students were 22 or under, thirteen per cent were 23 to 25 years old, and thirteen per cent were 25 to 51 years old. The range in age was about the same in the College of Arts and Science and in the College of Education.

TABLE V
ANALYSIS OF VARIANCE OF STUDENT GPA AND TEACHER RATINGS

| Source | SS | Df | MS | F | P |
|---------------|--------|-----|------|------|------|
| Total | 286.00 | 666 | | | |
| Between Group | 1.96 | 4 | 0.49 | 1.14 | >.05 |
| Within Group | 284.03 | 662 | 0.43 | | |

The hypothesis concerning the relationship of age of student to their ratings of teachers is as follows:

- (4) There is no relationship between ratings of faculty by college seniors and these seniors' age.

Students were grouped according to the following ages: (1) under 23, (2) 23 to 25, and (3) 25 and over. The null hypothesis was rejected since the calculated F value of 4.42 was higher than the table value of 2.99 (Table VI). Duncan's Multiple-Range test revealed the same ratings of teachers for group one and two and these ratings were more critical than the ratings of older students (see Table XXVIII, Appendix E). Although there were fewer persons in the older group, there were enough to allow us to conclude that the differences obtained are significant.

Marital Status of Students

Forty-nine per cent of the respondents were single, and the remainder were married with the exception of one per cent who were divorced. There was a difference between Arts and Science and

Education students in the percentage single (62 per cent in Arts and Science and 52 per cent in Education). Since girls tend to marry at an earlier age than boys, this difference may be explained by the larger number of girls in the College of Education. A test of hypothesis concerning the relationship between marital status of students and their ratings was not performed.

TABLE VI
ANALYSIS OF VARIANCE FOR AGE OF STUDENT AND TEACHER RATINGS

| Source | SS | Df | MS | F | P |
|---------------|--------|-----|------|------|------|
| Total | 286.00 | 666 | 1.88 | | |
| Between Group | 3.75 | 2 | | 4.42 | <.05 |
| Within Group | 282.24 | 664 | 0.43 | | |

Seniors Rate Their Teachers--An Analysis
by Teacher Variables

Taken as a whole the 671 university seniors in the study sample believe that the men and women who taught them at Oklahoma State University were just slightly better than average in teaching ability. Over 55 per cent judged their teachers "average" and 35 per cent judged them "very good". Only around two per cent of the students deemed their instructors "excellent", but only seven per cent rated

their instructors "below average". The mean rating was 3.3 for all 671 students (three is an "average" rating and four is a "very good" rating). This rating was uniform for students in both colleges studied, with the average ratings given by Arts and Science students to their teachers a 3.30 and for Education students the average rating was 3.31.

To determine if certain student and faculty variables have a bearing on the way students rate their teachers was one of the purposes of this study. This section will report, therefore, the number or incidence of Oklahoma State faculty as categorized by the following variables; faculty age; sex; teaching method; attendance taking, seating, or testing procedures; as well as their use of study guides and audiovisual aids; and their general concern for students. Data concerning these characteristics and the ratings students give faculty who possess them are reported along with these findings.

Age of the Teacher

In the previously reviewed Williams' study (1965), teacher age was found to correlate to judged effectiveness of the teacher, with the age bracket 30 to 39 receiving the most effective endorsement. In this study students were asked to provide the number of teachers they had in the following age groups and to rate them as a group using a five-point scale ("one" being poor and "five" being excellent):

Age Group 20-29. The total sample stated that 20.6 per cent of their teachers were 20 to 29 years old; and they rated these teachers rather well (3.5 mean rating or mid-way between average and very good). Students found 30 per cent of these teachers average and 41 per cent

above average.

Age Group 30-39. Oklahoma State seniors thought that a large number of their teachers (32.4 per cent) were in this group; and, as in the Williams' study, this age group received the highest mean rating (3.65). More than half (51.7 per cent) of the students gave this group of teachers an above average rating and one in ten (9.4 per cent) gave them an excellent rating. Less than four per cent of the students rated these teachers below average and less than one per cent gave these teachers a poor rating. No significant difference was evident when the group was divided by colleges.

Age Group 40-49. The students remembered quite a few teachers in this category (32.4 per cent) but rated them slightly below the first two categories (mean rating of 3.42). An average rating was given 43.1 per cent of the time, and an above average rating 41.7 per cent of the time.

Age Group 50-65. Students thought that few of their teachers (13 per cent) were in this group, and they gave them the lowest rating (3.13). However, nine per cent of the students gave these teachers an excellent rating, and 27 per cent of the students gave them an above average rating.

Whether age of faculty member related to student ratings of them is the question posed by this hypothesis.

- (5) There is no relationship between ratings of faculty by college seniors and the age of the faculty member.

Persons in this sample were asked to indicate if the age of their teachers related to their perception of teacher effectiveness.

Faculty were divided into the following age groups: (1) 20-29 years

old, (2) 30-39 years old, (3) 40-49 years old, and (4) 50-65 years old. The F value derived from the analysis of variance (36.66 at the .05 level of significance) when compared to the table value of 2,60 at the same level of significance resulted in rejection of the null hypothesis. (See Table VII). To determine which specific age group(s) actually differed significantly Duncan's Multiple-Range test for Nearly Equal N's was employed. It was concluded from the data that Groups one and two, one and four, two and four, and three and four differ significantly whereas groups one and three showed no significant difference. Table XXIX in Appendix E lists the values derived. According to this test the larger the number obtained between the means of two groups the greater the probability that it was not due to chance. In this case the number was so large for groups two and four it was significant at the .001 level.

TABLE VII
ANALYSIS OF VARIANCE OF AGE OF FACULTY AND STUDENT RATINGS

| Source | SS | Df | MS | F | P |
|----------------|---------|------|-------|-------|------|
| Total | 2024.66 | 2475 | | | |
| Between Groups | 86.24 | 3 | 28.75 | 36.66 | <.05 |
| Within Groups | 1938.42 | 2472 | 0.78 | | |

Sex of the Teacher

In Rezler's study (1965) entitled "The Influence of Needs Upon the Student's Perception of His Instructor," it was pointed out that a difference does exist between male and female students in their perception of their instructors due to differences in basic needs. These same ideas were verbalized by Morton (1965). If the sex of the student affects their perception of effective teaching, it is possible that the sex of the teacher may influence the student's perception.

The students in the sample recalled that about three-fourths (73.1 per cent) of their teachers were men and one-fourth (26.5 per cent) women. Arts and Science students had slightly more male teachers (77 per cent) than did Education students (65.6 per cent). Male teachers were given a slightly higher rating (3.48) than were female teachers (3.40) by the entire sample of respondents and by students in both colleges.

The following hypothesis asserts that sex of the faculty member is not related to the ratings college seniors give them. In null form it reads:

- (6) There is no relationship between ratings of faculty by college seniors and the sex of the faculty member.

The purpose of testing this hypothesis was to see if sex of the faculty member was related to student ratings of their effectiveness. The computed F value of 2.78 was less than the table value of 3.84 required for significance at the .05 level (one and 1291 df). Thus, the null hypothesis of no relationship was indeed accepted. See Table VIII for analysis of variance data.

TABLE VIII
ANALYSIS OF VARIANCE OF SEX OF FACULTY AND STUDENT RATINGS

| Source | SS | Df | MS | F | P |
|----------------|--------|------|------|------|------|
| Total | 758.96 | 1292 | | | |
| Between Groups | 1.63 | 1 | 1.63 | 2.78 | >.05 |
| Within Groups | 757.34 | 1291 | 0.59 | | |

Academic Achievement of Teachers

Students were asked to categorize their teachers according to possession or nonpossession of the doctoral degree. Close to a third (29.8 per cent) of the teachers were classified as graduate assistants with the remainder (69.7 per cent) classified as having their doctorate. Although the mean rating was high for both groups (3.18 for graduate assistants and 3.56 for doctorates) those with the doctorate received a slightly better rating. Above average to excellent was given 54.0 per cent of the time to doctorates and only 38.5 per cent of the time for graduate assistants.

Stated in null form the hypothesis dealing with educational background of faculty and student ratings is as follows:

- (7) There is no relationship between ratings of faculty by college seniors and the educational background of the faculty member.

Faculty were divided into two groups: (1) those possessing the doctorate degree, and (2) those not possessing it. The hypothesis was

rejected because the calculated F value of 60.09 (Table IX) was so much greater than the table value of 3.84 at the .05 level of significance (one and 1302 df). It was concluded that persons possessing the doctorate degree were preferred by the students of the sample.

TABLE IX
ANALYSIS OF VARIANCE OF EDUCATIONAL BACKGROUND OF
FACULTY AND STUDENT RATINGS

| Source | SS | Df | MS | F | P |
|---------------|---------|------|-------|-------|------|
| Total | 1075.63 | 1303 | | | |
| Between Group | 47.45 | 1 | 47.45 | 60.09 | <.05 |
| Within Group | 1028.18 | 1302 | 0.79 | | |

Seniors Rate Their Teachers--An Analysis
of Behavioral Characteristics

Instructional Methods Used by Teachers

The students were asked to estimate the percentage of their teachers who used a particular type of teaching method and to rate teachers using each given method. The choice was between (1) lecture, (2) laboratory, (3) discussion, (4) self-paced, (5) audio-tutorial, (6) television, (7) inquiry, or (8) some other method--each as the principal instructional technique of the college teachers. The

incidence of each of these methods and students' reactions are listed below and highlighted at the end of this section (see Table X).

Lecture Method. The lecture method was utilized as a principal means of instructing by 64.2 per cent of the teachers at Oklahoma State University. This figure was substantially the same for Arts and Science students and for Education students. Teachers using this method received a poor rating 2.8 per cent of the time, a below average rating 13.8 per cent of the time, an average rating 48.0 per cent of the time, an above average rating 32.0 per cent of the time, and an excellent rating 3.1 per cent of the time. The mean rating was 3.19 which was below the rating given discussion, self-paced, and inquiry-taught classes. Education students gave fewer above average and excellent ratings to teachers using this method than did Arts and Science students.

Laboratory Method. Only 11 per cent of Oklahoma State teachers were judged to use the laboratory method as a principal teaching method, with little difference between Arts and Science and Education students in reported incidence. A poor rating was given to the teachers using the laboratory method by 7.8 per cent of the students, a below average rating was given by 20 per cent, an average rating by 36.7 per cent, an above average rating by 27.5 per cent, and an excellent rating given by 7.8 per cent of the sample. Students in both colleges gave about the same responses and the mean rating given the laboratory method was 3.07 (about as close to average as can be given).

Discussion Method. Only 13 per cent of Oklahoma State University teachers employed the discussion method primarily (12 per cent cited by Arts and Science students and 16 per cent by Education students);

and this may be unfortunate since it received an overall higher rating than did any other method (3.82 mean rating). Only 1.6 per cent of the students gave it a poor rating, 8.1 per cent a below average rating, 20.6 per cent an average rating, 45.5 per cent an above average rating, and an impressive 24 per cent gave it an excellent rating. Little variation existed between the ratings of Arts and Science and Education students.

Self-Paced Method. Very few teachers (2.7 per cent) were designated as users of this method, but it received a very high endorsement (3.79 mean rating by all students and 3.97 by Education students). Around six per cent of the total sample thought it a poor teaching method, 10.2 per cent ranked it below average, 17.3 per cent average, 34 per cent above average, and almost one in three students (31 per cent) rated it excellent. Education students in particular favor this method (42.8 per cent thought teachers using it were excellent).

Audio-Tutorial Method. Very few Oklahoma State teachers (1.4 per cent) use this method, which received a rather ordinary (2.97) rating. Ratings were not as favorable for these teachers as for teachers using the self-paced method--which is odd, since most audio-tutorial classes are self-paced. The apparent discrepancy may be explained either by the way audio-tutorial is handled at Oklahoma State University (emphasis on taped lectures) or by the concept students may have of self-paced teaching (equivalent to independent study).

Television. Only 2.6 per cent of the teachers of Oklahoma State seniors were thought to use television as a principal teaching method; and this may be good, since it received the lowest rating (mean of 1.99). Four out of ten students (41 per cent) gave this the lowest

rating, 30.5 per cent gave it a below average rating, 19 per cent an average rating, 6.8 per cent an above average rating, and only 1.9 per cent gave it an excellent rating. Education students responded about the same as did Arts and Science students.

Inquiry Method. The inquiry method, although used by only two per cent of the teachers, received very high rating by the participants of this study (3.68 mean rating). Few students (around 12 per cent) gave it a below average or poor rating, and six out of every ten students rated it above average or excellent.

TABLE X
INCIDENCE OF AND AVERAGE RATINGS GIVEN TO
VARIOUS TEACHING METHODS

| Teaching Method | Per Cent Teachers Using It | Average Ratings | | |
|-----------------|----------------------------------|-----------------|-------------------|-----------------------|
| | | All Students | A & S Students | Education Students |
| Discussion | 13.0 | 3.82 | 3.84 | 3.79 |
| Self Paced | 2.7 | 3.79 | 3.64 | 3.97 |
| Inquiry | 2.0 | 3.68 | 3.56 | 3.87 |
| Lecture | 64.2 | 3.19 | 3.29 | 3.01 |
| Laboratory | 11.0 | 3.07 | 3.06 | 3.09 |
| Audio Tutorial | 1.4 | 2.97 | 2.93 | 3.12 |
| Television | 2.6 | 1.99 | 1.98 | 2.01 |

The hypothesis that compares the eight teaching methods used by faculty at Oklahoma State University with student ratings is as follows:

- (8) There is no relationship between the ratings of faculty by college seniors and the teaching method employed by the faculty member.

The methods considered in this study were: (1) lecture, (2) laboratory, (3) discussion, (4) self-paced, (5) audio-tutorial, (6) television, (7) inquiry, and (8) other. The calculated F value at the .05 level of significance was 132.58 and the table value was 2.01 (Table XI).

TABLE XI
ANALYSIS OF VARIANCE FOR TEACHING METHOD
OF FACULTY AND STUDENT RATINGS

| Source | SS | Df | MS | F | P |
|---------------|---------|------|--------|--------|------|
| Total | 3909.10 | 3007 | | | |
| Between Group | 923.60 | 7 | 131.94 | 132.58 | <.05 |
| Within Group | 2985.50 | 3000 | 1.00 | | |

Significant difference at the .05 level was found to exist between all groups with the exception of the following: (1) groups one and two, (2) groups two and five, (3) groups three and seven, and (4) groups four and seven. Groups one and six, two and six, three and six, four and six, six and seven, and six and eight were significant at the .001 level. The use of television as a teaching method by Oklahoma State University faculty appears to have been in greatest

disfavor by the students. (See Table XXX in Appendix E).

Attendance Taking

Although it is difficult to generalize, teachers who take regular attendance and assign seats seem to lean toward a more structured atmosphere in their classroom. Therefore, whether a teacher is structured or relaxed in his presentation of his material is a fruitful variable to consider as a possible relationship to effective teaching.

Approximately half (50.8 per cent) of the Oklahoma State University teachers were listed by their students as regular attendance takers with little difference existing between the two colleges represented. A low average rating of 2.99 was given to these teachers whereas, a high mean rating of 3.74 was given to the 49.2 per cent of teachers not classified as taking attendance.

The relationship of regular attendance keeping to the ratings given faculty by their students is tested in the following hypothesis.

- (9) There is no relationship between the ratings of faculty by college seniors and attendance keeping on the part of faculty members.

Since the descriptive data revealed widely variant responses to this question it is not surprising that this hypothesis was rejected. The obtained F was 219.28 which is well above the 3.84 required for significance: hence, the null hypothesis was rejected (Table XII). Students definitely prefer teachers who are not overly concerned about attendance.

TABLE XII
ANALYSIS OF VARIANCE ON ATTENDANCE TAKING BY
FACULTY AND STUDENT RATINGS

| Source | SS | Df | MS | F | P |
|---------------|---------|------|--------|--------|------|
| Total | 1335.47 | 1326 | | | |
| Between Group | 189.63 | 1 | 189.63 | 219.28 | <.05 |
| Within Group | 1145.84 | 1325 | 0.86 | | |

Assignment of Seats

Approximately three quarters (72.1 per cent) of the faculty do not assign seats to their students whereas 27.9 per cent of them do. Differences between the responses of the two colleges were not significant. Students seem to prefer teachers who do not assign seats. An above average rating of 3.76 was given to faculty not assigning seats and a below-average rating of 2.67 was given to faculty who assigned seats.

The hypothesis that probed whether there were significant differences between the ratings of faculty and the policy of assigning seats is stated in null form, as follows:

- (10) There is no relationship between the ratings of faculty by college seniors and the assigning of seats on the part of faculty members.

This question received quite varied responses as revealed above. The calculated F value was 447.83 whereas the table value was only 3.84. The hypothesis was rejected, since students preferred teachers

who did not assign seats (Table XIII).

TABLE XIII
ANALYSIS OF VARIANCE OF ASSIGNMENT OF SEATS BY
FACULTY AND STUDENT RATINGS

| Source | SS | Df | MS | F | P |
|----------------|---------|------|--------|--------|------|
| Total | 1498.61 | 1296 | | | |
| Between Groups | 385.07 | 1 | 385.07 | 447.83 | <.05 |
| Within Groups | 1113.53 | 1295 | 0.86 | | |

Testing Frequency

The frequency of testing, like the policies teachers hold about assigning seats and attendance taking, can say something about the atmosphere in a given classroom. Testing frequency was divided as follows: (1) no tests a semester, (2) one test a semester, (3) two tests a semester, (4) monthly tests, (5) bimonthly tests, and (6) weekly tests. Table XIV lists the data obtained from this item. Teachers testing on a monthly basis were most common (39.7 per cent); and, although they received a high mean rating of 3.53, teachers giving no tests at all were given the highest ratings (3.75).

In null form, the hypothesis concerning testing frequencies reads:

- (11) There is no relationship between the ratings of faculty by college seniors and the testing procedure used by faculty members.

TABLE XIV
INCIDENCE OF AND AVERAGE RATINGS GIVEN
TO VARIOUS TESTING FREQUENCIES

| Number of Tests Given | Per Cent Teachers | Average Ratings | | |
|--------------------------|----------------------|-----------------|-------------------|-----------------------|
| | | All Students | A & S Students | Education Students |
| 1) No Tests | 3.3 | 3.75 | 3.63 | 3.95 |
| 2) One Test | 3.7 | 2.66 | 2.73 | 2.54 |
| 3) Two Tests | 30.2 | 3.04 | 3.07 | 2.98 |
| 4) Monthly Tests | 39.7 | 3.53 | 3.49 | 3.59 |
| 5) Bimonthly Tests | 15.7 | 3.41 | 3.38 | 3.47 |
| 6) Weekly Tests | 7.4 | 3.22 | 3.22 | 3.22 |

A highly significant F value of 52.24 was derived with the table value being 2.21. Thus, the hypothesis was rejected. (Table XV).

TABLE XV
ANALYSIS OF VARIANCE OF TESTING FREQUENCY
OF FACULTY AND STUDENT RATINGS

| Source | SS | Df | MS | F | P |
|---------------|---------|------|-------|-------|------|
| Total | 3028.69 | 2741 | | | |
| Between Group | 263.96 | 5 | 52.79 | 52.24 | <.05 |
| Within Group | 2764.73 | 2736 | 1.01 | | |

To determine which specific groups differed significantly Duncan's Multiple-Range test was again employed. Significant difference was found to exist between all the groups except group four (monthly testing), and group five (bimonthly testing). Significance at the .001 level was found between groups one and two (no tests a semester and one test a semester), and groups two and four (one test a semester and monthly testing). Others were also significant at the .001 level but see Table XXXI, Appendix E for data.

Teachers Use of Study Guides

The percentage of teachers said to provide study guides or written objectives for their students was 51.6 with 48.4 not providing the service. Ratings given these teachers by their students were interesting. The teachers who provided study guides received very high ratings (3.91 mean ratings) with an above average to excellent rating given by the students 74.4 per cent of the time. Those teachers not providing the service received a below-average rating (2.77 mean rating) with an above-average to excellent rating given 20.3 per cent of the time. Significant variation between colleges did not exist.

Faculty who used study guides and written course objectives were compared to those who did not by college seniors. In null form, this hypothesis reads:

- (12) There is no relationship between the ratings of faculty by college seniors and the use of study guides or written course objectives by faculty members.

Since significant difference was registered on this issue, the use of study guides and written course objectives appear related to positive faculty ratings by college seniors. The previous null

hypothesis was therefore rejected. The derived F value for this test was 538.09 whereas the table value was 3.84. (Table XVI).

TABLE XVI
ANALYSIS OF VARIANCE ON PROVIDING COURSE OBJECTIVES
BY FACULTY AND STUDENT RATINGS

| Source | SS | Df | MS | F | P |
|----------------|---------|------|--------|--------|------|
| Total | 1459.26 | 1314 | | | |
| Between Groups | 424.19 | 1 | 424.19 | 538.09 | <.05 |
| Within Groups | 1035.07 | 1313 | 0.79 | | |

Teacher Specification of Grading Criteria

Results from this item resemble the above statistics with little variation except in the percentage of teachers so classified. About three-fourths (74.3 per cent) specified grading criteria and one-fourth (25.7 per cent) did not. A mean rating of 3.92 was given to teachers that stated criteria with an above-average to excellent rating given 72.8 per cent of the time. Those teachers not providing stated criteria received a below-average rating of 2.49 with an above-average to excellent rating given 12.4 per cent of the time.

The specification of grading criteria by the faculty member was found to be related to student ratings and the hypothesis stated in

null form reads:

- (13) There is no relationship between the ratings of faculty by college seniors and the specification of criteria for grades on the part of the faculty member.

The rejection of this hypothesis is not surprising, since the descriptive data demonstrated a high mean rating for teachers who carried out this practice. The calculated F was 781.13 and the table value was 3.84 thus the hypothesis was rejected at the .05 level of significance (Table XVII).

TABLE XVII
ANALYSIS OF VARIANCE ON GRADING CRITERIA OF
FACULTY AND STUDENT RATINGS

| Source | SS | Df | MS | F | P |
|---------------|---------|------|--------|--------|------|
| Total | 1665.55 | 1256 | | | |
| Between Group | 638.96 | 1 | 638.96 | 781.13 | <.05 |
| Within Group | 1026.59 | 1255 | 0.82 | | |

Teachers Use of Audiovisual Materials

The use of audiovisual materials was not as prevalent as expected with 42.0 per cent of the teachers utilizing them and 58.0 per cent not using them. No significant variation between colleges existed. However, when considering the ratings, education students tended to be

a little more in favor of teachers using audiovisual materials and less favorable toward teachers not using them. An average rating of 3.76 was reported for audiovisual users which is significantly greater than a mean rating of 3.04 for non-users. For non-users an average to poor rating was given 74.6 per cent of the time, whereas the same rating was given 32.5 per cent of the time for audiovisual users.

The null hypothesis was tested and it reads as follows:

- (14) There is no relationship between the ratings of faculty by college seniors and the use of audiovisual materials by faculty members.

A preference for teachers using audiovisual materials was suggested in the descriptive data and this test of hypothesis verifies that suggestion. The calculated F value was 262.31 which is well above the 3.84 required for significance; hence, the null hypothesis was rejected (Table XVIII).

TABLE XVIII

ANALYSIS OF VARIANCE OF USEAGE OF AUDIOVISUAL MATERIALS
BY FACULTY AND STUDENT RATINGS

| Source | SS | Df | MS | F | P |
|----------------|---------|------|--------|--------|------|
| Total | 1024.80 | 1324 | | | |
| Between Groups | 169.57 | 1 | 169.57 | 262.31 | <.05 |
| Within Groups | 855.23 | 1323 | 0.65 | | |

Availability of Teachers Outside of Class

Availability of faculty outside of class has been found in the literature to be related to teacher interest and concern for students. The data concerning this item bear this out. The students felt over one-half (57.8) of their teachers were available to them outside of class and gave this group a very high rating (average of 4.02 which is "very good" to "excellent"). A considerably lower average rating of 2.57 was given by the students to the 42.2 per cent of the teachers who were not readily available outside of class. To these teachers Education students gave lower ratings (2.45) than did Arts and Science students (2.64).

The availability of faculty to students outside of the classroom was considered and the hypothesis in null form reads:

- (15) There is no relationship between the ratings of faculty by college seniors and the office hours kept by faculty members.

A high calculated F value of 848.38 as compared to a low table value of 3.84 resulted in the rejection of the null hypothesis (Table XIX). Teachers who are available to students outside of class are preferred by the Oklahoma State University seniors in this sample. This behavior on the part of teachers tend to demonstrate a concern for students.

Teacher Concern for Students

Resembling the above item in philosophy and results was the question of teacher concern for students. Students felt that less than half (43.9 per cent) of their teachers demonstrated real concern for

them and more than half (56.1 per cent) were reported as not concerned. Data from the item were basically the same for both colleges. The average ratings went from a high of 4.33 ("very good" to "excellent") for the concerned faculty to a low of 2.23 ("below average" to "average") for the unconcerned faculty. Only five per cent of the students cited an above average to excellent rating for unconcerned faculty, whereas 89.5 per cent of the students rated concerned faculty as "above average" or "excellent".

TABLE XIX
ANALYSIS OF VARIANCE ON AVAILABILITY OF FACULTY
AND STUDENT RATINGS

| Source | SS | Df | MS | P |
|---------------|---------|------|--------|------|
| Total | 1672.43 | 1277 | | |
| Between Group | 667.89 | 1 | 667.89 | <.05 |
| Within Group | 1004.54 | 1276 | 0.79 | |

In null form the hypothesis dealing with faculty concern for students reads:

- (16) There is no relationship between the ratings of faculty by college seniors and concern for students as evidenced by the faculty members.

This item was even more conclusive than the previous one. The hypothesis was rejected since the calculated F was 2045.63 and the

table value was 3.84 (Table XX). Students definitely prefer concerned teachers.

TABLE XX
ANALYSIS OF VARIANCE FOR FACULTY CONCERN FOR
STUDENTS AND STUDENT RATINGS

| Source | SS | Df | MS | F | P |
|---------------|---------|------|---------|---------|------|
| Total | 2301.18 | 1291 | | | |
| Between Group | 1411.24 | 1 | 1411.24 | 2045.63 | <.05 |
| Within Group | 899.95 | 1290 | 0.69 | | |

Primary Orientation of Teachers

When asked to provide the percentage of teachers they had who were primarily concerned with (1) subject matter, (2) student interest or development, or (3) something other than these two, the following percentages were given: 51.4 per cent (subject matter), 30.8 per cent (student interest), and 17.6 per cent (neither). As was expected, a low average rating of 1.80 was given to those teachers who were interested primarily in neither subject matter nor students. Average ratings of 4.03 and 3.43 were given respectively to the student-oriented and subject-oriented teachers. Above-average to excellent ratings were given only 1.1 per cent of the time for teachers evidencing

neither student nor subject matter interest and 47.2 per cent of the students gave above-average to excellent ratings to teachers with subject matter orientation. However, a very significant 77.1 per cent of students gave the two high ratings to teachers whose primary interest was in them.

The test of hypothesis for faculty members' major orientation and student ratings was considered. In null form it reads:

- (17) There is no relationship between the ratings of faculty by college seniors and evidenced concern for subject matter, student interest, or neither subject matter or student interest on the part of the faculty member.

A significant F value of 1092.68 was calculated and a table value of 2.99 was determined (Table XXI). To determine where the variation occurred Duncan's Multiple-Range test was used. Variation occurred among all three pairs of these groups, significant at the .001 level. However, the mean differences between the groups was greatest between groups two and three. See Table XXXII, Appendix E for these means. It is evident that students prefer teachers who demonstrate interest in them over teachers who are primarily concerned with subject matter or with anything else.

Classroom Variables

This group of hypothesis consists of three specific relationships that could not be easily placed in any other group, and they are referred to as classroom variables.

TABLE XXI
ANALYSIS OF VARIANCE FOR MAJOR CONCERN OF
FACULTY AND STUDENT RATINGS

| Source | SS | Df | MS | F | P |
|---------------|---------|------|--------|---------|------|
| Total | 2902.84 | 1861 | | | |
| Between Group | 1568.54 | 2 | 784.27 | 1092.68 | <.05 |
| Within Group | 1334.29 | 1859 | 0.72 | | |

Students Compare Professors in Their Major with Other Faculty

A total of 45 per cent of the teachers were classified as teaching in the student's major department with 55 per cent of them reported as teaching in other areas. It has been suggested in the literature that students prefer teachers in their own field of interest, and the data resulting from this study would substantiate such a belief. The mean rating given by students for teachers in their own department was 3.75 and the average rating for teachers in other areas was 3.25. An above-average and excellent rating was cited 66.6 per cent of the time for teachers in the student's major but this rating was cited only 33.4 per cent of the time for other teachers. Significant variation did not exist between the colleges.

Whether a relationship exists between the courses in a student's major or elsewhere and the student's rating of those teachers was considered. In null form it reads:

- (18) There is no relationship between whether the courses were in the students' major or other department and the students' rating of those teachers.

This hypothesis was rejected since the calculated F value of 128.49 was much higher than the table F value of 3.84. The descriptive data as well as the result of this test of hypothesis support the belief that students prefer teachers in their own field of study. See Table XXII for calculated F data.

TABLE XXII

ANALYSIS OF VARIANCE FOR COURSES IN STUDENT MAJOR
OR ELSEWHERE AS RELATED TO THE TEACHER RATINGS

| Source | SS | Df | MS | F | P |
|---------------|--------|------|-------|--------|------|
| Total | 909.76 | 1310 | | | |
| Between Group | 81.32 | 1 | 81.32 | 128.49 | <.05 |
| Within Group | 828.44 | 1309 | 0.63 | | |

Students Compare Professors in Four General Areas

Students were requested to divide their teachers into the following teaching areas: (1) Arts, humanities, English and history, (2) physical sciences, engineering, and mathematics, (3) social sciences and education, and (4) life sciences. They were to provide the percentage of teachers in each area and then rate them. The percentage

of teachers in each group was as follows: (1) arts (33 per cent), (2) physical sciences (19 per cent), (3) social sciences (33 per cent), and (4) life sciences (15 per cent). Average ratings given these teachers did not vary drastically, however teachers in the arts received the highest mean rating of 3.45 followed by social sciences with 3.39. The poorest rating went to teachers in the physical sciences (3.04) and life sciences teachers received a rating midway between the best and the worst (3.20).

In null form the hypothesis concerning areas of various courses and student ratings reads:

- (19) There is no relationship between whether the courses were in the general areas of arts, physical science, social science or life science and the students' ratings of those teachers.

The calculated F value was 26.26 and the table value was 2.60 at the .05 level of significance (Table XXIII). The null hypothesis was rejected. Duncan's Multiple-Range test was applied to the data to determine where the variation existed. Significant difference between the means existed between all groups except for group one (arts and humanities) and group three (social science): therefore, the author concludes that teachers in arts and humanities and social science were given similar ratings. Significant difference at the .001 level occurred between groups one and two, one and four, two and three, and three and four. Significant difference at the .05 level was obtained between the above four groups as well as between groups two and four. The greatest amount of mean difference occurred between group one (arts and humanities) and two (physical science). This finding supports the descriptive data which suggests that teachers in the physical

science area are the least favored teachers while teachers in the arts and humanities are the most favored. See Table XXXIII, Appendix E for mean data.

TABLE XXIII
ANALYSIS OF VARIANCE FOR AREAS OF VARIOUS
COURSES AND STUDENT RATINGS

| Source | SS | Df | MS | F | P |
|---------------|---------|------|-------|-------|------|
| Total | 2008.36 | 2394 | | | |
| Between Group | 64.07 | 3 | 21.36 | 26.26 | <.05 |
| Within Group | 1944.29 | 2391 | 0.81 | | |

Class Size

This item could not be categorized as a student or teacher variable, namely the influence of class size on teacher efficiency ratings. Students were requested to recall the percentage of classes they had having the following number of students enrolled: (1) less than 20 students, (2) 20-29 students, (3) 30-39 students, (4) 40-49 students, and (5) 50 or more students. They were asked to rate the teachers of these classes on their effectiveness. The data from this item are inversely proportional, with the mean rating increasing as the number of students in the class decreases (Table XXIV).

TABLE XXIV
INCIDENCE OF AND AVERAGE RATINGS GIVEN
TO VARIOUS CLASS SIZES

| Number of Students in the Class | Per Cent of Classes | Mean Rating |
|------------------------------------|---------------------------|----------------|
| Less than 20 | 8.7 | 4.28 |
| 20-29 | 19.8 | 3.94 |
| 30-39 | 25.8 | 3.46 |
| 40-49 | 17.8 | 3.00 |
| 50 or More | 28.3 | 2.32 |

The following null hypothesis was tested:

- (20) There is no relationship between class size and the ratings given teachers of these classes.

A high F value of 499.46 was calculated (table value of 2.37) indicating rejection of the null hypothesis (Table XXV). Duncan's test was employed to determine where the greatest variation occurred among the groups. Variation occurred among all six pairs of these groups, significant at the .001 level. However, the mean differences between the groups was greatest between groups one (less than 20 students) and five (more than 50 students), and the least between groups one (less than 20 students) and two (20-29 students). See Table XXXIV, Appendix E for these means. It is apparent, after considering these data and the descriptive data that student ratings of faculty effectiveness increases with a decrease in class size.

TABLE XXV
ANALYSIS OF VARIANCE FOR CLASS SIZE AS RELATED
TO TEACHER RATINGS

| Source | SS | Df | MS | F | P |
|---------------|---------|------|--------|--------|------|
| Total | 3342.47 | 2866 | | | |
| Between Group | 1374.05 | 4 | 343.51 | 499.46 | <.05 |
| Within Group | 1968.41 | 2862 | 0.69 | | |

Characteristics of Best, Worst, and
Ideal Teachers

Students were requested to list characteristics of their best, worst, and ideal teachers. Their responses were placed in one of 18 categories (See Appendix G). The five most commonly cited characteristics of best teachers were: (1) interest in students, (2) good personality, (3) interest in subject matter, (4) an ability to make subject interesting, and (5) objectivity in presenting subject matter and in dealing with students. The position of these characteristics vary slightly between the colleges. Characteristics listed for the worst teachers were: (1) poor communication skills, (2) poor personality (with the lack of enthusiasm cited most often as the reason), (3) lack of organization, (4) lack of objectivity, and (5) little interest in students. The characteristics listed for their ideal teacher resembled those cited for their best: (1) interest in student, (2) objectivity, (3) knowledge of subject, (4) interest in subject matter, and (5) good

personality.

One interesting finding came by way of serendipity. Although it was not requested that students identify by name their best and worst teachers, many did so. Several names were mentioned often, which is not surprising. However, the same people were often mentioned as both the "best" and "worst" teacher by different students, which is surprising. These teachers tended to be very unstructured and relaxed in their presentation and classroom atmosphere. For students who like informality, this is great. For those who want structure and definite goals, this is chaos. Although it is obvious from other findings in this study that there are certain definite teacher characteristics which most students want to see in all of their teachers, it is equally important to pay attention to the individual learning styles and unique psychological needs of students.

Students were requested to provide some personal information about the teachers they designated as their best and their worst. In subsequent paragraphs, therefore, the sex, age, educational background, and departmental affiliation of these teachers will be reported. Since the item requesting information about ideal teachers was completely open-ended it is not possible to objectively report such personal information on these teachers.

Male was listed most often as the sex of the best professor (72 per cent) with female being cited 28 per cent of the time. Seventy nine per cent of the worst teachers were males and 21 per cent were females. At first blush, one might conclude that male teachers are more polarizing than females. However, the actual percentage of males and females in the total population is quite similar (73 per cent were

male and 27 per cent were female). In addition the analysis of variance for sex of teacher and student ratings reveals no relationship between sex of teacher and student ratings of their effectiveness.

Since the age of students best and worst teachers may prove fruitful as a variable, it was also considered. Ages given by the students were divided into the following groups: (1) 20-29 years old, (2) 30-39 years old, (3) 40-49 years old, and (4) 50-65 years old. See Table XXVI for the percentages of best and worst teacher in the various age groups.

TABLE XXVI
AGE OF BEST AND WORST TEACHERS

| Age Group | Percentage of Best | Percentage of Worst |
|-----------|--------------------|---------------------|
| 20-29 | 16.3 | 14.8 |
| 30-39 | 40.8 | 26.3 |
| 40-49 | 24.5 | 24.3 |
| 50-65 | 18.4 | 34.6 |

It is apparent that the students selected the 30-39 year old bracket most often as the age of their best teacher (40.8 per cent) with the 50-65 year bracket receiving the largest number of worst teacher votes (34.6 per cent). The observed frequencies of the other

two age groups do not differ much from the expected frequencies.

Regarding the educational background of the teachers they chose as their best and their worst, teachers possessing the doctorate were cited by 65 per cent of the students as their best teacher with 35 per cent cited as not possessing the doctorate degree. Worst teachers were identified by 57 per cent of the students as not possessing the doctorate. Since close to 70 per cent of the total faculty as viewed by students possess a doctorate we cannot conclude that educational attainment was related to students' choice of their best teacher (since 65 per cent of teachers so chosen were deemed to possess the doctorate and these differences are minimal). However, faculty who do not possess the doctorate were cited more frequently than their per cent of the total faculty would warrant as the worst teachers that Oklahoma State University students had (only 30 per cent of the faculty were judged to not have a doctorate but 54 per cent of the faculty designated as students' worst teacher were deemed not to have this terminal degree). Therefore if educational attainment is related to choice of best and worst teachers it seems to apply more in the choice of the worst than the best teacher.

Students were asked to mention the department to which their best and worst teacher belonged. Only five most commonly cited departments are reported in this study since there was a naturally occurring cut-off point after which departments were seldom mentioned. Thirteen per cent of the students chose a teacher from the English Department as their worst professor. The mathematics department received 10.4 per cent of the student responses followed by 9.9 per cent for education, 7.2 per cent for sociology, and seven per cent for psychology.

More students chose the education department as providing their best teacher (12.6 per cent). History received 9.5 per cent of the student response followed by 8.9 per cent for English, 7.8 per cent for sociology, and 5.7 per cent for psychology.

The departments of English, education, sociology, and mathematics were most probably cited as containing best and worst teachers not because they contain a preponderance of best and worst teachers but because a large number of students majored in these departments and it appears that students chose their best and worst teachers from the department in which they have the most courses. This same observation could not be made, however, for the mathematics department which was cited after the English department in frequency as the one containing the worst teachers, but was rarely cited as the department containing the best teacher.

Student Characteristics as Related to Choice

of Best, Worst, and Ideal Teachers

The study hypotheses concerning characteristics of best, worst, and ideal teachers considers only relationships between certain student characteristics and their choice of the qualities of their best, worst, and ideal teacher. The student characteristics considered were: (1) sex, (2) age, (3) grade-point average, and (4) major area of study. The questionnaire items that obtained the information on the qualities of best, worst, and ideal teachers were completely open-ended. A system was designed for classifying student responses into one of 18 categories. The five most chosen categories of their "best" or "ideal" teacher were: (1) interest in students, (2) general knowledge of

subject matter, (3) good personality, (4) objectivity, and (5) interest in subject matter. The characteristics chosen for the worst teacher were: (1) poor communication skills, (2) poor personality, (3) lack of organization, (4) lack of objectivity, and (5) little interest in students. Twelve hypotheses explored the relationship between student characteristics and their choices. Stated in general form it reads:

There is no relationship between certain student characteristics and these students' choice of best, worst, and ideal teachers.

Since all the hypotheses (12) of this group received chi-square values less than the table value all null hypotheses were accepted and for this reason the hypotheses will not be treated individually but in groups of three. Below for each group of three hypotheses, both chi-square computed value and table value will be given. In Appendix F, Table XXXV these two values as well as the degrees of freedom and .05 threshold will be supplied for each hypothesis.

Student Sex and Choice of Best, Worst, and Ideal Teacher

The first group of hypotheses concerns the student characteristic of sex as it relates to their choice of best, worst, and ideal teachers. In general form these three hypotheses are:

21-23 There is no relationship between the sex of the student and the student's choice of best, worst, and ideal teachers.

For this and subsequent items the chi-square statistic was employed to determine if real dissimilarities exist among subgroups. The five per cent level of significance was routinely adopted for this group of hypotheses. The table chi-square value for all three hypotheses was 9.5. The computed chi-square value for best teacher as related to

student sex was 6.8. A value of 4.8 was obtained for worst teacher as related to student sex and a value of 3.5 for ideal teacher as related to student sex. Since the computed values were less than the table value the three hypotheses were accepted resulting in the assumption that there is no relationship between sex of the student and the student's choice of best, worst, and ideal teacher.

Student Age and Choice of Best, Worst, and Ideal Teacher

The second group of hypotheses concerns the student characteristic of age as it related to choice of best, worst, and ideal teachers. The general hypothesis is stated as follows:

24-26 There is no relationship between age of students and these students' choice of best, worst, and ideal teachers.

The students in the sample were divided into the following three age groups: (1) 22 or under, (2) 23 to 25 years of age, and (3) 25 and over. The table value for the three hypotheses was 15.5. The computed chi-square value for best teacher was 7.0, for worst teacher it was 5.8, and for ideal teacher it was 4.7. Since the computed chi-square values were smaller in all three cases than the table value, all null hypotheses were accepted at the .05 level of significance. It is interesting to note that even though age was a variable in rating groups of Oklahoma State University teachers, it was not a variable when choosing characteristics for best, worst, and ideal teachers. Although older students (over 24) were in agreement with the younger ones over characteristics of best, worst, and ideal teachers, they were less critical of their teachers as a whole than were younger students.

Grade-Point Average and Choice of Best, Worst, and Ideal Teacher

Grade-point average as it related to student choice of best, worst, and ideal teacher is the concern of the following general hypothesis:

- 27-29 There is no relationship between students grade-point average and these students' choice of best, worst, and ideal teacher.

Students were divided into the following five groups, students having a grade-point average of: (1) 4.00 to 3.50, (2) 3.49 to 3.00, (3) 2.99 to 2.50, (4) 2.49 to 2.00, and (5) 1.99 to 1.70. A table chi-square value of 26.3 was obtained. The computed value for best teacher as related to grade-point average was 14.0, for worst teacher 13.7, and for ideal teacher 18.8. Acceptance of the null hypothesis that there is no relationship between grade-point average of students and their choice of best, worst, and ideal teacher was concluded. These results support the findings from other studies as reported in the survey of the literature chapter.

Major Area of Study and Choice of Best, Worst, and Ideal Teacher

The final group of hypotheses concerns the relationship between the student's major area of study and his choice of best, worst, and ideal teachers. Stated in general form, it reads:

- 30-32 There is no relationship between students' major area of study and these students' choice of best, worst, and ideal teacher.

Students were categorized as belonging to the general area of either social sciences, physical science, life science or arts and humanities. These hypotheses were also accepted because the computed

chi-square values were less than the table value of 21.0. The computed value for major area of study as related to choice of best teacher was 14.4, as related to worst teacher it was 9.2 and as related to ideal teacher it was 12.8. Although students in social science and to a lesser degree arts and humanities were more critical of Oklahoma State University faculty than were students in physical science and life science, there was no significant difference between the students of the various groups and their choice of best, worst, and ideal teacher characteristics.

Data for Life Science Students

As mentioned previously the author is particularly concerned with the life sciences, since she studied in this area for the past 11 years. Consequently, the population as a whole was broken down into four groups, namely those majoring in the following areas: (1) arts and humanities, (2) physical science, (3) social science, and (4) life science. Life science students resemble the total population in the frequency and ratings of teachers possessing the following characteristics or behaviors: (1) the taking of attendance, (2) the assigning of seats, (3) the provision of study guides, (4) the specification of grading criteria, (5) their education, (6) their concern for students, and (7) their primary orientation.

Approximately the same number of their teachers used the lecture method, but twice as many employed the laboratory method. Self-paced method was preferred slightly over discussion which is the obverse of the opinion expressed by the total population. Over one-half (51 per cent) listed monthly testing most frequently as compared to 39.7

per cent for the total population. A no testing policy was the first choice of life science students as it was for the total population; however, ratings of other testing frequencies reveal life science students lean towards more tests than do students taken as a whole.

More large classes (50 or more) were taught according to the students in the life science area (41 per cent of the classes), although such large classes were least liked (2.53 mean rating). The other statistics pertaining to this item were approximately the same. Audio-visual materials were used more often by teachers of life science students (52 per cent to 42 per cent for total population) but the mean rating given was the same for both groups. Life science students felt that slightly fewer of their faculty were available outside of the classroom (52 per cent to 58 per cent) but their ratings of this showed little variation from the total population. Life science faculty were, as was expected, preferred by their students (3.88 mean rating). Life science students felt social science faculty were the poorest teachers followed by arts and humanities (3.01) and physical science (3.09). Although fewer teachers of life science students were female they received a slightly higher mean rating than their male counterpart.

Summary

Descriptive data relating to the purpose of this study helped to establish the personal characteristics of the student respondents, personal and behavioral characteristics of their teachers, and the influence of class size on student ratings. The descriptive data confirm that the study sample was truly a cross section of the colleges surveyed. Seventy-six different majors were represented in the study

with these being fairly well distributed between the four areas of (1) physical science, (2) arts and humanities, (3) life sciences, and (4) social sciences. Evenness of distribution between the sexes was apparent with 52.3 per cent males and 47.7 per cent females. The mean grade-point average of the students was 2.86 on a four-point scale and their average age was 22.7 years. The total sample consisted of 49 per cent single respondents and the remainder were married with the exception of one per cent who were divorced.

Taken as a whole the seniors in this study sample believed that the men and women who taught them at Oklahoma State University were just slightly better than average in teaching effectiveness. The descriptive data on the personal and behavioral characteristics of these teachers help determine the faculty variables that have a bearing on the way students rate their teachers.

Discriminating Variables

Certain faculty and classroom variables were more discriminating than others in the sense that they produced a wider range of student ratings when students were asked to react to subdivisions of these variables. Thus, age of faculty was a discriminating variable. Students rated faculty in their 30's as very effective teachers with faculty over 50 receiving the lowest ratings. Faculty in their 20's and 40's received middle ratings. Age and educational background of faculty were found to be related to student ratings of faculty when treated statistically.

All behavioral characteristics of faculty were found to be statistically related to student ratings of them. Therefore, the method

employed by a given teacher can be classified as a discriminating teacher variable with the lecture method most commonly used by teachers but with the discussion, self-paced, and inquiry methods preferred. The least popular method employed by Oklahoma State University faculty was the use of television followed by audio-tutorial and laboratory methods.

Taking attendance and assigning seats were rated similarly by the students in the sample with considerably lower ratings being given to faculty carrying out these practices. The presence or absence of these activities in a classroom may reveal something about the atmosphere of that classroom (whether it is relaxed or structured).

Knowledge of testing frequency of a teacher may also reveal an aspect of his general philosophy on teaching. Students preferred no tests followed by monthly tests and in greatest disfavor was the giving of one test per semester. Teachers testing on a monthly basis were the most prevalent, followed by teachers giving two tests per semester.

The items dealing with the use of study guides, the specification of grading criteria by faculty, and the use of audiovisual materials received similar responses. All three practices were preferred by students; however, the use of audiovisual materials was not as strongly preferred as the other two variables.

Results concerning the availability of teachers outside the classroom, their concern for students, and their major orientation (towards subject matter, towards student interest and development, or towards something other than these two) demonstrated student preference for teachers who were personally interested and concerned with their development. High mean ratings were given to faculty who were concerned

and available. Most teachers (50 per cent) were classified as subject-matter oriented, whereas only 30 per cent were student-oriented. Both orientations were given high ratings but student orientation was preferred (4.03 mean rating to 3.43).

When asked to compare their teachers in their major field to other teachers, students provided data that substantiate the belief that students prefer teachers in their own field of interest. However, when asked to compare professors in the four general areas of (1) arts and humanities, (2) physical sciences, (3) social sciences, and (4) life sciences no absolute preference was established. Slight preference was given to teachers in the arts and humanities with the poorest rating going to teachers in the physical sciences.

Another classroom variable considered in this study was the influence of class size on student evaluation of teacher effectiveness. This item proved to be discriminating inversely, with the mean rating increasing as the number of students in the class decreases.

Nondiscriminating Variables

Finally, it was found that one teacher variable did not elicit large variation in response from the students. This variable is the sex of the teacher.

Other Findings

The best Oklahoma State University teachers and the ideal teacher in the opinion of Oklahoma State University students were those who were primarily interested in students; conversely, the worst OSU teachers were poorly skilled in communications. When viewing the

descriptive data for choice of best and worst teachers as related to teacher variables of sex, age, educational background and major area of expertise, it was found that age of faculty, nonpossession of doctorate, and certain departmental affiliations may be related to student choice of best and worst teacher. Student characteristics were not found to be statistically related to student choice of best, worst, and ideal teacher characteristics.

Life science students as a whole differed from the total population on only a handful of items. The most interesting difference was their slight preference for female teachers, perhaps because they see so few of them in the life science area.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

An awareness of insufficient research in the area of teacher effectiveness has stimulated a study of student, teacher, and classroom variables that enter into student perception of teacher effectiveness.

Such investigations provide for consumer input in the evaluation process of instructional practices as well as for consumer opinion of what is effective teaching. A study such as this also takes into consideration accountability and recognizes, respects, and makes use of the unique contribution our undergraduates can make in the process of evaluation. Studies which attempt to evaluate instructional quality provide a present reading against which we might measure any future improvement.

The Literature in the Field

The literature on evaluation of effective teaching contains many discussions which bemoan the absence of an agreed-upon definition of effective teaching and others which suggest reasons for this situation. Articles allegedly describing good teaching are numerous, and many are sound, but most either largely represent the subjective judgment of individuals and committees or are based on studies using small samples in restricted circumstances. Reliable characterization of effective teaching is needed (Hildebrand, Wilson and Dienst, 1971).

In older studies reported in this literature survey students emphasized personality traits of effective teachers. However, more recent studies stress academic standards of the teachers and the subject matter being taught. Studies also point out that older students (seniors and graduate students) stress the academic over the personal. Students as a whole, however, prefer teachers possessing the characteristics of warmth, friendliness, preparedness, fairness, and a sense of humor.

Recent studies have also stressed the need for proper evaluation of effective college teaching in answer to the pressures of accountability. And, some of these studies defend and extol the students' (consumer) role in evaluation of instruction. Because the literature on effective teaching is so inconclusive and because any general findings need validation in a local situation, it is the purpose of this study to provide some basic information from a group of seniors at Oklahoma State University about their teacher and teaching preferences.

Purpose and Design of the Study

The present study was designed to obtain from seniors in the College of Arts and Sciences and College of Education important information regarding their perception of the quality of teaching they received at Oklahoma State University. The appraisals received included information pertaining to student characteristics, to personal and behavioral characteristics of their teachers, and to certain classroom variables which may have influenced the students' perception of teacher effectiveness. Also obtained in this study was information pertaining to characteristics of best, worst, and ideal teachers.

In order to fulfill the above purposes, hypotheses were formulated, a study instrument was designed to collect the necessary data, and various analyses made of the resulting data.

The Study Hypotheses

For purpose of comparison and to make the hypotheses more meaningful, the hypotheses investigated were divided into five major groups. The first group of hypotheses explores the relationship between certain student characteristics and the ratings they gave their teachers, to see if student characteristics affect their perceptions of faculty effectiveness. The second group explores the relationship between certain personal characteristics of faculty and the type of ratings given them by their students. A third group considers the relationship between certain behavioral characteristics of faculty and the type of ratings given them by their students. A fourth group investigates specific relationships that may exist as classroom variables and student perceptions of teacher effectiveness. A fifth group of hypotheses explores relationships between certain student characteristics and their choice of the qualities of their best, worst, and ideal teacher.

The Study Instrument

In order to obtain college seniors' thoughtful perceptions of their undergraduate experience and to find out the frequency and quality of various instructional practices they received, a four-page printed questionnaire (8½ by 11 inches) was designed in the spring of 1972. This was sent to 573 students designated as seniors in the College of Education and 1,022 students designated as seniors in the College of

Arts and Sciences, who were scheduled to graduate in May of 1972. In order to insure that the percentage of returns would be high, two follow-up mailings were used with those students not responding to the first mailing. The three mailings yielded a 70 per cent return from graduating seniors.

Analysis of the Data

All responses to the questionnaire were carefully studied and analyzed. The responses to the questionnaire were coded and analyzed with the aid of computer tabulations. Tests of the first 20 hypotheses, using the analysis of variance technique to determine significant difference among the groups, aided in interpreting the study data. Duncan's Multiple-Range test was useful in interpreting significant difference among sub-groups of these hypotheses. The hypothesis test utilizing the chi-square statistic was used for hypotheses pertaining to the fifth group.

Results of the Study

The findings of the study will be summarized under four headings, relating to (a) student characteristics and ratings given teachers by these students, (b) personal and behavioral characteristics of faculty and student ratings of these faculty, (c) specific classroom variables and student ratings of the teachers of these classes, and (d) student characteristics and these students' choice of qualities of their best, worst, and ideal teacher.

Student Characteristics and Ratings Given Teachers

1. The average Oklahoma State University senior in the two colleges studied is 22.7 years old, had a 2.86 grade-point average for four years, is more likely to be male (52.3 per cent) than female (47.7 per cent), and could either be married (50 per cent) or single (49 per cent) rather than divorced (1 per cent). The female student in the College of Education (67.7 per cent) is more likely married, and the male student in Arts and Science (63.4 per cent) is probably single.

2. This average Oklahoma State University senior thought his teachers were above-average. Using a five-point scale that went from one (poor) to five (excellent) he chose a mean rating of 3.3 for his teachers. This rating was uniform for Education as well as Arts and Science majors, and neither sex of the student nor his grade-point average affected the ratings.

3. The 671 seniors who responded were from social science departments (269), arts and humanities (209), physical sciences (108), and life sciences (90). These major areas of study were related to student ratings. Social science students were the most critical, followed closely by arts and humanities majors. Both physical and life science majors gave higher ratings to all Oklahoma State faculty.

4. Age of students was also related to their ratings with older students being less critical of teachers than younger students.

Personal and Behavioral Characteristics of Faculty

1. Just as the major of the student was related to their ratings, the area in which faculty taught was related to the ratings they received. Teachers in arts and humanities received the highest ratings, followed by teachers in social sciences. Teachers in the physical and life science areas received lower ratings. However, when asked to contrast teachers in their majors with all other teachers, the former received higher ratings. The lower ratings given teachers in the physical and life sciences must have come from students who major in other areas.

2. Age of the teacher was related to student ratings. Teachers between 30-39 years of age were rated the highest, whereas older teachers (50-65 years old) received the lowest ratings. Rated in the middle were teachers who were 20-29 and 40-49,

3. Although students seem to prefer teachers with a doctorate over those without one, the sex of the teacher did not affect their ratings.

4. The teaching method used by the teacher helped greatly to polarize student ratings of teachers. A very high rating was given to those teachers who engage students in discussion, who use self-paced materials, or who employ the project or inquiry strategy. Middle ratings were given teachers who lecture principally, who conduct laboratories, or who employ the audio-tutorial method. The lowest rating was given to teachers in televised courses. The ratings ranged from a 3.82 for discussion to 1.99 for television. Some significant differences existed between students of the two colleges.

5. Oklahoma State seniors greatly prefer teachers organized enough to care for their needs. Thus teachers who employed study guides and specified objectives (51.6 per cent) were rated significantly higher than those who did not. Likewise, teachers who specified in advance a grading criteria (74.3 per cent) were accorded higher ratings, as were teachers who prepared and used audiovisual material (42.0 per cent). In this same vein, teachers who kept regular office hours (57.8 per cent) were preferred significantly over those who did not.

6. However, Oklahoma State seniors do not like teachers to so overstress organization that a relaxed atmosphere is lost. Teachers who assign seats and take regular attendance were not rated as highly as those who did not. These differences were significant. Also significant is the fact that teachers who give no tests are preferred over teachers who give tests. Surprisingly, if a teacher gives tests, he should do it often. The lowest ratings were given teachers who test only once a course, whereas significantly higher ratings were given those who test monthly, bimonthly, or weekly.

7. "People who like people" would seem to make the best teachers in the opinion of the study seniors. They gave a significantly higher rating to teachers who were student rather than subject-oriented, and some of the highest ratings were reserved for those teachers who were genuinely concerned for students and their progress. Unfortunately only 43.9 per cent of Oklahoma State teachers were thought to have this concern.

Classroom Variables and Student Ratings of Teachers

1. Only about nine per cent of the classes had less than 20 students, whereas close to 30 per cent of the classes had 50 or more students. Approximately one fourth of the classes had from 30-39 students. Less than one fifth of the classes had 20-29 students, and another fifth had 40-49 students.

2. Class size was inversely related to student ratings with the highest ratings (4.28) going to the small classes, and the lowest rating (2.32) going to the largest classes.

Student Choices of Best, Worst, and Ideal Teachers

1. Students most commonly cited these qualities in the "best" teacher they had at Oklahoma State University: (a) interest in students, (b) good personality, (c) interest in subject matter, (d) ability to make subject interesting, and (e) objectivity in presenting subject matter and in dealing with students. Their "ideal" teacher would have similar qualities, except for the fact that "objectivity" would replace "good personality" in importance.

2. The "worst" teachers at Oklahoma State, as viewed by students had (a) poor communication skills, (b) poor personalities (with lack of enthusiasm cited most often as the reason), (c) lack of organization, (d) lack of objectivity, and (e) little interest in students.

3. The sex, age, grade-point average, and major field of study of students did not affect their choice of the characteristics of best, worst, and ideal teachers.

4. Although the student variables selected for this study were

not related to student choices of best, worst, and ideal teachers, some student variables are important. This is evidenced by the fact that the same teachers identified by name as the "best" teachers for some students were also cited as the "worst" teachers by other students.

5. Faculty variables were better related to the choice of best, worst, and ideal teachers. Teacher sex was not one of these discriminating variables. However, age was, with teachers who are 30-39 years old cited most often as the "best" teachers and those 50-65 cited most often as the "worst". Likewise, a teacher with a doctorate has a better chance of being designated as a student's "best" teacher, but one without a doctorate has a greater likelihood of being designated as a student's "worst" teachers.

6. One final faculty variable, the departmental affiliation of the faculty, presents a clouded picture. The departments that provide the "best" teachers were in this order: education, history, English, sociology, and psychology. Those that provide the "worst" teachers were in this order: English, mathematics, education, sociology, and psychology. We might conclude in general that students chose their "best" and "worst" teachers from those departments in which they take many courses. Mathematics may provide one exception to this general rule.

Conclusions

1. Oklahoma State University seniors prefer teachers who are student-oriented. Student-oriented characteristics predominated over subject-oriented characteristics in student choices of best and ideal teacher qualities. Likewise, significantly higher ratings were given

all teachers who were student rather than subject-oriented. The minority of teachers who were listed as genuinely concerned for students and their progress were accorded some of this study's highest ratings. Likewise student choice of preferred teaching methods and preferred class sizes reflect a leaning to student-oriented strategies and class size amenable to personalized teaching.

2. Oklahoma State University seniors prefer teachers who are organized but not overly structured. The high ratings given by these seniors to teachers who specify objectives and grading criteria, who keep office hours, and who are organized in their class presentation confirm the first part of this conclusion. The latter part is evidenced by student apathy for teachers who assign seats and who keep regular attendance.

3. The type of teaching strategy or method employed is highly related to student preferences. One of the most striking findings of this study was the high student distaste for television courses, and the high endorsement given to self-paced teaching and the student-oriented methods of discussion and inquiry. An unfortunate correlary is the low incidence of the highly preferred strategies and the concomitant high incidence of the lecture method with its mediocre rating.

4. Although there are certain qualities which all seniors prefer to see in actual or ideal teachers, the unique learning style of students is still quite evident, for the best teacher for one student may actually be a poor teacher for another. These qualities were found to be preferred by all students: (a) interest in students, (b) good personality, (c) interest in subject matter, (d) an ability to make subject matter interesting, and (e) objectivity in presenting subject

and in dealing with students. In spite of these general preferences some faculty members chosen as the best teacher by many students were also designated as a very poor teacher by an equal number of other students.

Suggestions for Further Study

1. A study similar to the present one could query students immediately following each year of college work to minimize error in their recall of four years of college and to determine if students rate differently depending upon years of college experience.

2. Since some teachers polarized students' opinion both negatively and positively, another area of investigation could be the use of psychological tests to determine psychological needs and dogmatism levels of the students. These findings or scores could then be related to student preferences in teachers.

Recommendations

This author would recommend the utilization and application of some of the study findings in the hiring practices and policies of colleges and universities, in the scheduling and structuring of course offerings, and in formulating theories on the teaching-learning process. These recommendations are supported from the results of this study.

Students prefer student-oriented teachers. An effective student-oriented teacher possess the characteristics of warmth, enthusiasm for students and subject matter, objectivity in dealing with students, and an outgoing personality. Resulting from these stated preferences by students is the recommendation that faculty possessing these

qualities be sought by college and university personnel when hiring faculty.

With constant pressures to increase class size due to increased enrollment, rising costs, and lack of facilities it is also recommended that student preferences for smaller classes be taken into consideration.

The individual teacher should consider the wide range of teaching strategies available to him. The selection of a teaching method should depend upon the teachers personality, the objectives of the course, and the type of student to be involved. The most commonly employed lecture method may not be the most effective and a more self-paced, inquiry-oriented strategy may be worthy of consideration when considering the stated preferences of the students.

It is also recommended that unnecessary structure in the classroom environment be eliminated. Structure resulting from teacher concern for the student's mental and emotional well-being is to be encouraged. The provision of study guides, the specification of grading criteria, and the use of audiovisual materials contributes to a preferred classroom environment as stated by students. However, the practices of taking attendance and assigning seats contributes to unnecessary classroom structure.

It is finally recommended that researchers and teachers not place too much emphasis on the importance of teacher characteristics in evaluating effective teaching because it is just as important to consider the psychological needs of the individual student. The statement that an effective teacher may not be effective for all students demonstrates the need to consider both factions when developing a

theory of effective teaching and effective learning.

Concluding Statement

This study has attempted to provide consumer input into the very important process of teaching evaluation. As institutions of higher education extend these efforts, they will recognize two of the major priorities of higher education in the 70's, (a) the primacy of the student and his right to contribute to educational goals, and (b) the primacy of rewarding the major function of educational institutions by remembering that they are teaching institutions.

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APPENDIX A

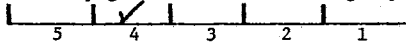
STUDY INSTRUMENT

O.S.U. TEACHING EVALUATION PROJECT
(Committee on Educational Innovation)

1. Please indicate, by short answer, what is:

_____ (Your major) _____ (Your age)
 _____ (Your sex) _____ (Your marital status)
 _____ (Your approximate grade point average) _____ (Your teaching field, if any)
 _____ (How many times have you changed your major)

2. You have had in your four years of college approximately 30-45 teachers. In this next section, kindly do two things: On the left side of the page, estimate the percentage of teachers in each of the groups listed, and secondly on the right side of the page evaluate them as a group on their teaching ability, for example:

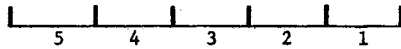
 would indicate that teachers in this group are better than average, but not excellent, since 5 is the highest rating and 1 is the lowest rating.

THE PERCENTAGE OF TEACHERS IN EACH GROUP

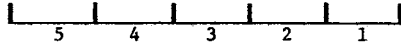
THE RATING OF TEACHERS IN THIS GROUP

Should total 100%

What percentage of your college teachers were OSU faculty (include faculty and teaching assistants, etc.) %



What percentage of your college teachers were faculty at another college . . . %
Name the college(s) _____

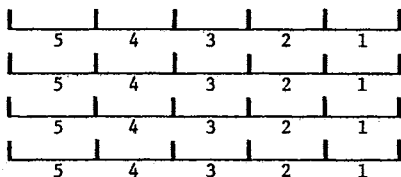


For the remaining questions answer only about faculty at Oklahoma State University.

a. What percentage of your O.S.U. teachers did you have as a:

Should total 100%

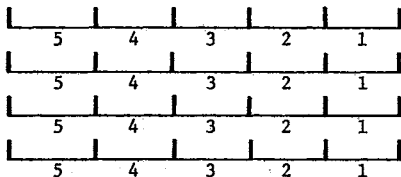
Freshman %
 Sophomore %
 Junior %
 Senior %



b. What percentage of your O.S.U. teachers were:

Should total 100%

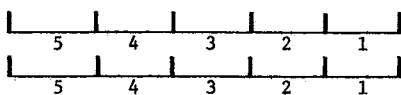
20-29 years old %
 30-39 years old %
 40-49 years old %
 50-65 years old %



c. What percentage of your O.S.U. teachers were:

Should total 100%

Males %
 Females %



PERCENTAGE

RATING

d. What percentage of your O.S.U. teachers used principally the following teaching methods:

| | | |
|-------------------|----------------------------|-------------------|
| Should total 100% | Lecture % | 5 4 3 2 1 |
| | Laboratory % | 5 4 3 2 1 |
| | Discussion % | 5 4 3 2 1 |
| | Self-Paced % | 5 4 3 2 1 |
| | Audio Tutorial % | 5 4 3 2 1 |
| | Television % | 5 4 3 2 1 |
| | Inquiry % | 5 4 3 2 1 |
| | Some Other % | 5 4 3 2 1 |

e. What percentage of your O.S.U. teachers:

| | | |
|-------------------|--|-------------------|
| Should total 100% | Took regular attendance % | 5 4 3 2 1 |
| | Did not take regular attendance. % | 5 4 3 2 1 |

f. What percentage of your O.S.U. teachers:

| | | |
|-------------------|----------------------------------|-------------------|
| Should total 100% | Assigned seats % | 5 4 3 2 1 |
| | Did not assign seats % | 5 4 3 2 1 |

g. What percentage of your O.S.U. teachers:

| | | |
|-------------------|---------------------------------------|-------------------|
| Should total 100% | Gave no tests % | 5 4 3 2 1 |
| | Gave one test a semester % | 5 4 3 2 1 |
| | Gave two tests a semester % | 5 4 3 2 1 |
| | Gave monthly tests % | 5 4 3 2 1 |
| | Gave bi-monthly tests % | 5 4 3 2 1 |
| | Gave weekly tests % | 5 4 3 2 1 |

h. What percentage of your O.S.U. teachers:

| | | |
|-------------------|--|-------------------|
| Should total 100% | Provided a study guide or written course objectives % | 5 4 3 2 1 |
| | Did not provide a study guide or written course objectives % | 5 4 3 2 1 |

i. What percentage of your O.S.U. teachers early in the semester:

| | | |
|-------------------|---|-------------------|
| Should total 100% | Specified criteria for evaluating students for grades % | 5 4 3 2 1 |
| | Did not specify criteria for evaluating students for grades % | 5 4 3 2 1 |

PERCENTAGE

RATING

j. What percentage of your O.S.U. classes had the following number of students:

| | | | |
|-------------------------|---|-------------------------|-------------------|
| Should total 100% | { | Less than 20. % | 5 4 3 2 1 |
| | | 20 - 29 % | 5 4 3 2 1 |
| | | 30 - 39 % | 5 4 3 2 1 |
| | | 40 - 49 % | 5 4 3 2 1 |
| | | More than 50. % | 5 4 3 2 1 |

k. What percentage of your O.S.U. teachers:

| | | | |
|-------------------------|---|---|-------------------|
| Should total 100% | { | Were teaching assistants working on a graduate degree % | 5 4 3 2 1 |
| | | Were other faculty members. % | 5 4 3 2 1 |

l. What percentage of your O.S.U. teachers:

| | | | |
|-------------------------|---|---|-------------------|
| Should total 100% | { | Used audiovisual materials (e.g. slides, overhead projection, etc.) % | 5 4 3 2 1 |
| | | Did not use audiovisual materials % | 5 4 3 2 1 |

m. What percentage of your O.S.U. teachers:

| | | | |
|-------------------------|---|--|-------------------|
| Should total 100% | { | Were readily available outside of class hours % | 5 4 3 2 1 |
| | | Were not readily available outside of class hours. % | 5 4 3 2 1 |

n. What percentage of your O.S.U. teachers:

| | | | |
|-------------------------|---|---|-------------------|
| Should total 100% | { | Were honestly concerned about you and your learning % | 5 4 3 2 1 |
| | | Were more concerned about things other than you and your learning % | 5 4 3 2 1 |

o. What percentage of your O.S.U. teachers:

| | | | |
|-------------------------|---|---|-------------------|
| Should total 100% | { | Evidenced a primary concern for subject content (used detailed notes, concerned with course organization, etc.) % | 5 4 3 2 1 |
| | | Evidenced a primary concern for student interest and development % | 5 4 3 2 1 |
| | | Seemed interested primarily in, neither subject content or student interests % | 5 4 3 2 1 |

APPENDIX B

MAILED MATERIAL
FROM
ACADEMIC VICE PRESIDENT



Oklahoma State University

VICE PRESIDENT FOR ACADEMIC AFFAIRS

STILLWATER, OKLAHOMA 74074
WHITEHURST HALL
(405) 372-6211, EXT. 6104

March 22, 1972

Dear Senior:

As a member of the senior class, you are practically an alumnus of Oklahoma State University. Your years of experience in the college classroom qualify you to help us in a most important task -- the evaluation of the quality of instruction at Oklahoma State University.

You can do this by taking 10 to 15 minutes and answering the enclosed questionnaire. After doing this, would you please fold and place the questionnaire in the enclosed campus envelope and deposit it where campus mail is received (for example, with the secretaries of either your department head or your advisor or at the Campus Post Office in the Student Union). No postage is necessary if mailed on campus.

Your comments will be held in confidence, will be greatly appreciated, and could lead to improved quality of instruction at your alma mater.

Thank you for your time and opinions.

Cordially,

J. H. Boggs
Vice President for Academic Affairs

JHB:mek

Enclosures

APPENDIX C

MAILED MATERIAL



Oklahoma State University

DEPARTMENT OF EDUCATION

STILLWATER, OKLAHOMA 74074
GUNDERSEN HALL
(405) 372-6211, EXT. 6461

April 14, 1972

Dear Senior:

Three weeks ago Vice President Boggs wrote and asked all seniors in your college to assist us in evaluating the quality of instruction you received during your four years of college. Many of your classmates helped us and promptly filled out and returned our questionnaire.

However, if this project is to be useful to us, the answers we receive must be representative of the seniors in your college. To have this representation, we may need your opinions.

Would you, therefore, take the 10 or 15 minutes necessary to fill out the enclosed questionnaire. As project director I will be happy to answer any questions you may have about the questionnaire; so feel free to call me at 372-6211, extension 6202 or 6203. After you have filled out the questionnaire, would you please refold and place it in the enclosed campus envelope and then deposit it where campus mail is received (for example, with the secretaries of either your department head or your advisor or at the Campus Post Office in the Student Union). No postage is necessary if mailed on campus.

We would greatly appreciate your comments, which will be held in confidence. If in some respects the quality of instruction you received at O.S.U. was good, help us see where; so that it may be continued. If in some respects, the quality was poor, help us find where and we can work to remove it. Thank you for your time.

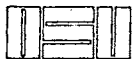
Cordially,

Robert T. Alciatore
Professor and Director
Center for Higher Education

RTA:js

APPENDIX D

MAILED MATERIAL



Oklahoma State University

DEPARTMENT OF EDUCATION

STILLWATER, OKLAHOMA 74074
GUNDERSEN HALL
(405) 372-6211, EXT. 6461

July 1, 1972

Dear Senior:

In May we had asked you to help us in our identification of the qualities of good and poor teachers. We realize that the hecticness of this time may have prevented you from helping us, but we are hoping you will now find the time to answer the enclosed questionnaire.

This study is designed to determine what you the student considers vital to effective teaching. The Committee on Educational Innovation hopes to use it as a basis for suggesting policy and resource allocation.

The completed questionnaire could be placed in the enclosed campus envelope and deposited wherever campus mail is received (including the post office in the student union). Whether or not you can find time to help us, may we congratulate you on your accomplishment these past four years and wish you well in the years ahead.

Yours sincerely,

Robert T. Alciatore
Professor and Director of the
Center for Higher Education

RTA:js

Enclosure

APPENDIX E
STATISTICAL TABLES

TABLE XXVII*

DUNCAN'S MULTIPLE-RANGE TEST: STUDENTS' MAJOR
AREA AND RATINGS OF FACULTY

| Group | 1 Soc. S. | 2 Phy. S. | 3 Life S. | 4 A & H | Group |
|-------|--------------|--------------|--------------|--------------|-------|
| | | 0.210 | 0.202 | <u>0.077</u> | 1 |
| | | | <u>0.009</u> | <u>0.134</u> | 2 |
| | | | | <u>0.125</u> | 3 |

DF = infinity
SE = 0.056
K = 4

*Numbers underlined in this and subsequent tables in this Appendix are those that were not significant at the .05 level of significance. The numbers over each of the groups on the horizontal axis of this and subsequent tables help to identify the same groups on the vertical axis. Explanation of this statistic is found on page .

TABLE XXVIII
 DUNCAN'S MULTIPLE-RANGE TEST: STUDENTS' AGE
 AND RATINGS OF FACULTY

| Group | 1 Under 22 | 2 23 to 25 | 3 25 & Over | Group |
|-------|---------------|---------------|----------------|-------|
| | | <u>0.002</u> | 0.257 | 1 |
| | | | 0.256 | 2 |

DF = infinity

SE = 0.056

K = 3

TABLE XXIX

DUNCAN'S MULTIPLE-RANGE TEST: AGE OF TEACHER
AND STUDENT RATINGS

| Group | 1 20-29 | 2 30-39 | 3 40-49 | 4 50-65 | Group |
|-------|------------|------------|--------------|------------|-------|
| | | 0.145 | <u>0.085</u> | 0.379 | 1 |
| | | | 0.230 | 0.524 | 2 |
| | | | | 0.294 | 3 |
| | | | | | 4 |

DF = infinity

SE = 0.036

K = 4

TABLE XXX
 DUNCAN'S MULTIPLE-RANGE TEST: TEACHING METHOD
 AND STUDENT RATINGS

| Group | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Group |
|-------|---|--------------|-------|--------------|--------------|-------|--------------|-------|-------|
| | | <u>0.113</u> | 0.634 | 0.560 | 0.214 | 1.199 | 0.496 | 0.282 | 1 |
| | | | 0.747 | 0.673 | <u>0.100</u> | 1.086 | 0.609 | 0.395 | 2 |
| | | | | <u>0.074</u> | 0.848 | 1.833 | <u>0.138</u> | 0.352 | 3 |
| | | | | | 0.774 | 1.759 | <u>0.064</u> | 0.278 | 4 |
| | | | | | | 0.986 | 0.710 | 0.495 | 5 |
| | | | | | | | 1.695 | 1.481 | 6 |
| | | | | | | | | 0.214 | 7 |

DF = infinity, SE = 0.061, K = 8

1 = lecture method, 2 = laboratory, 3 = discussion, 4 = self-paced,
 5 = audio-tutorial, 6 = television, 7 = inquiry, 8 = other.

TABLE XXXI
 DUNCAN'S MULTIPLE-RANGE TEST: TESTING FREQUENCY
 AND STUDENT RATINGS

| Group | 1 | 2 | 3 | 4 | 5 | 6 | Group |
|-------|---|-------|-------|-------|--------------|-------|-------|
| | | 1.098 | 0.716 | 0.224 | 0.339 | 0.537 | 1 |
| | | | 0.382 | 0.875 | 0.759 | 0.561 | 2 |
| | | | | 0.049 | 0.377 | 0.179 | 3 |
| | | | | | <u>0.116</u> | 0.313 | 4 |

DF = infinity, SE = 0.049, K = 6

1 = no tests, 2 = one test a semester, 3 = two tests a semester,
 4 = monthly tests, 5 = bimonthly tests, 6 = weekly tests

TABLE XXXII
 DUNCAN'S MULTIPLE-RANGE TEST: MAJOR ORIENTATION
 OF FACULTY AND STUDENT RATINGS

| Group | 1 | 2 | 3 | Group |
|-------|---|-------|-------|-------|
| | | 0.596 | 1.636 | 1 |
| | | | 2.232 | 2 |

DF = infinity, SE = 0.034, K = 3

1 = subject matter orientation, 2 = student interest orientation

3 = neither orientation

TABLE XXXIII

DUNCAN'S MULTIPLE-RANGE TEST: CLASS SIZE
AND STUDENT RATINGS

| Group | 1 | 2 | 3 | 4 | 5 | Group |
|-------|---|-------|-------|-------|-------|-------|
| | | 0.331 | 0.814 | 1.278 | 1.960 | 1 |
| | | | 0.482 | 0.946 | 1.628 | 2 |
| | | | | 0.464 | 1.146 | 3 |
| | | | | | 0.682 | 4 |

DF = infinity, SE = 0,035, K = 5

1 = under 20, 2 = 20-29, 3 = 30-39, 4 = 40-49, 5 = 50 and over

TABLE XXXIV
 DUNCAN'S MULTIPLE-RANGE TEST: AREAS OF COURSES
 AND STUDENT RATINGS

| Group | 1 | 2 | 3 | 4 | Group |
|-------|---|-------|--------------|-------|-------|
| | | 0.410 | <u>0.054</u> | 0.245 | 1 |
| | | | 0.356 | 0.165 | 2 |
| | | | | 0.192 | 3 |

DF = infinity, SE = 0.037, K = 4

1 = social science, 2 = physical science, 3 = life science, 4 = arts and humanities.

APPENDIX F

CHI-SQUARE DATA

TABLE XXXV

THE RELATIONSHIP BETWEEN STUDENT CHARACTERISTICS AND STUDENT
CHOICE OF BEST, WORST AND IDEAL TEACHER

| Hypothesis | Size of Table | D.F. | Chi-Square Value | Thres- hold |
|---|------------------|------|---------------------|----------------|
| 1. Student sex as related to choice of best teacher | 2 x 5 | 4 | 6.8 | 9.5 |
| 2. Student sex as related to choice of worst teacher | 2 x 5 | 4 | 4.8 | 9.5 |
| 3. Student sex as related to choice of ideal teacher | 2 x 5 | 4 | 3.5 | 9.5 |
| 4. Student age as related to choice of best teacher | 3 x 5 | 8 | 7.0 | 15.5 |
| 5. Student age as related to choice of worst teacher | 3 x 5 | 8 | 5.8 | 15.5 |
| 6. Student age as related to choice of ideal teacher | 3 x 5 | 8 | 4.7 | 15.5 |
| 7. Student grade point average as related to choice of best teacher | 5 x 5 | 16 | 14.0 | 26.3 |
| 8. Student grade point average as related to choice of worst teacher | 5 x 5 | 16 | 13.7 | 26.3 |
| 9. Student grade point average as related to choice of ideal teacher | 5 x 5 | 16 | 18.8 | 26.3 |
| 10. Students' major area as related to choice of best teacher | 4 x 5 | 12 | 14.4 | 21.0 |
| 11. Students' major area as related to choice of worst teacher | 4 x 5 | 12 | 9.2 | 21.0 |
| 12. Students' major area as related to choice of ideal teacher | 4 x 5 | 12 | 12.8 | 21.0 |

APPENDIX G

CODE KEY FOR TEACHER CHARACTERISTICS

CODE KEY FOR TEACHER CHARACTERISTICS

1. GENERAL KNOWLEDGE: general intelligence, knowledge of subject matter.
2. WELL EDUCATED: possession or nonpossession of doctorate degree.
3. INTEREST IN SUBJECT: enthusiasm for subject, interest in teaching and in student learning, interest in role of teacher.
4. MAKES SUBJECT INTERESTING: innovative, entertaining, not boring, used good audiovisual materials.
5. KNOWLEDGE OF STUDENTS: understanding, could relate to students.
6. TEACHES HIGHER COGNITIVE LEVEL: makes one think, teaches something of value, challenging.
7. INTEREST IN STUDENTS: warm, individual attention, listens to students.
8. AVAILABLE: gives outside help, has time for students, keeps office hours.
9. GOOD PERSONALITY: enthusiastic in general, non-hostile, confident, friendly.
10. GOOD SENSE OF HUMOR
11. COMMUNICATES WELL: explains clearly, lectures well, no annoying habits.
12. NEAT APPEARANCE
13. OBJECTIVE: fair, dependable, open-minded, consistent.
14. INFORMAL-RELAXING: no strict rules, no assigned seats or attendance taken.
15. MATURE: not too young, vigorous (not too old).
16. HUMBLE: not conceited, not self righteous, not condescending.
17. ORGANIZED: prepares classes, used study guides, good classroom management.
18. PROFESSIONAL: high ideals, not too easy on grades, concerned that subject is learned.

2
VITA

Margaret Luken Alciatore

Candidate for the Degree of

Doctor of Education

Thesis: THE RELATIONSHIP OF STUDENT, FACULTY, AND CLASSROOM VARIABLES
TO THE RATINGS UNIVERSITY SENIORS GIVE FACULTY

Major Field: Higher Education

Biographical:

Personal Data: Born in St. Cloud, Minnesota, October 27, 1943, the daughter of Frank C. Luken and Olga C. Knudson; married Robert T. Alciatore, July 27, 1968; bore two daughters, Ann Mignonne Alciatore (1969) and Elizabeth Marie Alciatore (1970).

Education: Graduated from Yankton Senior High School in Yankton, South Dakota in 1961; attended the College of St. Theresa in Winona, Minnesota and Mount Marty College in Yankton, South Dakota; received the Bachelor of Arts Degree from Mount Marty College in 1965 with a major in Biology; was designated an Outstanding Young Woman of America in 1966, attended a National Science Foundation Workshop at the University of Oklahoma in the summer of 1966; received the Masters of Science Degree with a major in Zoology from Oklahoma State University in 1969; and completed requirements for the Doctor of Education degree at Oklahoma State University, Stillwater, Oklahoma in May, 1973.

Professional Experience: Graduate Teaching Assistant in the Department of Zoology at Oklahoma State University, 1966-1967; Biology Teacher, O'Gorman High School in Sioux Falls, South Dakota, 1967-1968; Biology Teacher, C. E. Donart High School in Stillwater, Oklahoma, 1968-1969; Instructor of Histology in the Department of Physiological Sciences, Oklahoma State University in Stillwater, Oklahoma, 1972.