



The determination of the criteria of effective teaching as perceived by teachers and students in Bozeman Senior High School in Bozeman, Montana  
by Samorn Sucharit

A dissertation submitted in partial fulfillment of the requirements for the degree of DOCTOR OF EDUCATION

Montana State University

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Abstract:

The public has expressed an interest and concern in connection with the increased costs of education. Consequently, the question has arisen to whether the input of public money into educational institutions is obtaining the desired results or outcomes. This question centers around the concept of educational accountability which has a direct relationship to teacher effectiveness.

There have been many proposals forthcoming concerning evaluating teaching effectiveness. Among these proposals are the following methods which have been suggested by various educators. For example, the critical incident technique, interaction analysis in the classroom, the rating method, the observation method, the standardized test of student achievement. Recently, supervision of objectives and performance objectives to evaluate teaching effectiveness were recommended.

Some educators stated that the components of teaching ability were knowledge of subject matter; and technique of teaching and personality. Some educators proposed using student gains as a criterion to measure teaching ability. However, other educators argued against using student gains as a basis for evaluating teaching effectiveness. Teaching method, using multiple evaluators, using multiple bases for evaluation, using product, process and presage criteria to evaluate teaching effectiveness also have been proposed.

This research was conducted to determine the perceptions of teachers and students concerning the product, process and presage as the criteria of effective teaching. A 34-item questionnaire was developed as an instrument to obtain the data needed by the researcher. The 34 items in the questionnaire included 9 product, 12 process and 13 presage criteria. The senior high school in Bozeman, Montana was selected as a main resource for this investigation. Forty-nine teachers and two hundred fifty-three students responded to the instrument.

The results of the investigation revealed that product, process and presage criteria were not perceived differently by the teachers and students. It was also found that the process criteria received the highest ranking as it related to the degree of effective teaching. In addition, it was found that there was a positive relationship between the perceptions of teachers and students concerning the ranking of the degree of importance of the 34 criteria. Finally, it was found that the teachers perceived the product criteria as the most difficult to measure, while the second and third most difficult criteria to measure were the process and the presage criteria respectively.

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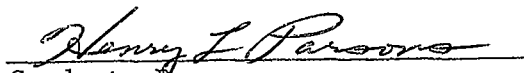
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## ABSTRACT

The public has expressed an interest and concern in connection with the increased costs of education. Consequently, the question has arisen to whether the input of public money into educational institutions is obtaining the desired results or outcomes. This question centers around the concept of educational accountability which has a direct relationship to teacher effectiveness.

There have been many proposals forthcoming concerning evaluating teaching effectiveness. Among these proposals are the following methods which have been suggested by various educators. For example, the critical incident technique, interaction analysis in the classroom, the rating method, the observation method, the standardized test of student achievement. Recently, supervision of objectives and performance objectives to evaluate teaching effectiveness were recommended. Some educators stated that the components of teaching ability were knowledge of subject matter; and technique of teaching and personality. Some educators proposed using student gains as a criterion to measure teaching ability. However, other educators argued against using student gains as a basis for evaluating teaching effectiveness. Teaching method, using multiple evaluators, using multiple bases for evaluation, using product, process and presage criteria to evaluate teaching effectiveness also have been proposed.

This research was conducted to determine the perceptions of teachers and students concerning the product, process and presage as the criteria of effective teaching. A 34-item questionnaire was developed as an instrument to obtain the data needed by the researcher. The 34 items in the questionnaire included 9 product, 12 process and 13 presage criteria. The senior high school in Bozeman, Montana was selected as a main resource for this investigation. Forty-nine teachers and two hundred fifty-three students responded to the instrument.

The results of the investigation revealed that product, process and presage criteria were not perceived differently by the teachers and students. It was also found that the process criteria received the highest ranking as it related to the degree of effective teaching. In addition, it was found that there was a positive relationship between the perceptions of teachers and students concerning the ranking of the degree of importance of the 34 criteria. Finally, it was found that the teachers perceived the product criteria as the most difficult to measure, while the second and third most difficult criteria to measure were the process and the presage criteria respectively.

## Chapter 1

### INTRODUCTION

Because of the increasing costs of education and demand for educational accountability, the public has questioned whether the input of money into educational institutions has obtained the desired outcomes. In any discussion of the topic of educational accountability, the issue of teacher effectiveness maintains a prominent position. (Coleman 1973:3)

Concurrently, educational administrators have sought more viable evaluation procedures to objectively judge matters of promotion, release, or renewal of teachers' contracts, while teachers have asked to provide input into these judgmental procedures based on their perception of what constitutes effective teaching. Another aspect of educational accountability involves student assessment of teaching effectiveness. Jenkins and Bausell (1974:572) noted that:

For the teacher, the notion of accountability quickly translates into an assessment of the quality of his instruction and the concomitant selection of criteria by which one will judge his effort. Since the accountability movement centers on teacher effects, it seems only just to consult teachers regarding their views on teacher effectiveness, in particular, on criteria they use to evaluate their own effectiveness. We suspect that discrepancies in conceptions of teacher effectiveness may be at the root of the strong feelings raised by the accountability issue. Uncovering these conceptions may serve to modify the approach taken by accountability advocates.

According to Jenkins (1974:572), Harold Mitzel in his contribution to the 1960 edition of the Encyclopedia of Education Research,

categorized the measures utilized to evaluate teaching effectiveness into three criteria labeled product, process and presage. (1) Product criteria, when teachers are judged by their effectiveness in changing student behavior, the judge is employing product criteria. The teacher is judged on the basis of a measurable change, in what is viewed as his product, student behavior. It can be assumed that measures of growth in skills, knowledge of subject matter, and attitude which can be logically or empirically attributed to the teacher's influence constitute acceptable data in the product category. For gains in knowledge of subject matter one might use such measures as standardized achievement test, end-of-lesson, or unit quizzes. Student performances which could be taken as indicators of self-acceptance, of attitude toward school subjects or toward learning in general, and of respect for others and their opinions might qualify as effective goals and thus also fall within the product category. If there is some confusion about the product category, it probably arises not so much from the notion of using student change as a criterion as from the difficulty in gaining consensus of what products are the appropriate domain of the school.

(2) Process criteria, when teacher evaluation is based upon classroom behavior, either the teacher's behavior, his students' behavior or the interplay of teacher/student behavior, the judge is using process criteria. The process behaviors chosen to measure are

believed to be worthwhile in their own right and thus are not necessarily related to product criteria. Some variables upon which teachers could be rated are their verbal behavior, methods, classroom control and individualization of instruction. Students might be rated for their verbal behavior, attentiveness, and conformity to classroom routine. Teacher/student interaction might be judged for rapport and climate. (3) Presage criteria, when teacher evaluation is based upon one's personality or intellectual attributes such as industry, adaptability, intelligence, character, and his performance in training, his knowledge of achievement such as marks in education courses, success in student teaching, national teacher examination, knowledge of educational facts or his inservice status characteristics such as tenure, years of experience or participation in professional organizations, the judge is employing presage criteria.

According to Ellena (1961:foreword), it is difficult to determine who is a good teacher and upon what basis judgments are formed. These are familiar questions in every part of the country. Probably no aspect of public education has been discussed with greater frequency and with deeper concern by both lay citizens and educators than teacher competence such as how to define it, how to measure it, how to reward it, how to detect and remove obstacles to its achievement. Ellena (1961:foreword) further stated that:

From New York to Hawaii, from Texas to Alaska, people are seriously asking that classroom teachers, school

administrators, and members of boards of education begin to study teacher competence. Responding to this insistent request, three associations, the American Association of School Administrators, the Department of Classroom Teachers of the National Education Association, and the National School Boards Association, have joined together to study the cluster of complex questions about teacher competence -- questions which are at the very heart of educational policy, administrative leadership, and the day-to-day instruction in the more than a million classrooms in this country.

The present study attempted to determine teachers' and students' perceptions of the criteria which should be used to assess teaching effectiveness.

#### Statement of the Problem

Due to the demands for educational accountability and the lack of definite studies in this area and in an effort to consider teachers' and students' perceptions in matters concerning the evaluation of effective teaching, the problem of this study was to survey the attitudes of teachers and students in a senior high school and thus provide school administrators with indices of effective teaching that coincide with teacher and student perceptions. There were three sub-categories of the main problem in this study. First, what was the degree of importance of the criteria as indices of effective teaching; second, what was the degree of difficulty in measuring the characteristics of effective teaching; and third, what relative value should be placed on characteristics of product, process, and presage criteria?

### Need for the Study

In addition to reporting the result of this study to school officials, and adding another dimension to the body of information about assessing teacher effectiveness, the researcher felt a personal need for information on the perceived characteristics of effective teaching to improve teacher training programs in his native country, Thailand. Prior to beginning graduate studies in the United States of America, the researcher taught in a teacher training college in Bangkok, Thailand. It was hoped that this study would provide insights and information to help him and other Thailand college instructors, to institute changes in teacher training programs. McNeil (1971:35) indicated the need for further study as follows:

More than one-half of the nation's teachers report no confidence in their school system's program of teacher evaluation. Student teachers are unhappy with the vague criteria for assessing their qualifications for entry into the profession.

Thomas (1971:1) supported the need for the study of effective instruction. He stated:

The task of identifying effective teachers, or effective teaching is crucial to teacher education, to teacher selection, to teacher performance, and ultimately to the survival of the human society. Yet today no general agreement exists as to what constitutes effective teaching, and no standards of teacher effectiveness are commonly agreed upon.

According to Mitzel (1960:1485), upon the assumption that the

most appropriate criteria of teacher effectiveness are those which have relevance to significant education outcomes, it is critical as to which outcomes are selected. Critics of present-day education like Pestor, Hutchins and Riesman have exhorted educators to pay more attention to the development of students' intellectual powers. It is clear that leaning toward one or the other philosophical position regarding the appropriate goals of education will undoubtedly influence the selection of criterion measures of teacher effectiveness. We need much precise, painstaking research in teacher effectiveness oriented toward a variety of educational situations. We need research in field situations (functioning classrooms) with massive samples of teachers and students. We need research in laboratory situations, as Robinowitz and Travers suggest, with small samples and careful control over experimental learning conditions. Perhaps, most of all, we need a comprehensive theory of teacher behavior and learning to channel the research efforts that undoubtedly will be undertaken. A contemporary research effort relative to teacher effectiveness compared with that engaged in forty years ago suggests that little progress has been made toward theory formulation. Although some encouraging beginnings have been made in conducting teacher-competence research within the framework of an explicitly developed theory, none of the research in this area has made maximum use of unifying theoretical conceptions from

learning, group dynamics, psychotherapy or cultural anthropology. Ryans' discussion of the importance of making continued attempts to develop a research guided theory seems well taken.

#### General Questions to be Answered

General questions to be answered in this study:

1. What were some of the indices of a demand for educational accountability?
2. What were some of the milestones in the development of teacher evaluation during the last sixty years?
3. What were some of the newer approaches and concepts of teacher evaluation?
4. What were the major strengths and weaknesses of evaluation by outcomes?
5. According to teacher perceptions, to what degree were these characteristics effectively measured?
6. What relative value should be placed on characteristics of product, process and presage criteria?
7. Did student perceptions of effective teaching significantly differ from teacher perceptions?
8. What was the degree of importance of each criteria as an index of effective teaching?

### General Procedures

The general procedures to be followed in this study were:

1. To conduct a thorough review of literature and related research as it pertained to evaluating teacher effectiveness.
2. To develop a survey questionnaire to be administered to the entire teaching staff of Bozeman Senior High School and to a random sampling of the student body of that school in order to determine teacher and student perceptions of the characteristics of effective teaching.
3. To report the results of this survey in tabular and narrative form.
4. To statistically compare the perceived relative values of utilizing these criteria.
5. To statistically compare teacher and student perceptions of the characteristics of effective teaching.
6. To determine degree of difficulty of measuring the criteria.

### Limitations

This study was limited in the following ways:

1. The majority of the sources considered in the review of related literature was from the Montana State University Library and ERIC inter-library loan resources.

2. The survey was limited to the teaching staff and student body of one large secondary school and therefore generalities derived from the results of the survey had limited applications to other school systems. However, it was assumed that the data gained from this study might be added to other studies on evaluating teaching effectiveness.

#### Definition of Terms

For the purpose of this thesis, certain key concepts are used in the following contextual settings:

Accountability. The theory that teachers and school systems may be held responsible for actual improvement in pupil achievement and that such improvement is measurable through tests of teacher effectiveness constructed by outside agencies. (Good 1973:5-6)

Behavioral objectives. The aims or objectives of education stated as actual performance criteria or as observable descriptions of measurable behavior. (Good 1973:393)

Critical thinking. Thinking that proceeds on the basis of careful evaluation of premises and evidences and comes to conclusions as objectively as possible through the consideration of all pertinent factors and the use of valid procedures from logic. (Good 1973:608)

Effective teaching. Use of a plan for instruction or presentation which causes a desired change in the learners' behavior. (Good 1973:589)

Evaluation criteria. The standards against which a person, a group, a procedure, or an instrument may be checked. (Good 1973:220)

Evaluation instrument. Any of the means by which one obtains information on the progress of the learner and the effectiveness of instruction; quantitative and qualitative data, objective measures, subjective impressions, tests, observation, anecdotal records, case studies and sociometric methods may all serve as instruments for deciding whether instrumental objectives have been attained. (Good 1973:221)

Hierarchy. Any graded organization, whether mental, physical or social, in which each rank (except the highest) is subordinate to the ranks above. (Good 1973:280)

Product criteria. When teachers are judged by their effectiveness in changing student behavior, the judge is employing product criteria. The teacher is judged on the basis of a measurable change in what is viewed as his product, student behavior. What constitutes acceptable products, or changes, has never been made altogether clear. But it would seem that measures of growth in skills, knowledge of subject matter and attitude which could be logically or empirically attributed to the teacher's influence constitute acceptable data in the product category. (Jenkins and Bausell 1974:572)

Process criteria. When teacher evaluation is based upon classroom behavior, either the teacher's behavior, his student's behavior,

or the interplay of teacher/student behavior, the judge is using process criteria. The process behaviors chosen to measure are believed to be worthwhile in their own right and thus are not necessarily related to product criteria. Some variables upon which teachers could be rated are their verbal behavior, methods, classroom control, and individualization of instruction. (Jenkins and Bausell 1974:572)

Presage criteria. When teacher evaluation is based upon one's personality or intellectual attributes (industry, adaptability, intelligence, character), his performance in training, his knowledge of achievement (e.g. marks in education courses, success in student teaching, national teacher examination, knowledge of education facts) or his inservice status characteristics (e.g. tenure, years of experience, or participation in professional organizations), the judge is employing presage criteria. (Jenkins and Bausell 1974:572)

Teacher merit system. A plan by which promotion, increase in pay and general advancement within a school system are determined by the degree of efficiency with which the teachers perform their duties; may be combined with other plans, such as experiences or training evaluation, in arriving at salary increases or promotion. (Good 1973:363)

### Summary

Due to the increased costs of education, the public has expressed

a concern for and increased effort in educational accountability. In any discussion of the topic of educational accountability, the issue of teacher effectiveness maintains a prominent position. School administrators have sought more viable evaluation procedures while students and teachers have asked to provide input into evaluation procedures based on their perceptions of effective teaching. The matter of assessing teacher effectiveness is a complex issue and necessitates considering the criteria relative to effective teaching.

Due to the demands for educational accountability and in an effort to consider teachers' and students' perceptions in matters concerning evaluation, the problem of this study was to survey teacher and student attitudes in a senior high school and thus provide school administrators with indices of effective teaching.

In addition to adding another dimension to the bank of information concerning teaching effectiveness, the researcher hoped to utilize understandings gained from the results of this study to improve teacher training in his native country, Thailand.

The first procedure in this study was to conduct a review of literature and related research concerning teacher evaluation. This will be found in chapter two.

## Chapter 2

### REVIEW OF RELATED RESEARCH AND LITERATURE

This chapter will review the methods of evaluation of instruction that have been employed. The researcher believed that the findings would provide suggestions as to the best method or instrument to measure and evaluate effective teaching. The materials are arranged chronologically to make it convenient for the reader.

#### Demands for Educational Accountability

Because of increased costs of education, serious questions concerning public education have been raised. It has been asked if the increased educational cost has resulted in increased productivity. Burrup (1974:55) asked two questions involving public expenditures in education as follows:

The spiraling cost of education and the changing social climate of the country have combined to raise serious questions concerning public education. Have the increased costs resulted in proportionately increased productivity? Has education, with an increase of 1,000 percent in expenditures while the gross national product was increasing 400 percent (1947 to 1969) really justified such vast expenditure?

These unanswered questions have resulted in less public confidence in schools. Moreover, the public has refused to accept professional explanations for increasing the cost of education. In addition, public dissatisfaction has resulted in taxpayer dissatisfaction, teacher and student militancy, and social unrest in schools.

The traditional confidence that the average citizen had in his schools has decreased. (Burrup 1974:55)

Development of Teacher Evaluation from 1912 to 1956

According to Ayres (1912:307), the final citadel in which the old guard is now making its last stand consists of the objection that the most important elements of true teaching can never be measured.

Ayres stated further that:

As school executives make practical application of the newer scientific tests, no fact stands out with more impressive distinctness than that the teachers whose classes make the best records are the teachers who are the most truly successful in the shaping of character.

To answer the problem in question, Ayres (1912:308) referred to the scientific method as follows:

Simple as it sounds, this change from asking "What results should we get?" to asking "What results we are getting?" is the keynote of the whole scientific method in education. To answer the question in its new form means the development of units of measurement, and when these are secured the standards of attainment will work themselves out automatically.

In discussing educational efficiency, Ayres (1912:310) stated:

Education today wishes to be efficient, as industry is efficient; education wishes to know what the product is, and to gauge the time, quantity, and value elements.

The National Education Association (NEA) (1932:5) stated the demand for skilled teaching as follows:

Teaching, if it is to be skilled, and no other kind should be acceptable, demands a trained, experienced, and competent teaching personnel. The product of the public

school will in many cases continue to be disappointing until our children are instructed by teachers properly qualified for this important service. Making good citizens is a skilled service and cannot be performed by unskilled workers.

In order to measure teaching and to get qualified personnel, the NEA (1932:41) said that:

Authorities are generally agreed, however, that although the rating of teachers may be a useful supervisory device, it has not yet been sufficiently refined to permit any but rather rough distinctions between different grades of teaching ability. For this reason the use of rating scales in the administration of the regular salary schedule cannot be undertaken with great confidence in the outcome. Teachers are particularly resentful of anything akin to the capricious in a matter so important to them as their salaries.

Hartmann (1933:7) discussed the concern for human efficiency by saying:

The ideal of human efficiency would be the production of the maximum output of the highest quality in the shortest time, with the least expenditure of energy and with the maximum satisfaction.

In applying the above principle to efficient teachers he stated:

The ideally efficient teacher is the one who can accomplish the largest number of important and socially desirable changes in the greatest number of pupils in the shortest possible time, with the least expenditure of energy and with the maximum satisfaction in the learning process and its outcome by all concerned.

Hartmann (1933:14) noted that measuring the product of a teacher's effort was the greatest difficulty the researcher faced for the result was not seen in a week, not in a month, nor in a year, but some ten to twenty years after the initial experience. Hartmann

(1933:16) stated further that:

A sober, critical review and appraisal of the impasse facing research in this field has been made by Symonds. He notes that the high correlation which Boyce found between general rating for teaching efficiency and such items as "development of pupils" (.88), "growth of pupils in subject-matter" (.87), and "attention and response of class" (.86) suggested to other workers the use of pupil achievement as a measure of teaching efficiency. This implied the adoption of the Jesuit principle that faith without works is dead. "After all, the final criterion of any activity is the results produced. Traits in the teacher are valuable as measures of teaching efficiency only when they are effective in producing desirable changes of learning in pupils." Such doctrine is both true "Westernism" and good behaviorism. Consequently, the proposal that the accomplishment ratio be employed as a means of estimating efficiency was inevitable. As developed by Franzen, the formula read very simply:

Teaching efficiency - Final AR - Initial AR

In 1935, Lancelot (1935:14-16) investigated teaching efficiency by comparing the grades of engineering students obtained from sixteen teachers at Iowa State College in the years 1920-1928. According to Lancelot, the number of superior and average students taking courses under a specific teacher were known. The average of all the college grades of the groups was computed; including both the estimated grade and the actual grade of students taking courses from each professor. The means of the estimated grades were subtracted from the means of the actual grades of each group and the probability that other similar groups would exceed departmental norms were calculated. According to Lancelot, fifty-two superior students taking courses under teacher A obtained a probability of .996, while 28 superior

students taking courses under teacher J obtained a probability of .002. This research showed that of a large number of superior groups taking Mathematics I under teacher A, 996 out of each 1,000 could be expected to receive a subsequent higher mathematic average than those normally received by comparable student groups in this course. With other groups taking the course under teacher J, for example, only 2 out of 1,000 would probably do so. Probabilities as to better-than normal results obtained under other teachers lie between these extremes.

Fifteen years later Domas (1950:109-110) stated the problem of recognizing and rewarding merit in teaching as follows:

The efficiency of teachers may be gauged either by the Accomplishment Quotients of the pupils or by the judgment of supervisors. These proposals were opposed by teachers.

According to Domas (1950:111), a group of supervising principals in a class in supervision at the John Hopkins University prepared a list of factors which evidenced skills in teaching; the list consisted of only observable, improvable factors. The major division into which the factors were classified and listed were the following: (1) changes brought about in the pupils; (2) changes noted in the teachers; (3) visible changes in the classroom. Producing changes in pupils, measured in terms of educational objectives, was the ultimate criterion of teaching success.

Another point noted by Domas (1950:106) concerning components of

good teaching ability was that:

An analysis of the opinions of a large group of employers of teachers concerning the factors involved in good teaching indicated that the three components of teaching ability are: (1) knowledge of subject matter; (2) technique of teaching; and (3) personality.

He further stated that the rating scale proposed by a committee of Chicago teachers included and covered the following areas: (1) instructive qualifications, (2) professional aspirations and opinions, (3) general practice, (4) personal qualifications, and (5) achievement of pupil growth.

On the topic of "For what is the teacher paid?" Domas (1950:109) stated as follows:

Relationship between salary, and experience, training and teaching load were studied in groups of 7159 women teachers and 1520 men teachers throughout the state of Ohio. The data were tabulated according to sex of teachers, type of school, i.e., elementary and secondary, and rural and urban. (1) In all types of school positions and for both sexes, except for men in the one room rural school, there is a relatively high correlation between salary and experience. (2) In all types of schools and for both sexes, there is a relatively low correlation between salary and training. (3) The correlation between salary and teaching load is low in nearly every case. (4) From one type of position to another, salary increases are accompanied by positive changes in the amount of training.

Further Comas (1950:109) noted that several studies in the evaluation of faculty services at the college level were examined to determine qualifications which were of primary importance for ranking the faculty of teachers' colleges. Qualifications selected were the following: (1) teaching ability; (2) scholarship and scholarly

ability; (3) experience; (4) personal qualities; (5) membership in learned societies; and (6) capacity for departmental and college administration. Domas noted that in order to measure teaching ability, researchers discussed teaching methods, processes, personality, and results.

In 1951 Jensen (1951:84) studied the critical requirements for teachers which included: (1) The area of Personal Qualities referring to the emotional stability of the teacher as revealed by the interaction of teachers with pupils and associates, and also behavior that reflected honesty, fairness and objectivity. (2) The area of Professional Qualities included the classroom practices of teachers as they related specifically to the learning process. Included therein are the instructional skills of the teachers, knowledge of subject matter taught, organization of instructional materials, ability to diagnose individual and group weaknesses, and ability to provide necessary remedial instruction. (3) The area of Social Qualities referred to the teacher's face-to-face relationship with students and associates, and included ability to understand and appreciate the feelings of others, employment of the democratic approach in human relationships, and friendliness.

Remmers (1952:242-248) identified the definition of teacher effectiveness by noting that criteria of teacher effectiveness contained two parts. They were criterion and effectiveness. Criterion

was defined as a standard against which a measurement is made in estimating the validity of the measurement. A criterion is always concerned with one or more specified dimensions of whatever is being measured; one criterion dimension may be the length of the table and another may be its weight. In identifying effectiveness as a criterion dimension of teachers, he implied that the purpose of the measurement or appraisal of teachers was to estimate whether they will produce desired amounts and types of changes in pupils' behavior.

Remmers explained that effectiveness is the degree to which an agent produces effects. There are three categories of effect, in terms of the object affected, (a) the pupil, (b) school operations, and (c) the school-community relationship. The effects on pupils that are relevant as criterion dimension of teacher effectiveness are the extent to which educational objectives are attained.

Flanagan (1954:354) described the development of a method of studying activity requirements which he called the critical incident technique. The technique grew out of the studies carried out in the Aviation Psychology Program of the Army Air Force in World War II. The success of the method in analysing such activities as combat leadership and disorientation in pilots resulted in its extension and further development after the war. This developmental work was carried out primarily at the American Institute for Research and the University of Pittsburgh. The five steps included in the critical

incident procedure as most commonly used at the present time are:

(a) Determination of the general aim of the activity. This general aim should be a brief statement obtained from the authorities in the field which expresses in simple terms those objectives to which most people would agree. (b) Development of plans and specifications for collecting factual incidents regarding the activity. The instruction to the persons who are to report their observations need to be as specific as possible with respect to the standards to be used in evaluating and classifying the behavior observed. (c) Collection of the data. The incident may be reported in an interview or written up by the observer himself. In either case it is essential that the reporting be objective and include all relevant details. (d) Analysis of the data. The purpose of this analysis is to summarize and describe the data in an efficient manner so that it can be effectively used for various practical purposes. It is not usually possible to obtain as much objectivity in this step as in the preceding one. (e) Interpretation and reporting of the statement of the requirements of the activity. The possible biases and implication of decisions and procedures made in each of the four previous steps should be clearly reported. The research worker is responsible for pointing out not only the limitations but also the degree of credibility and the value of the final results obtained. (Flanagan 1954:354-355)

It should be emphasized that critical incidents represent only raw data and do not automatically provide solutions to problems. However, a procedure which assists in collecting representative samples of data that are directly relevant to important problems such as establishing standards, determining requirements, or evaluating results should have wide applicability.

The application of the critical incident techniques which have been made to date are discussed under the following nine headings:

(a) measures of typical performance (criteria); (b) measure of proficiency (standard samples); (c) training; (d) selection and

classificaton; (e) job design and classification; (f) operating procedures; (g) equipment design; (h) motivation and leadership (attitudes); and (i) counseling and psychotherapy.

Flanagan (1954:355) summarized the critical incident technique as follows:

The critical incident technique, rather than collecting opinions, hunches and estimates, obtains a record of specific behaviors from those in the best position to make the necessary observations and evaluations. The collection and tabulation of these observations make it possible to formulate the critical requirements of an activity. A list of critical behavior provides a sound basis for making inferences as to requirements in terms of aptitudes, training, and other characteristics. It is believed that progress has been made in the development of procedures for determining activity requirements with objectivity and precision in terms of well-defined and general psychological categories. Much remains to be done. It is hoped that the critical incident techniques and related developments will provide a stable foundation for procedures in many areas of psychology.

According to Barr (1955:262), he stated Ryans and Wandt identified the following factors for teacher behavior: tendency to be sociable, businesslike, reactive, tolerant, and pleasing. In addition they identified one factor of pupil behavior, tendency to participate, which was linked with certain teacher behavior.

Barr further stated that Hearn, in case studies of seventy-seven teachers, found skill in human relationships to be important; Cook found that teacher attitudes toward children correlated significantly with teacher-pupil relationships. Reed found a relationship beyond chance expectancy between the teacher's effectiveness in the classroom

as evaluated by the students and that aspect of the teacher personality which permits him to be a person who accepts other people, Anderson found high school teacher morale related to high pupil achievement; and Erickson, from a factor analysis of teaching ability considered the following to be related to teacher efficiency:

(a) positive character, (b) bohemian attitude, and (c) well controlled character stability.

Barr further stated that Montross found positive correlation between certain objective measures of temperament, such as speed of tapping, reaction time, fluency, and right- and left-hand coordination, and teacher success; Page and Travers found a triad of Rorschach patterns associated with patterns of behavior considered desirable by supervisors; Simpson, Gaier, and Jones concluded that resourcefulness is a function of attitudes and habits of applying existing knowledge and skills in practical situations rather than a function of teacher knowledge and information; Schultz and Ohlsen found that outstanding student teachers were creative and enthusiastic, had genuine interest in students, and organized their work well; Adaval found that India's teachers with advanced degree showed knowledge superior to that of teachers with lesser degree, and Allman found prospective teachers superior to other students in such basic competencies as mental ability, reading comprehension, and achievement in elementary-school subjects.

According to Barr (1955:263) rating scales of one form or another receive extensive attention. He stated that Kessler and Hosley constructed five-point rating scales for evaluating nursery school teachers. They found these, under the conditions in which they were used, to correlate .71 with ranks assigned by supervisors.

Barr (1955:263) indicated that Berkshine and Highland, Harding and Long, and Ryans recommended the forced-choice rating scale. He stated that Berkshine and Highland concluded from a study of such a scale that it is probably better to combine with the forced-choice rating procedure some of the more conventional rating forms. Further Barr stated that Daval and Chatterjee found, with carefully constructed rating scales, a high agreement among those who assess the abilities of trainees in a teacher education institution, and Guelso, and Hobson and Schlenk reported plans for evaluating military instructor training.

A number of tests of qualities or characteristics of teachers were proposed. Among these was the Minnesota Teacher Attitude Inventory which has been subjected to extensive study. Barr indicated that Leeds, using "Expert" ratings as the criterion in rating principals and students, found that the ratings of principals and "Experts" were more closely in agreement than either of these when compared with pupil reactions. He concluded that pupil ratings make a unique contribution to teacher evaluation.

Further Barr (1955:263) indicated that Wrightstone and others used sociometric techniques to study and improve intra-staff acceptability of teacher isolates. They found a close association of the data that occurred with teachers popularity; and Jerecke explained the construction of a teaching judgment test to evaluate teaching success. From a study of forty-one and fifty-five teachers graduated from the University of West Virginia with one to fifteen years of experience he concluded: (a) that teaching experiences seemed to have a connection with teaching success, (b) that some unnamed factors as measured by the Bernreuter Personality Inventory affected teaching success, (c) that scholastic ability as measured by a master's examination and the teaching judgement test were related to teaching success. (Barr 1955:263-264)

In 1956 Nelson (1956:24) stated as follows:

It is possible that effectiveness in teaching is made up of several aspects, namely, disciplinary control, teacher-pupil relationship, and instructional excellence. It is also possible that teachers may display different degrees of these aspects in different school situations. If this is true, then a teacher who might be considered to be an excellent one in one school might not be as effective in another school in which a different aspect of teaching was emphasized.

According to Nelson (1956:57) there were rather high interrater consistency coefficients among the ratings of teachers by pupils, by supervisors and by observers, the interrater consistency coefficient obtained from his studies being .62, .54, and .79 on disciplinary control, teacher-pupil relationship and instructional excellence

respectively. These results, as viewed by Nelson, were sufficiently reliable as he stated:

In view of the interrater consistency of the scores obtained for the three measuring instruments it must be concluded that these instruments are sufficiently reliable to be used in the evaluation of effectiveness for both groups and individual teachers.

#### Development of Teacher Evaluation from 1957 to 1969

Beginning in 1957, the State of North Carolina began studying the use of merit systems. During the 1957 session of the General Assembly of the State of North Carolina, the problem of teacher salary was discussed. Following this, the Board of Directors of the North Carolina Education Association notified the State Board of Education of their concern with and interest in the merit rating system. During the year 1958, the State Board of Education of North Carolina was in session and raised the question concerning the merit plan for teachers. As a result of the session, a committee was authorized to study the problem in question.

In 1959, according to McPhail (1967), the General Assembly of the State of North Carolina discussed the problem of merit pay again and adopted two resolutions pertaining to teacher evaluation. The first resolution directed the State Board of Education to study teacher evaluation, rating and certification. The second resolution, the General Assembly empowered and authorized the governor to appoint a commission to study the merit pay system.

In the year 1960, Ryans (1960:1490), studying teacher effectiveness, proposed the probable correlates of teacher effectiveness in the contemporary United States as follows:

The following generalizations regarding the relationships between teacher characteristics, as predictors, and teacher effectiveness, as a criterion abstracted from various criteria measures reported in the literature, appear to be in order.

Measured intellectual abilities, achievement in college, general cultural and special subject matter knowledge, professional information, student teaching marks, emotional adjustment, attitudes favorable to students, generosity in appraisals of the behavior and motives of other persons, strong interest in reading a literary matters, interest in music and painting, participation in social and community affairs, early experiences in caring for children and teaching (such as reading to children, taking a class for the teacher), history of teaching in family, size of school and size of community in which teaching, cultural level of community, and participation in avocational activities, all appear to be characteristics of the teacher which are likely to be positively correlated or associated with teacher effectiveness in the abstract.

In the same year Mitzel (1960:1482) discussed the important attributes of criterion measures by referring to Steven's discussion of operationism. He pointed out that concepts are defined in terms of the operations that produced them. Thus, teacher effectiveness as a concept has no meaning apart from the criterion measures or operational definition of success as a teacher. These measures should possess four basic attributes: (1) relevance, (2) reliability, (3) freedom from bias, and (4) practicality.

Relevance as a criterion attribute is a product of a rational analysis of the job functions and the job objectives. In so far as a

criterion measure reflects the behaviors required in the achievement of job objectives, it is relevant. For some types of production work, such as operating a punch press, the job objectives are fairly easy to specify and are often self-defining. Indeed, a simply count of the number of units produced by an operator during a specified period will often suffice as the directly relevant job criterion. On the other hand, analysis of tasks such as teaching does not readily yield criteria which are directly relevant to the job functions. As a consequence, we have often had to depend upon direct and fragmentary definitions of teaching success. The difficulty stems, in part, from lack of agreement among educators on a hierarchy of goals and objectives for teaching. Teachers in elementary school, for example, have been asked to work for changes in such different types of student behavior as basic intellectual skills, attitudes, personal-social adjustment, cultural appreciations, and health habits. This proliferation of school goals without accompanying agreement as to which ones are more important and which ones are less important, has made the task of selecting relevant teacher effectiveness criteria almost impossible.

Mitzel (1960:1485) discussed the issues pertinent to criterion selection as follows:

The day-to-day demands of training, hiring, and promoting teachers have forced the educational community to accept, either implicitly or explicitly, certain criteria of effectiveness. Criterion decisions, whether they involve personality attributes of teachers, number of years of experience, number of credits in graduate studies, or growing in basic skills of

students taught, all involve some commitment on the following issues: (a) Is teacher effectiveness multi-dimensional or unidimensional? (b) Should teaching effectiveness be evaluated primarily against the intellectual cognitive goals of education or primarily against affective attitudinal goals?

For the past fifty years, most research and administrative practice seems to have been based on the assumption that teaching competence is a unitary trait. Although it has long been felt that there are degrees of effectiveness among teachers, many educators still act on the assumption that the teacher who stimulates the greatest student growth in one basic skill will stimulate the greatest growth in other skills, as well as problem-solving, social adjustment, and other educational objectives (23, 24, 25). It is also frequently assumed that the effective teacher, however defined, is equally effective with all children. The weight of the evidence, though fragmentary, preponderantly supports a multidimensional view of teaching effectiveness.

During the year 1961-1963, the study of the merit system was made by the commission of the state of North Carolina. There were about twelve thousand educators and leaders at the state level involved in this study. Approximately, four hundred thousand dollars was spent in an effort to determine the degree of superiority in teaching and to pay the teachers in terms of their effectiveness.

The results revealed in the report to the 1965 General Assembly indicated that (1) a uniform statewide program of merit pay was not feasible, (2) a merit pay program at the local level would be possible under certain provisions, and (3) the instructional improvement at the state level should be continued and strengthened. (McPhail 1967)

In the year 1961 the American Association of School Administrators (1961:15) stated the following about the measure of teacher

effectiveness:

If the purpose of teaching is to bring about desired changes in pupils, the obvious measure of teacher effectiveness is the extent to which the teacher actually produces such changes. Unfortunately many difficulties intrude upon this happy prospect: (1) it is difficult to measure pupil growth; (2) it is difficult to determine precisely how much of the change can be directly attributed to the teacher.

AASA (1961:15) discussed the variety of methods used in evaluating teaching effectiveness. Among the variety of methods that have been used are achievement quotients, raw gain, residual gain, and other measures which are usually variants of the residual gain procedure. The achievement quotient, patterned after the IQ test was designed to take into account both achievement and ability. Achievement age (such as in arithmetic) is divided by mental age to yield a quotient which is then expressed as a percent (i.e., multiplied by 100). Scores less than one hundred presumably indicate below-expected achievement. Achievement for a class is then expressed as an average of achievement quotients. The method has obvious arithmetical as well as logical limitations, so that it is now rarely used. Achievement quotients are intimately connected with limitations in the tests used; individuals with high achievement near the test ceiling usually tend to get lower IQ scores than those with low achievement scores.

In studies prior to 1940, raw gain was probably the most widely used measure of pupil change. This measure was obtained by subtracting a pretest score (given at the beginning of the evaluation period) from

a final test score (an equivalent form of the same test given at the end of the evaluation period). If the groups were matched initially, both on knowledge of the subject and intellectual ability, some of the contaminating factors were said to be reduced. Such matching may be possible under certain controlled study conditions, but these conditions were not usually present in typical teaching situations, where the rule was wide variability within classes and situations that faced teachers. The practice then was to ignore this problem.

In recent studies some form of residual gains are most frequently applied as procedures for studies of pupil gains. Residual gain provides for some equating among the factors that potentially influence results. A common type of residual gain is the estimate (usually by means of regression equations) of the progress that students in the class should make, and then to compare difference between expected and actual progress. This method has been formalized in a procedure known as the analysis of covariance. Other methods include linear response surfaces, contour analysis, and, at a much more direct level, the comparison of regression coefficients (usually the regression of initial score on final score) within various classrooms.

While most investigators agree that student gains are the ideal criterion measures, many difficulties intrude. The difficulty of constructing sufficiently accurate and comprehensive measure makes this a costly procedure. It is not surprising that the frequency of

the student gains studies is rather low. The great discrepancies in the findings of investigators who use student gains criteria emphasize the complexity of their relationship to instructor activity. Student gains studies depend for definition upon a set of goals toward which teaching is directed. These changes or goals are probably most economically stated in terms of changes in behavior, on the part of the students. Robinowitz and Travers (1953) and Ryans, as well as the reports of the Committee on Teacher Effectiveness, headed by Remmers (1952,1953) have presented cogent arguments for assessing teaching efficiency in the light of effect on students. These effects were variously called student gains, student growth, or student changes; they all, however, involved measurement of change in student behavior or a portion of student behavior that logically might be attributed to the influence of individual teachers.

There was a note by AASA (1961:23-33) that mastery of a subject did not necessarily make a successful teacher. Good grades in college and effective teaching appeared to be consistently related. There was some evident that teachers who had more professional knowledge as measured by the National Teacher Examination, for example, tended to be more effective teachers. There was evidence that teachers who had professional preparation were more effective than those who had not. From cross-sectional data, it appeared that teachers' rated effectiveness at first increased rather rapidly with experience and then

leveled off at five years or beyond. There was no substantial evidence that cultural background was significantly related to teaching ability. The relationship of socio-economic status to criteria of instructor effectiveness was low. AASA suggested, however, that those from higher groups usually have greater probabilities of success in life than those less fortunate. No particular differences have been shown when the relative effectiveness of men and women teachers have been compared. Despite some prejudice to the contrary, there appears to be no evidence that married teachers are in any way inferior to unmarried teachers. Attitude toward teacher and teaching as indicated by Yeager Scale, seems to bear a small but positive relationship to teacher success measured in terms of pupil gains. Instructors tend to overrate themselves. Self-rating shows negligible relationship with administrative ratings, students ratings or measures of student gains.

A study concerning rating by NEA (1964:5) stated:

Dissatisfaction has arisen with merit-rating programs because teachers felt that rating was too often based on the rater's unfounded opinion rather than on verifiable data, and, therefore, a rating was not an accurate measurement of teachers' work.

NEA (1964:31) proposed a basis for principals' evaluation of teachers as follows:

The two steps most frequently mentioned were observation of the teacher teaching in his classroom and conferences with the teacher. Making observations was reported by 93.4 percent of the principals for probationary teachers and 91.7 percent for continuing teachers. Having conference with the teachers

was reported by somewhat smaller percents -- 80.5 percent for probationary and 74.6 percent for continuing teachers.

According to the NEA (1964:32) principals were asked what methods they used to judge the quality of teachers' work when they did not make observations of teachers. This was not a checklist of questions; space was provided for nine replies in systems where written evaluations were not made. The responses were as follows:

Contact with teacher outside the classroom	24.9 percent
Pupil achievement record	15.1 percent
What parents say about teacher	7.4 percent
Reports from department heads, supervisors or other officials	4.6 percent
Teacher's professional activity and graduate work	2.4 percent
Appearance of the classroom	1.7 percent
Participation in extra curriculum activities	1.1 percent
Listening on the intercom	0.8 percent
Total using one or more of the above methods	35.6 percent

Biddle (1964:76) proposed the method to assessing and evaluating teachers as follows:

(1) Know what characteristics of teachers are amenable or available to observation; (2) decide upon a set of evaluative criteria - a set of values appropriate to the particular setting and often unique to the particular community or group (note that here we always are concerned with value judgments); (3) know something of the relationship of observable teacher characteristics to the criteria represented in the agreed-upon value system; (4) employ the most objective-reliable-available means of arriving at the assessments on which the evaluations will be based (usually involving the careful operational definition of the characteristics to be assessed plus training of the observers); and (5) employ advanced means of summarizing and synthesizing the assessments of teacher characteristics to generate over-all estimates that will be basic to the evaluation.

According to Biddle (1964:76) there were three major patterns of teacher classroom behavior that can be observed, they were:

(1) pattern X, warm, understanding, friendly versus aloof, egocentric, restricted teacher classroom behavior, (2) Pattern Y, responsible, businesslike, systematic versus evading, unplanned slipshod teacher classroom behavior, (3) Pattern Z, stimulating, imaginative, versus dull, routine teacher classroom behavior.

According to Biddle (1964:85-86), one may approach teacher evaluation by comparing "High" and "Low" assessed teacher. In one of the study researches in this area, an effort was made to identify personal or social characteristics differentiating groups of teachers receiving uniformly high and uniformly low trained-observer assessments on the three major patterns of teacher classroom behavior (X, Y, and Z).

It may be emphasized that making a judgment of "good" and "poor" about teachers is relative to the context in which the judgment is made, that is the behavioral objective of teaching, the characteristics of the pupil taught, and the value system of the judge.

Biddle (1964:86) further explained that with each teacher sample (elementary and secondary school teachers considered separately) the so-called "high" criterion group was selected so that it was comprised of teachers who received a composite observer assessment one standard deviation or more above the mean on each of the patterns X, Y, and

Z. The "average" group for each sample consisted of teachers whose composite observer assessment was between 0.2 of a standard deviation below the mean and 0.2 of a standard deviation above the mean on each of the three patterns. The low group for each sample was made up of teachers whose assessments placed them one standard deviation or more below the mean on each of the classroom behavior patterns. Observer assessments represented the judgments of all observers viewing and assessing a particular teacher.

Biddle (1964:197-198), by referring to Flanders, proposed another method of observation called "interactional analysis" in the classroom. This method can be used to quantify the quantitative aspects of verbal communication. The entire process becomes a measure of teacher influence because it makes the assumption that most teacher influences are expressed through verbal statements and that most non-verbal influence is positively correlated with the verbal.

In interaction analysis, ten categories are used to classify the statements of the pupils and the teacher at a rate of approximately once every three seconds. It has been found that an observer can be trained to categorize at this rate with sufficient accuracy.

The ten categories included seven assigned to teacher talk, two to student talk, and one to silence or confusion. When the teacher is talking, the observer decides if the statement is: (1) accepting

student feelings; (2) giving praise; (3) accepting, clarifying or making use of a student's ideas; (4) asking a question; (5) lecturing, giving facts or opinions; (6) giving directions; or (7) giving criticism. When a student is talking, the observer classifies what is said into one of two categories: (8) student response or (9) student initiation. Silence and confusion are assigned category (10).

#### Development of Teacher Evaluation from 1970 to 1976

Leichti's (1972) survey conducted in eight states revealed no merit pay plans were currently in effect. Among these, Kansas City and Pittsburgh reported that they had never had a merit pay provision in their salary structure.

It was reported further that the teachers' salaries were scheduled, and progress was normally a one-step increase until reaching the final step according to educational preparation.

However, Coleman (1972:3) suggested different purposes for teacher evaluation, as follows: (1) to stimulate the improvement of teacher performance, (2) to decide on reappointment of a probationary teacher, (3) to recommend a probationary teacher for permanent status, (4) to establish evidence where dismissal from the service was the issue.

In 1973, Popham (1973:67-68) suggested the following three widely used measures of teacher competence: (1) ratings, (2) systematic observations, (3) standardized tests of pupil achievement. Popham

stated further that there are four major steps in how a teaching performance test is used:

Step (1) the teacher is given one or more explicit instructional objectives and a sample of the measurement procedure to assess each objective, plus any necessary background information related to the objectives. Step (2) the teacher is given sufficient time to plan a lesson to accomplish the objectives. Step (3) the teacher then instructs a group of learners, previously identified as being unable to accomplish the given objectives, in an effort to have the learners achieve those objectives. Step (4) at the conclusion of the lesson the learners are measured with respect to their ability to accomplish the objectives, their performance serving as an estimate of the teacher's instructional skills.

According to Popham (1973:85) the two chief roles of a teaching performance test are instructional improvement and skill assessment. When a performance test is used for instructional improvement, the focus of the activity is on increasing the teacher's skill in promoting learner attainment of prespecified goals. No attempt is made to classify the teacher as weak or strong; the sole purpose of using the performance test is to help the teachers improve achievement of objectives. Teaching performance tests are used for skill assessment in order to discover which teachers are superior and which are inferior with respect to this particular competency, that is, the ability to accomplish prespecified instructional objectives.

The above studies show that there are many different opinions concerning teacher evaluation. Among these opinions, the merit pay plan system seems to be the core or the origin of other questions.

Subsequently, there have been many questions involving the evaluation of teaching, such as, what is teaching effectiveness, and what is to be the criteria for teaching effectiveness?

There have been several suggestions about how to evaluate effective teaching. Among these suggestions, researchers and educators have been interested in using rating scales to evaluating teacher characteristics, evaluating teacher competency, evaluating classroom interaction, evaluating methods of teaching, and observing the classroom and evaluating student gains. It seems to the researcher that student gains as a criterion of effective teaching has been repeatedly emphasized by many educators.

#### Weaknesses in Evaluating the Outcomes

Cardellichio (1974:1) argued against evaluation of teacher effectiveness by student gain as follows:

At the same time, evaluating teachers by student gains is an incomplete practice. For one thing, it is based on the questionable philosophical assumption that the ends justify the means.

Cardellichio stated further that evaluation by outcome alone has a series of practical weaknesses. Firstly, too long a time span exists to evaluate the gains students have made. The important goals of education are not realized over a long period of time. Secondly, the translation of outcome into behavioral terms can simplify outcome in such a way that learning is weakened. Thirdly, evaluation by

outcome can never be uniform because students vary from class to class and school to school. Assessing student gains neglects extraneous factors such as socio-cultural and school environment, administrative leadership.

Another research conducted by Jenkins (1974:573) revealed that the amount students learn was not particularly important in judging teacher effectiveness. The supporting research stated that:

Perhaps the most revealing aspect of the survey was the rating given to the criterion, Amount Students Learn. This criterion was not seen as particularly important in judging teacher effectiveness, at least relative to the other criteria rated; out of 16 criteria, Student Learning received only the eleventh highest rating.

One important conclusion of Jenkins (1974:573) that interests the researcher is:

Two teachers could not be compared using this criterion because their students may have markedly different abilities or dispositions.

#### Argument for Student Gains

McNeil (1971:15) stated that there has been a serious lack in evaluation of teaching outcomes due to opposition to experimenting on humans. Teachers have been accused of violating the ethics required of those who have been given responsibilities for others in not testing the result of teaching.

McNeil (1971:15-16) argued for student gains as follows:

A large school system had for years rated certain of its teachers as outstanding teachers of reading. When,

for a number of reasons, the school district was forced to examine the progress of pupils in their ability to read, it was discovered that the majority of pupils under the direction of the highly rated teachers had not learned to read. How could a teacher be judged outstanding when pupils were not achieving? The answer was simple. The teacher was being judged by the extent to which an ascribed role -- in this case a method for teaching reading -- was being followed. Did the teacher have three reading groups? Were the wall charts at the right height? Were the children using On Cherry Street at the right time of the year? Affirmative answers to questions of teaching procedure constituted successful teaching more than pupil attainment of specified competence in reading. Only now, in a climate of assessment, is the school district beginning to move from valuing of a particular method for teaching to attending to the results of that method and other methods which are being introduced. The superintendent now says to the teacher, "You are not required to follow a set of lockstepped procedures. You are free to design instructional strategies, to use a variety of materials and approaches -- but you are expected to get results."

#### New Approaches to Evaluating Teaching Effectiveness

Cardellichio (1974) stated that in order to evaluate teaching effectiveness one needs to consider methods and their relation to the teacher's learning goals and student performance. A principle for developing evaluative criteria is that the teaching method should be congruent with the outlined objective which a teacher presents to his supervisor.

In order to analyze the teaching method, the teacher's methods of questioning must be examined. A good question should stimulate a particular type of thinking. Bloom's taxonomy (1956) provides a convenient model for the analysis of the questions. Bloom stated that

there are six levels of thinking at the cognitive domain: Knowledge, comprehension, application, analysis, synthesis and evaluation.

A teacher who has established an objective requiring synthetic or evaluative thought must design methods appropriate to eliciting such responses.

According to Cardellichio (1974) another way to evaluate teaching effectiveness is through classroom interaction which may be either verbal or nonverbal. By classifying the interaction in the classroom according to interaction analysis, the teacher or observer is able to identify the kind of interaction taking place in the classroom. The assessment of the interaction may be used to uncover its congruence with the kind of outcome desired.

McNeil (1971) introduced supervision by objectives as a tool to evaluate teaching effectiveness. Supervision by objective is a process by which a supervisor and a teacher cooperatively design teaching strategies for changing the skills, competencies, or attitudes of his students. The agreement is drawn up before the teacher acts and is designed to counter the prevailing practice of trying to make an ex post facto judgment of ends. According to McNeil (1971:51-71) there are four phases in the improvement of instruction: preobservational conference, observation, analysis and strategy and post observational conference.

Another interesting innovation concerning evaluating teaching

effectiveness is presented by Jenkins (1974). Jenkins identified three categories which were employed as criteria for evaluating teaching effectiveness. The criteria referred to have been identified as product, process and presage. Product is clarified as student gains, process as a method of teaching and presage as the teacher's attributes. Jenkins's suggestions comprise the main ideas for this research.

#### Summary

The inspiration that forced the educators, the researchers and the legislature to devote their time and money to study the possibilities of evaluating effective teaching resulted from the public demands for "school accountability" and the increased costs of education. New approaches to evaluating teaching effectiveness had been proposed by many prominent educators and researchers such as Jenkins, McNeil and Cardellichio. Among these, student gains, performance objectives, teaching methods, questioning methods, classroom interaction, classroom observation, supervision by objectives, using product, process and presage criteria, using multiple evaluators, using multiple bases for evaluation had been proposed. This chapter has attempted to summarize this information.

In chapter three the procedure for conducting the research is presented.

## Chapter 3

### PROCEDURES

It was mentioned in chapter one that the general focus of this research would be to determine the perceived criteria of effective teachers who facilitate student teaching. Teachers and students of Bozeman Senior High School, Bozeman, Montana were compared relative to their opinion regarding teacher effectiveness.

In this chapter, the following topics were discussed: population description and sampling procedures; the method of collecting data; the method of organizing data; statistical hypotheses, method of analyzing data; precautions taken for accuracy; and a summary is given.

#### Population Description and Sampling Procedures

The population sampled in this study consisted of all teachers and students in Bozeman Senior High School, Bozeman, Montana. The student population was randomly sampled from all students in the school, whereas the total teacher population was used. Seventy teachers and two hundred eighty-five students were used. The student group was randomly sampled from grades ten through twelve. In order to obtain the appropriate sample size, the formula  $N_s = \frac{t^2 P \cdot Q / d^2}{1 + 1/N(t^2 P \cdot Q / d - 1)}$  (Cochran 1953:54) was used. From the above formula, NS is a needed sample, P and Q represent the proportions of the population (male: female), here represented by .5 and .5 respectively.

Setting  $t$  at 1.96 and  $d$  at .05 yields an estimated sample size where the researcher could be 95 percent confident that the result does not deviate by more than 5 percent from the population value.

If the total population of students ( $N$ ) is equal to 1,100 by substitution of the given values, the needed sample of 285 would be obtained.

#### Description of Investigation Categories

The research compared the perceptions of the teacher and the student groups in the following areas based on the responses to the questionnaire:

1. What would be the best criteria to employ to evaluate effective teaching, product, process or presage criteria?
2. What would be the degree of effectiveness for each criterion?
3. Do student perceptions of effective teaching characteristics differ significantly from teacher perceptions?
4. According to teacher perceptions, to what degree can these characteristics be effectively measured?

#### Methods of Collecting Data

The researcher designed the questionnaire as an instrument to determine the perceptions of the teacher and student groups concerning criteria of effective teaching in Bozeman Senior High School. Additionally, the instrument allowed for the collection of demographic and

school information that the researcher considers related to the purpose of this study.

The characteristics of effective teachers given in the questionnaire were carefully selected from various related literature. The method used to select these attributes was based upon three criteria of effective teachers: product, process and presage. These criteria were selected from the related literature. The sixteen criteria, used by Jenkins and Bausell, were all selected in order that part of the present study would replicate the study done by these two researchers. There was no identification as to their previous groups by product, process and presage criteria.

#### Methods of Organizing Data

The data was organized in table form. The tables were designed to present the following information.

1. The numbers and percentages of teachers and students who returned the questionnaires.
2. The demographic information concerning the respondents.
3. The perceptions of the teachers and students pertaining to the best criteria to be employed to evaluate effective teacher characteristics.

#### Statistical Hypotheses

The following null hypotheses were tested:

1. ( $H_0$ ) There are no significant differences in the perceptions of teachers and students regarding presage criteria of effective teachers.

2. ( $H_0$ ) There are no significant differences in the perceptions of teachers and student regarding process criteria of effective teachers.

3. ( $H_0$ ) There are no significant differences in the perceptions of teachers and students concerning product criteria of effective teachers.

4. ( $H_0$ ) There are no significant differences in the perceptions of teachers concerning the degree of difficulty in measuring product, process and presage criteria.

5. ( $H_0$ ) There is no relationship in the perceptions of teachers and students concerning the best criteria for utilizing the characteristics as an index to effective teaching.

All the hypotheses were checked at the .05 level.

#### Analysis of Data

In order to test the hypotheses stated, statistical methods and procedures were used. The data obtained from the questionnaire were organized and arranged in the following manner:

1. Total numbers, percentages and other details were presented in tables.

2. Observed frequencies and percentages were given in the tables where necessary.
3. The Chi square test of independence was used to test the significant differences of the perceptions between the teacher and the student groups.
4. In order to determine the relationship between students' and teachers' perceptions of the criteria of effective teaching, Spearman's Rho and the ranking of means were used.
5. The Kruskal-Wallis Test was used to determine whether or not teachers perceived a difference in the degree of difficulty in measuring product, process and presage criteria.

#### Precaution Taken for Accuracy

In order to guard against errors that normally occur, a double check was made on each computation, in compiling data and tallying the responses. The analysis of data was facilitated through the use of the SIGMA 7 computer at Montana State University and/or electronic calculators.

#### Summary

This research was done to determine the criteria for evaluating effective teachers as perceived by the teachers and students of Bozeman Senior High School. The population was limited to the school concerned. The student sample was randomly selected from grades 10 through 12 of

Bozeman Senior High School while the entire population of the faculty of the high school was used.

The instrument taken from selected attributes in the literature was administered to the student sample by the researcher. A standardized set of directions was followed. The data was dealt with through systematic statistical analysis. Correlation analysis and comparing means were used in order to determine the best criteria of effective teaching. Chi square was used to test the significant differences of the perceptions between the teacher and student groups. The five percent level of confidence was utilized as a significant difference level between the two variables. A double check was employed to guard against computation errors. In order to maintain accuracy, the computer and electronic calculator were used as deemed appropriate by the researcher.

Kruskal-Wallis Test was utilized to test the perceptions of the teacher group concerning the degree of difficulty in measuring the characteristics of effective teaching.

In chapter four, the description and analysis of data is presented.

## Chapter 4

### ANALYSIS OF DATA

#### Methods of Sampling and Number Sampled

The purpose of this study was to identify perceptions of teachers and students in Bozeman Senior High School as to the critical elements of effective teaching. This study also determined the perceived degree of effectiveness for utilizing these attributes as indices to effective teaching. In this chapter, the results of the survey, which was completed by the teachers and the students of Bozeman Senior High School, Bozeman, Montana have been described, analyzed and interpreted.

The data for this study were obtained from questionnaires returned by 49 teachers and 253 students in the sample. Some respondents, however, did not respond to every item on the questionnaire. Therefore, in some cases, the total number of replies varied from table to table.

In order to obtain a one hundred percent level of confidence, all the seventy teachers in the school faculty were taken as the population sample without use of a random sampling method. Forty-seven and twenty-three questionnaires were distributed to male and female teachers respectively. Subsequently, 35 or 74.46 percent of the male teachers and 14 or 60.86 percent of female teachers returned the questionnaires. Therefore, totally 49 or 70 percent of the teachers returned the questionnaires.

A proportional, systematic random sample of students was taken. The student population sample was drawn from all students of the school, a total of 1,100 students. In order to obtain 95 percent level of confidence, 343 students were drawn. Two hundred fifty-three students or 73.75 percent of the student population sample returned the questionnaires.

#### Characteristics of the Sample

The sex and grade distribution of the student population sample who returned the questionnaires is shown in Table 1. One hundred

Table 1

Distribution of Total Sample Population of the Students and Percentage of Returns of the Questionnaires by Grade and Sex

Grade	Number Distributed			Number Returned			Percent Returned		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
10th	91	50	141	56	43	99	61.54	86.00	70.21
11th	42	74	116	30	57	87	71.43	73.03	75.00
12th	38	48	86	24	39	63	63.16	81.15	73.26
Total	171	172	343	114*	139	253	66.66	80.81	73.76

\*Four male students did not fill out the grade level item.

forty-one questionnaire forms were distributed to the 10th graders which comprised of 91 and 50 questionnaire forms to male and female

students respectively. One hundred sixteen questionnaire forms were distributed to the 11th graders which comprised of 42 and 74 questionnaire forms to male and female students respectively. Eight-six questionnaire forms were distributed to the 12th graders, 38 to male and 48 to female students. Therefore, 343 questionnaire forms were distributed to the entire students which comprised of 171 and 172 questionnaire forms to male and female students respectively.

Ninety-nine students in grade 10, comprised of 56 male and 43 female students, returned the questionnaires. Eighty-seven students in grade 11, which included 30 and 57 male and female students, returned the questionnaires. Sixty-three students in grade 12 which included 24 male and 39 female students returned the questionnaires. Four male students did not indicate their grade level. Therefore, the total returns were 253 of which 114 were male students and 139 were female students.

When the total percent return was investigated, it was found that 73.76 percent of the questionnaires were returned which were comprised of 70.21 percent of the 10th, 75.00 percent of the 11th, and 73.26 percent of the 12th graders. When the sex was investigated, it was found that 66.66 percent of the male students and 80.81 percent of the female students returned the questionnaires.

Based on 70 teachers, the result of the teacher return is shown in the following table.

Table 2

Distribution of Total Sample Population of Teachers and Percentage of Returns of the Questionnaires by Sex.

Respondents	Number Distributed	Number Returned	Percent Returned	Total % Returned
Male Teachers	47	35	74.46	50.00
Female Teachers	23	14	60.86	20.00
Total	70	49		70.00

The teacher population sample who returned the questionnaire was distributed according to age group as shown in table 3.

Table 3

Distribution of Teachers Who Returned the Questionnaires by Age

Age Group	No. of Teachers	Percent
20-29	6	12.15
30-39	22	45.8
40-49	15	31.3
50-59	4	8.3
60 and over	1	2.1
Total	48*	100

Age  $\bar{X}$  = 39.55

\*One teacher did not fill out the age group item.

The teacher population who returned the questionnaires, as shown in table 4, had a 35 year range of teaching experience extending from one to thirty-six years of teaching experience. The mean years of teaching experience was found to be 13.17. Forty-six teachers provided available data for years of teaching experience, while 3 of them omitted such data.

Table 4

## Distribution of Years of Teaching Experience of Teachers

No. of years of teaching experience	No. of teachers	Percent
1	2	4.3
2	3	6.5
4	3	6.5
5	1	2.2
6	1	2.2
7	2	4.3
8	3	6.5
9	2	4.3
10	2	4.3
11	2	4.3
13	4	8.7
14	1	2.2
15	3	6.5
16	5	10.9
17	4	8.7
22	1	2.2
23	2	4.3
25	1	2.2
26	1	2.2
28	1	2.2
35	1	2.2
36	1	2.2
Total	46*	100

$$\bar{X} = 13.17$$

\*Three teachers did not fill out years of teaching experience item.

### Treatment of Data

The data compiled from the questionnaires were subjected to a chi square test of independence. This statistic was chosen because the investigator wished to determine if the responses were independent of the categories of students and teachers. The Spearman's Rho was used to determine if any significant correlation existed between teachers' and students' perceptions regarding which criteria would be the most effective. The Kruskal-Wallis Test was utilized to determine if the teachers perceived a difference in the degree of difficulty in measuring product, process and presage criteria. All the computed statistical values were compared to the appropriate critical value at .05 level of significance.

### Presentation of Data

Column I of the questionnaire was concerned with the degree of importance of the characteristics of teaching. There were two primary purposes to the entries in column I. First, it was intended that the respondents indicate the degree of importance of each criterion of effective teaching. Secondly, based upon the results of the responses indicated, the mean of each criterion was ranked by the researcher in order to determine which criteria were perceived as being the best criteria of effective teaching in terms of product, process or presage.

Column II of the questionnaire was designed primarily to determine the perceived degree of difficulty to measure the criteria of effective teaching on product, process and presage criteria. Considering the level of difference of experience and maturity, it was appropriate that column II was designed to be responded to by the teacher group alone.

In order to meet the assumption that 80 percent of the expected cell values have a frequency of 5 or greater, most of the zero cells were collapsed. Consequently, degrees of freedom were lost. Therefore, the degrees of freedom for each criterion were not equal. In all cases, however, the degrees of freedom ranged from 4 to 6.

To present, analyze and summarize the data, it was appropriate to begin with the chi square test of independence between student and teacher population on product, process and presage criteria.

#### Chi Square Test of Independence Between Student and Teacher Population on Product, Process and Presage Criteria

In order to test the perceptions of the teachers and students pertaining to whether or not they have different opinions relative to the product, process and presage criteria of effective teaching, the chi square test of independence between the teachers and students on items dealing with product, process, and presage was carried out.

Table 5, table 6, and table 7 present the results of the chi square test of independence between teacher and student populations

on items dealing with product, process and presage criteria respectively.

Table 5 illustrates the results of the chi square test of independence between students and teachers on items dealing with product criteria. Out of the nine items, four were not significantly different. Table 5 also illustrated the comparison of the perceptions of 9 characteristics of effective teaching of teachers and students of each criterion. The following analyses were the comparison of the perceptions of teachers and students regarding the degree of effectiveness of 9 characteristics of effective teaching of product criteria group.

Table 5

Chi Square Test of Independence Between Student and Teacher  
Populations on Items Dealing with Product Criteria

Item Number	Characteristics of effective teaching	$\chi^2$	df
2.	Influence on student's behavior	19.186*	5
15.	Amount learned by the students	2.266	6
17.	Student growth in critical thinking	12.485*	4
19.	Student growth in problem-solving	12.868*	4
21.	Student growth in evaluation of problems in daily life	0.769	4
23.	Teacher's influence on establishing constructive student attitudes toward school	20.653*	4
25.	Teacher's influence on establishing constructive student attitudes toward learning	13.663*	5
30.	Teacher affects the establishment of constructive student attitudes toward friends	12.352	6
33.	Teachers develop in student constructive attitudes toward teachers	9.735	6

Critical value of  $\chi^2$  df = 4, significant at .05 level is 9.49

Critical value of  $\chi^2$  df = 5, significant at .05 level is 11.07

Critical value of  $\chi^2$  df = 6, significant at .05 level is 12.59

\*Significant at alpha = .05

Chi Square Test of the Teachers' and Students' Perceptions on Items  
Dealing with Product Criteria

Item 2: This item showed the comparison of the teachers' and students' perceptions of the degree of effectiveness concerning the influence on students' behavior as a criterion of effective teaching.

The chi square value of 19.186 was found to be significant at the .05 level. It meant that a significant difference existed in the perceptions of the teachers and the students concerning the criterion mentioned. The mode response of the teachers to the degree of effectiveness of this criterion was 6, while the students mode was 5. This resulted 42.9 percent of the teachers selecting the degree of effectiveness of 6, while 27.3 percent of the students felt that the degree of effectiveness was 5.

To compare this criterion in another way, 0, 38.7 and 61.3 percent of the teachers selected the degree of effectiveness of low, medium and high, when 5.9, 62.5 and 31.6 percent of the students selected the low, medium and high respectively.

In addition to the above analysis, the female students commented that teachers could drastically change a student's behavior and attitude. It was important to have a teacher who could relate to students and help them grow and mature. If a teacher was apathetic, it was a poor situation. A teacher's attitude could change a student's attitude for the worse or for the better. The teacher's attitude

about life and school really reflect the students.

Item 15. This item illustrated the comparison of the perceptions of the teachers and students concerning the degree of effectiveness relative to the amount learned by the students as a criterion of effective teaching.

A chi square value of 2.266 was found. There was no significant difference at .05 level.

Item 17. The item referred to was the comparison of the perceptions between teachers and students regarding the degree of effective student growth in critical thinking as a criterion of effective teaching. The teachers saw this criterion as high as the rate of 6 relative to degree of effectiveness and the students concurred. Fifty percent resulted in the mode of the response of the degree of effectiveness of 6 for teachers, while 31.5 percent of the students saw the degree of effectiveness of 6. This resulted in a statistically significant difference in the perceptions of the teachers and students concerning critical thinking as a criterion of effective teaching. This was indicated by the value of chi square 12.485 which was significantly different at the .05 level.

Considering the overall comparisons of the degree of effectiveness of teaching of this characteristic 0, 29.1 and 70.8 percent of the teachers rated the degree of effectiveness as low, medium and high, whereas 1.6, 53 and 45.4 percent of the students concurred. The

perceptions of both groups of the sample population concerning the degree of effectiveness of the above characteristic of teaching were significantly different.

Item 19. This item illustrated the comparisons of the teachers' and students' perceptions of the degree of effectiveness of the student growth in problem solving as a characteristic of effective teaching.

The value of chi square was found to be 12.868. Therefore, a basis was established to reject the null hypothesis at the .05 level. The degree of the response mode rated by the teachers and the students were both 6. The percentages of the teachers' and students' perceptions for the degree of 6 were 61.2 and 35.2 respectively.

No teachers selected the degree of effectiveness of low, nevertheless, 22.4 and 77.5 percent of the teachers selected medium and high respectively, while 0.8, 39.8 and 59.3 percent of the students selected low, medium and high degrees of teaching effectiveness for the above criterion.

Considering the percentages of the response of both groups of the sample population, it appears that their perceptions on the degree of effectiveness of the mentioned criterion of effective teaching were not much different. However, when tested by the chi square test, their perceptions were statistically significantly different.

Item 21. This item showed the comparison of the degree of effectiveness of the student growth in evaluation of problems in daily life as a criterion of effective teaching.

The teacher response mode to this criterion was 6, while the students response mode of 5 and 6 to the same criterion resulted in a bimodal distribution. This resulted in 33.3 percent of the teachers rating of 6 and 29.9 and 29.9 percent of the students rating of 5 and 6 respectively. Interestingly enough, the ratings of the teachers and the students at 5 and above were both 83.3 percent. This result was not a significant difference of the teachers' and students' perceptions of the above criterion. The result was made more confident by the chi square test. The value of 0.769 of chi square was found.

Item 23. This item showed the comparison of teachers' and students' perceptions concerning the importance of the teacher's influence on establishing constructive student attitudes towards school was directly related effective teaching.

The chi square was found to be 20.653, significant at .05 level. The degree of effective response mode for teachers was 6, and the degree of effectiveness response mode for students was also 6. Forty percent of teachers rated 6, while 23 percent of the students concurred. Comparing in another dimension, 0, 26.5 and 73.5 percent of the teachers responded to the degree of effectiveness as low, medium

and high respectively, while 8.8, 51.5 and 39.7 percent of the students concurred. This result indicated that there was a difference in the perception of the teachers and students concerning the effectiveness of the above criterion.

In addition to this criterion, the male students commented that if the student could relate to his teacher and if the teacher could interest him, then he would be more attentative and interested in classroom learning. The female student said that teachers should care about what students did in and out of the classroom. A teacher should try to help students with problems other than school-related ones.

Item 25. This item was the illustration of the comparison of the teachers' and students' perceptions regarding the teacher's influence on establishing constructive student attitudes toward learning as a criterion of effective thinking.

The teacher saw this criterion of effective teaching as high as 6 and the students concurred. Forty percent of the teachers selected the degree of 6, while only 31.2 percent of the students concurred. No teachers selected low, while 24.5 and 75.5 percent of the teachers selected medium and high, whereas 3.6, 47.2 and 49.2 percent of the students selected low, medium and high respectively. This resulted in the significant difference in the overall perceptions of the teachers and students regarding the degree of

effectiveness of the criterion above. This result was made more confident by the test of the chi square.

The value of chi square 13.663 was found to be a statistically significant difference at the .05 level. This indication assured that a difference existed in the perceptions of the teachers and students.

To this criterion, the male student commented that constructive learning that could be accomplished in a classroom was one which required the participation of both students and teachers. Teacher-student relationships could help learning situations. According to female students' comments, teachers should try to listen, not criticize and understand students more. Teachers should make whatever they were teaching interesting. Teachers should be fair in grading. In addition, they commented that teachers should inspire knowledge, not force it. Finally, they said, that different students had such different learning abilities and the teachers should accept this fact.

Item 30. This item illustrated the teachers' and students' perceptions concerning the degree of effectiveness of the teacher relative to the establishment of constructive student attitudes toward friends as a criterion of effective teaching. The value of chi square 12.352 was found not to be a statistical significant difference at .05 level.

Item 33. This item was the illustration of the perceptions of the teachers and students concerning the degree of effectiveness of

the teachers in developing in students constructive attitudes towards teachers as a criterion of effective teaching. The value of chi square for this criterion was 9.735 which was not a statistical significant difference at the 5 percent level.

Chi Square Test of Independence Between Student and Teacher Population on Items Dealing with Process Criteria

Table 6 illustrates the results of the chi square test of the perceptions of teachers and students on items dealing with process criteria. This table included 12 items. Concerning these, there were 10 items that were not significantly different.

Item 1. The first item in the questionnaire required the teachers and students to respond to the degree of importance relative to effectiveness in controlling the class as a characteristic of effective teaching.

The value of chi square 19.847 was found significant at .05 level. This indicated that a significant difference existed in the perceptions of the teachers and students concerning the characteristic of effective teaching referred to above. The degree of effectiveness response mode given by teachers was 6, and the mode of response rated by the students was also 6. This resulted in 46.9 percent of the teachers selecting the degree of effectiveness of 6, while 38.3 percent of the student concurred. If comparing the degree of effectiveness as low, medium and high, 0, 10.2 and 89.8 percent of the

Table 6

Chi Square Test of Independence Between Student and Teacher  
Population on Item Dealing with Process Criteria

Item Number	Characteristics of effective teaching	$\chi^2$	df
1.	Effectiveness in controlling the class	19.847*	4
3.	Extent to which the teacher's verbal behavior in the class is student-centered	8.744	6
6.	Rapport with class	26.355*	4
9.	Extent to which he uses inductive (discovery) method	3.500	6
14.	Ability to personalize his teaching	2.065	4
20.	The recognition of difference in the capacity and interest of students	3.140	4
22.	Teacher aids pupils in learning a particular skill by breaking the skill down into hierarchical component (simple to complex, familiar to unfamiliar, concrete to abstract)	8.723	4
24.	The degree to which knowledge presented is current and abreast of trends	4.383	5
26.	Teacher focuses attention on topics and issues which evoke interaction between student and teacher	4.096	6
27.	Teachers assist students in developing constructive attitudes of self acceptance	7.474	5
31.	Teacher effectively leads discussion	4.999	6
32.	Teacher asks questions which require a higher level of thinking than recall or descriptive statements	11.843	6
Critical value of $\chi^2$ df = 4, alpha = .05 level is 9.49			
Critical value of $\chi^2$ df = 5, alpha = .05 level is 11.07			
Critical value of $\chi^2$ df = 6, alpha = .05 level is 12.59			
*Significant at alpha = .05			

teachers chose the mentioned degree of effectiveness, while 0.8, 39.9 and 59.2 percent of the students concurred.

Teachers saw effective control of the class as more important than students.

Item 3. This item was the illustration of the teachers' and the students' perceptions of the degree of effectiveness concerning the extent to which the teacher's verbal behavior in the classroom was student centered as a criterion of effective teaching.

The chi square value 8.744 was found which indicated that no significant difference existed in the perceptions of the teachers and students concerning the above criterion at the 5 percent level.

Item 6. This item illustrated the comparisons of the teachers' and students' perceptions concerning how important the rapport with class in effective teaching was. The chi square was computed and was found to be 26.355 which was significant at .05 level. This result indicated that a difference existed in the perceptions of the teachers and students concerning the above characteristic of effective teaching. The modal response of teachers was 7, while that of students was 5. About 41 percent of the teachers selected the degree of effectiveness of 7, whereas 25.6 percent of the students selected 5.

Comparing in another dimension, 0, 20.4 and 79.6 percent of teachers selected the degree of effectiveness of low, medium and high while 2.9, 54.1 and 43 percent of the students selected the degree

of effectiveness of low, medium, and high respectively. This characteristic, as indicated by the chi square, was the most significant difference in the perceptions of the teachers and students concerning the degree of effectiveness. The teachers saw this criterion as more important than students.

The female students commented that the teachers lacked the ability to see the individual student and relate to any particular student and that it was hard to have a learning experience. They felt that the teacher should be able to relate to the pupils on a basis wherein the pupils could see the situation as their situation, then help them understand it and help promote the alternatives. Rapport was considered to be the most important category. The students felt that a trustful teacher-student relationship needed to be established. However, it was noted that the teacher did not feel the need to involve themselves in student's personal life. The male students commented that it was very important for a teacher to get along with the students so that learning could take place.

Item 9. This item was the illustration of the teachers' and students' perceptions concerning the degree of effectiveness relative to the extent to which the teachers used inductive (discovery) methods as a criterion of effective teaching. No significant difference existed in the perceptions of the teachers and students concerning the criterion. The chi square value 3.500 was found.

Item 14. This item showed the comparison of the perceptions of the teachers and students of the degree of effectiveness of the ability to personalize his teaching as a criterion of effective teaching. The value of 2.065 of the chi square was found not to be a statistically significant difference at the 5 percent level.

Item 20. This item was the comparison of the teachers' and students' perceptions of the degree of effective teaching of the recognition of differences in the capacity and interest of students as a criterion of effective teaching. The chi square was found to be 3.140 which was not statistically significant different at .05 level.

Item 22. This item was the comparison of the perceptions of the teachers and students concerning the degree of effectiveness of the teachers assistance to pupils in learning a particular skill by breaking the skill down into hierarchical components (simple to complex, familiar to unfamiliar, concrete to abstract) as a criterion of effective teaching. The value of chi square was found which was not statistically significant different at the .05 level.

Item 24. This item was the illustration of the teachers' and students' perceptions of the importance assigned by both groups relative to knowledge being presented that was current and abreast of trends as a criterion of effective teaching. The overall comparison of the perceptions of the teachers and students concerning the degree

of effectiveness of teaching of the above criterion, was not statistically a significant difference.

Item 26. This item illustrated the comparison of the perceptions of the teachers and students concerning the degree of effectiveness of teacher when he focused attention on topic and issues which evoke interaction between student and teachers as a criterion of effective teaching. Comparing the overall perceptions of the teachers and students concerning the degree of effectiveness of the criterion above, as shown by the value of chi square 4.096, no statistically significant difference existed.

Item 27. This item illustrated the comparison of the perceptions of the teachers and students concerning the degree of effectiveness that the teacher assists students in developing constructive attitudes of self acceptance as a criterion of effective teaching. The value of chi square 7.474 was found not to be a statistically significant difference at .05 level.

Item 31. This item showed the comparison of the perceptions of the teachers and students concerning the degree of effectiveness relative to the teachers' effectiveness in leading discussion as a criterion of effective teaching. The value 4.999 of chi square was obtained and there was no significant difference at .05 level. Therefore, the null hypothesis was retained.

Item 32. This item illustrated the comparison of the teachers'

and students' perceptions concerning the degree of effective teaching of teacher asked questions which required a higher level of thinking than recall or descriptive statements as a criterion of effective teaching. The chi square value 11.843 was found by computation. This result allowed the retention of the null hypothesis at .05 level.

Chi Square Test of Independence of Teacher and Student Populations on Items Dealing with Presage Criteria

Table 7 illustrates the results of  $\chi^2$  test of independence between teacher and student populations on items dealing with presage criteria. There were 13 items dealing with the above criteria. Ten items out of thirteen were not significantly different.

Item 4. This item illustrated the comparison of the teachers' and students' perceptions of the degree of effectiveness of the general knowledge and understanding of subject content as a criterion of effective teaching. This result was not statistically significantly different at the 5 percent level as found by the value of chi square 7.433.

Item 5. This item showed the comparison of the teachers' and students' perceptions concerning the degree of effectiveness of the participation in community and professional activities as a criterion of effective teaching. The value of chi square 8.175 was found not to be a significant difference at .05 level.

Table 7

Chi Square Test of Independence Between Student and Teacher Populations on Item Dealing with Presage Criteria

Item Number	Characteristics of effective teaching	$\chi^2$	df
4.	General knowledge and understanding of subject content	7.433	4
5.	Participation in community and professional activities	8.175	6
7.	Capacity to perceive the world from the student's point of view	26.843*	6
8.	Knowledge of subject matter in related areas	6.927	4
10.	Civic responsibility	2.311	6
11.	Years of teaching experience	6.285	6
12.	Willingness to be flexible, yet to be as direct as the situation demands	2.363	4
13.	Personal adjustment and character	4.077	4
16.	Past performance during the teacher's student teaching experience	3.699	6
18.	Teacher's ability to state learners' goals in behavioral terms	3.805	6
28.	Teacher's skill in guiding the learning process	13.062*	4
29.	Teacher's ability to identify prerequisite skills for particular learnings	6.349	4
34.	Teacher's ability to arouse pupil's interest	13.818*	6

Critical value of  $\chi^2$  df = 4, alpha = .05 is 9.49  
 Critical value of  $\chi^2$  df = 6, alpha = .05 is 12.59  
 \*Significant at alpha = .05

Item 7. This item illustrated the perceptions of the teachers and students regarding the degree of effectiveness relative to the capacity of the teachers to perceive the world from the student point of view as a criterion of effective teaching. The value of chi square was found to be 26.843. The value of chi square indicated that the perceptions of the teachers and students were significantly different at .05 level. The mode response of the teachers to the degree of effectiveness of the teachers was 5, while the mode response of the students to the same criterion was 6. In judging the degree of low, medium, and high, there were 2, 57.2 and 40.8 percent of the teachers rating to those degrees, while 3.2, 28.8 and 68 percent of the students rated low, medium and high respectively. Therefore, evidence indicated that the perceptions of the teachers and students were different. The students saw this criterion as more important than the teachers.

In addition to the point of view presented above, the male teachers commented that the teacher should always keep in his mind the best interest of the students and be sensitive to the student need. The male students stated that the questions a student asked were vital to class participation. Female students added that the teacher should try to listen and understand the students more. The teachers should listen to the students without criticizing them.

Item 8. This item showed the comparison of the perceptions of the teachers and students relative to the importance of knowledge of

subject matter in related areas as a criterion of effective teaching. The value of chi square 6.927 was found not significantly different at .05 level.

Item 10. This item illustrated the comparison of the perceptions of the teachers and students on the degree of effective teaching concerning the civic responsibility of teachers as a criterion of effective teaching. The value of chi square 2.311 was found not to be a significant difference at .05 level.

Item 11. This item demonstrated the comparison of the teachers' and students' perceptions relative to the degree of effectiveness concerning the years of teaching experience as a criterion of effective teaching. The value of chi square 6.285 was not statistically significant different at .05 level.

Item 12. This item was the illustration of the teachers' and students' perceptions of the degree of effectiveness of the willingness to be flexible, yet to be as direct as the situation demands as a criterion of effective teaching. The value of chi square to this criterion was 2.363 which was not a statistically significant difference at .05 level.

Item 13. This item was the comparison of the perceptions of the teachers and students concerning the degree of effective teaching of the personal adjustment and characteristic as a criterion of effective teaching. The value of chi square 4.077 was found as a

basis to retain the null hypothesis at .05 level.

Item 16. This item illustrated the perceptions of the teachers and students relative to the degree of effectiveness concerning performance during the teacher's student teaching experience as a criterion of effective teaching. The chi square 3.699 was found not to be a significant difference at the 5 percent level.

Item 18. This item showed the comparison of the teachers' and students' perceptions concerning the degree of effectiveness of the teacher's ability to state learners' goals in behavioral terms as a criterion of effective teaching.

The comparison of the perceptions of the teachers and students according to the degree of effectiveness of teaching of the above criterion as found by the value of chi square 3.805 was not a significant difference at the 5 percent level.

Item 28. The item showed the comparison of the teachers' and students' perceptions concerning the degree of effectiveness of teacher's skills in guiding the learning process.

The obtained chi square was 13.062 which indicated that a significant difference existed at the .05 level. The degrees of the response of the bimodality rated by the teachers were 6 and 7, while the students rated 6. About 39 and 39 percent of the teachers rated 6 and 7, while 33.5 percent of the students rated 6, and 21.5 percent of the students rated 7.

Comparing in another dimension, 0, 22.5 and 77.6 percent of the teachers perceived a degree of effectiveness of the above criterion as low, medium and high respectively, while 2.8, 42.7 and 55 percent of the students concurred. Considering the perceptions of the teachers and students to the rating of low, medium and high, it seemed that both groups of the sample population had no different perceptions. However, the chi square test indicated that the teachers and students had a difference in the perceptions concerning the above criterion of effective teaching.

According to the comments provided by the respondents, the male students said that a teacher should not assume that all students were operating on the same level of maturity and intelligence. He had to assume a friendly attitude toward the students and treat them as the individual ego warranted. They commented further that a teacher's skill at teaching was directed toward the average and above-students and not to explaining to students of slower and lower abilities.

Item 29. This item was the illustration of the comparison of the teachers' and students' perceptions relative to the degree of effective teaching in connection with the teacher's ability to identify prerequisite skills for particular learning as a criterion of effective teaching.

The overall comparison of the degree of effective teaching as perceived by the teachers and students for the above mentioned

criterion was not statistically significantly different as found by a value of chi square 6.349 at .05 level.

Item 34. This item illustrated the comparison of the perceptions of the teachers and students concerning the degree of effectiveness of the teacher's ability to arouse pupils' interest as a criterion of effective teaching.

The chi square was found to be 13.818, significant at .05 level which indicated that a significant difference existed. The degree of effectiveness response mode given by teachers was 6, while the students rated 7. The concurrence of the teachers' and students' perceptions were 44.9 and 51.1 percent respectively.

However, 0, 14.3 and 85 percent of the teachers selected the degree of effectiveness of low, medium and high respectively, while the percentages of students who selected those degrees of effectiveness were 5.6, 16.8 and 77.2 percent respectively. It revealed that although teachers and students rated this criteria highly, the teachers rated it somewhat higher than the students.

The male students commented that the teacher who discussed things and made the learning interesting was the best teacher. Nothing could be accomplished if the students were bored and bogged down with work.

Comparison of Product, Process and Presage Criteria by Numbers of Significant and not Significant Difference

Table 8 presented the comparison of the number and percentage of the items of product, process and presage criteria that were perceived as significantly different and not significantly different by the teachers and students.

From the following table, it was found that the process criteria had the highest percentage of the items that were not perceived differently by the teachers and students.

Table 8

Comparison of Product, Process and Presage Criteria by  
Numbers of Significant Difference and not  
Significant Difference

Significance	Product No.	%	Process No.	%	Presage No.	%	Total
Significant Dif.	5	55.56	2	16.67	3	23.08	10
Not significant dif.	4	44.44	10	83.33*	10	76.92	24
Total	9	100	12	100	13	100	34

\*The highest percentage of the number of items that were not significant different.

Comparison of Product, Process and Presage Criteria by Ranking of  
Level of Significance

In order to compare the effectiveness of product, process and presage criteria, the investigator decided to do this through the ranking of level of significance. Table 9 was the illustration of the ranking of significance of each characteristic with respect to the grouping of the product, process and presage criteria.

Consequently, it was discovered that item 23, the teacher's influence on establishing constructive student attitudes toward school under the product criteria group, was ranked first. Item 15, amount learned by the students, was ranked last. The researcher noted that two items, item 15 and 21, were perceived highly in the degree of effectiveness of the product criteria.

The process criteria had item 6, rapport with class as its highest significance, while item 9, extent to which he used inductive (discovery) methods as the lowest significant difference in the perceptions of the respondents. The researcher also noted items 14, 20, 22, 24, 27 and 31 under the process criteria as highly perceived effective to the criteria of effective teaching by the student and the teacher populations.

Items 34, teacher's ability to arouse pupils' interest ranked first, and item 10, civic responsibility ranked last in the level of significance under the presage criteria groups. Items 4, 8, 29, 13

and 12 were ranked 3rd, 4th, 5th, 6th, and 7th respectively and all of which were rated high in the scale of the degree of effectiveness.

Table 9

The Comparison of the Product, Process and Presage Criteria by Ranking of the Level of Significance and the Degree of Freedom

Product				Process				Presage			
Item	Ranked	$\chi^2$	df	Item	Ranked	$\chi^2$	df	Item	Ranked	$\chi^2$	df
23	1	20.653*	4	6	1	26.355*	4	34	1	13.818*	4
19	2	12.868*	4	1	2	19.347*	4	28	2	13.062*	4
17	3	12.485*	4	22	3	8.723h	4	4	3	7.433h	4
21	4	0.769h	4	20	4	3.140h	4	8	4	6.927h	4
2	5	19.186*	5	14	5	2.065h	4	29	5	6.349h	4
25	6	13.663*	5	27	6	7.474h	5	13	6	4.077h	4
30	7	12.352	6	24	7	4.383h	5	12	7	2.363h	4
33	8	9.735	6	32	8	11.843	6	7	8	26.843*	6
15	9	2.266h	6	3	9	8.744	6	5	9	8.175	6
				31	10	4.999h	6	11	10	6.285	6
				26	11	4.096	6	16	11	3.699	6
				9	12	3.500	6	18	12	3.085	6
								10	13	2.311	6

\*Significant at alpha = .05.

h = highly perceived as effectiveness

The Significance of Product, Process and Presage Criteria by Degree of Importance

In order to determine whether product, process and presage criteria are the most important in evaluating effective teaching, a comparison was made of the percentage of items in each category that

were perceived to be low, medium or high in importance by both students and teachers. Results of this comparison have been reported in table 10.

Table 10

The Comparison of Product, Process and Presage Criteria on the Degree of Importance that were Highly Perceived by the Teachers and the Students

Criteria	Degree of Importance							
	Low		Medium		High		Total	
	No.	%	No.	%	No.	%	No.	%
Product	0	0	2	22.22	2	22.22	4	44.44
Process	0	0	4	33.33	6	50.00*	10	83.33
Presage	0	0	5	38.46	5	38.46	10	76.92

\*The highest percentage as perceived effective

Only two items, or 22.22 percent, of the product criteria were perceived as being high in importance by both groups of respondents. The items were: 15) amount learned by the students; and 21) student growth in evaluation of problems in daily life.

When investigation was made on the process criteria, it was found that 6 items or 50 percent of the mentioned criteria were perceived as high in importance by the teachers and students. They were the following items: 14) ability to personalize his teaching; 20) the recognition of differences in the capacity and the interest of students;

22) teacher aids pupils in learning a particular skill by breaking into hierarchical components. (simple to complex, familiar to unfamiliar, concrete to abstract); 24) the degree to which knowledge presented is current and abreast of trends; and 27) teacher assists students in developing constructive attitudes of self-acceptance, and 31) teacher effectively leads discussion.

Finally, it was found that 5 items or 38.46 percent of the presage criteria were rated high by the teacher and student population. The items so rates were: 4) general knowledge and understanding of subject content; 8) knowledge of subject matter in related areas; 12) willingness to be flexible, yet to be as direct as the situation demands; 13) personal adjustment and character; and 29) teacher's ability to identify prerequisite skills for particular learnings.

In summary, when the degree of importance was investigated, it was found that 22.22, 50.00 and 38.46 percent of the criteria of effective teaching were perceived high by the teachers and students in the product process, and presage criteria respectively. It could be concluded, therefore, that in a comparison of the degree of importance of the criteria, process ranked first, presage second, and product last.

Test of Difficulty

It was mentioned previously that the primary purpose of designing column II in the questionnaire was to have the teacher group alone fill out the degree of difficulty in measuring the criteria of effective teaching. When the questionnaire was returned, the mean or difficulty of each criterion of characteristic of effective teaching was computed.

In order to test the difficulty in measuring product, process and presage criteria, the Kruskal-Wallis Test reported in Bartz (1976: 310-312) was used. Means were determined on the difficulty of each item, and the resulting values were ranked from 1 (most difficult) to 34 (least difficult). The items were then grouped with respect to product, process, and presage criteria. Results of this analysis have been reported in table 11.

The following process was the computation of the chi square. According to Bartz (1976:310) Kruskal-Wallis Test:

$$H = \frac{12}{N(N+1)} \sum \frac{RG^2}{NG} - 3(N+1)$$

Where N was the total number of scores,

$RG^2$  was the squared sum of the ranks in a group,

NG was the number of score in a group

Here N = 34

$$\sum \frac{RG^2}{NG} = \frac{(63)^2}{9} + \frac{(257)^2}{12} + \frac{(275)^2}{13}$$

Table 11

The Grouping of Means with Respect to the Product,  
Process and Presage Criteria

Product			Process			Presage		
Item	$\bar{X}$	Rank	Item	$\bar{X}$	Rank	Item	$\bar{X}$	Rank
2	4.4468	12	1	3.1875	32.5	4	3.2917	31
15	4.4043	13.5	3	3.6739	29	5	3.1875	32.5
17	5.1277	1	6	3.6875	28	7	4.9167	6
19	4.8125	9	9	4.0000	19.5	8	3.7500	26
21	5.1250	2	14	4.3125	16	10	3.8298	24
23	5.1042	3	20	4.8298	7.5	11	2.6744	34
25	5.0833	4	22	3.9318	22	12	4.2083	18
30	4.8298	7.5	24	4.0000	19.5	13	4.4043	13.5
33	4.5000	11	26	3.9787	21	16	3.8043	25
			27	4.9583	5	18	3.9091	23
			31	3.4894	30	28	4.3750	15
			32	3.7083	27	29	4.5435	10
						34	4.2500	17

R1 = 63	R2 = 257	R3 = 275
N1 = 9	N2 = 12	N3 = 13
$\bar{X}$ = 4.83	$\bar{X}$ = 3.98	$\bar{X}$ = 3.93

Critical value of  $\chi^2$ , df = 2, significant at .05 level is 5.99

By substituting the values above, we have:

$$H = \frac{12}{34(34+1)} \left\{ \frac{(63)^2}{9} + \frac{(257)^2}{12} + \frac{(275)^2}{13} \right\} - 3(34+1)$$

$$= \frac{12}{1190} (441 + 5504.0833 + 5817.3076) - 105$$

$$= .01008403 (11762.39) - 105$$

$$= 118.61229 - 105$$

$$= 13.61229$$

$$df = 2$$

Critical value of  $\chi^2$   $df = 2$ , significant at .05 level is 5.99.

From the above result the value of chi square 13.612 showed that there was a statistically significant difference at .05 level. The result above indicated that there was a significant difference existing in the perceptions of the teachers concerning the degree of difficulty in measuring product, process and presage criteria.

After the investigation of the ranking of means, it was found that item 17, student growth in critical thinking under the product criteria was perceived to be the most difficult criteria to measure. Item 11, years of teaching experience under presage criteria, was the easiest to measure. In terms of the difficulty of the three groups of criteria, product criteria was the most difficult to measure ( $\bar{X} = 4.83$ ), process second ( $\bar{X} = 3.98$ ) and presage was the easiest to measure ( $\bar{X} = 3.93$ ).

#### Test to Relationship

In order to ascertain the relationship between teacher and student perceptions of the most important criteria of effective teaching, ranks of the mean responses to each item for students and

teachers was determined and the Spearman's Rho rank correlation coefficient was computed. Table 12 reports the information obtained.

The following process illustrates the computation of the Spearman's Rho rank correlation coefficient.

$$\rho = 1 - \frac{6 \cdot \Sigma d^2}{N(N^2 - 1)}$$

Where  $\rho = ?$

$$N = 34$$

$$\Sigma d^2 = 1,843$$

By substituting the above value, we have:

$$\rho = 1 - \frac{6 \times 1843}{34(1156-1)}$$

$$= 1 - \frac{11058}{39270}$$

$$= 1 - 0.28158899$$

$$\rho = 0.7184$$

$N = 30$ , critical value of  $\rho$  significant at .05 level is .306

From the above result,  $Rho = 0.7184$ ,  $N = 34$ , is significant at the .05 level. This result indicated that there was a significant relationship between teacher and student perceptions of the most important criteria of effective teaching.

#### Summary

It was found that 70 percent of the teachers and 73.5 percent of the students returned the questionnaires. The mean teacher age was

Table 12

The Ranking of Means of the Teachers' and the Students'  
Concerning the Degree of Effective Teaching

Item	Teacher $\bar{X}$ Ranked	Student $\bar{X}$ Ranked	d	d <sup>2</sup>
1	1	10	-9	81
2	17.5	26	-8.5	72.25
3	27	21	6	36
4	2.5	1	1.5	2.25
5	32	33	-1	1
6	4	20	-16	256
7	24	7	17	289
8	21	6	15	225
9	29	24	5	25
10	31	30	1	1
11	34	34	0	0
12	6	3	3	9
13	9	8	1	1
14	17.5	13	4.5	20.25
15	13	4	9	81
16	33	32	1	1
17	11	16	-5	25
18	30	29	1	1
19	10	9	1	1
20	12	5	7	49
21	19	12	7	49
22	20	17	3	9
23	8	25	-17	289
24	16	11	5	25
25	7	19	-12	144
26	26	22	4	16
27	14	15	-1	1
28	5	14	-9	81
29	15	18	-3	9
30	28	31	-3	9
31	23	23	0	0
32	22	27	-5	25
33	25	28	-3	9
34	2.5	2	.5	.25
Total			$\sum d^2$	1,843

Critical value of Rho significant at .05 level is .306

39.55 and the mean of years of teaching experience of the teachers was 13.17.

Thirty nine, 34.9 and 25.3 percent of the students represented the 10th, 11th and 12th graders respectively.

The process, presage and product criteria were ranked first, second and third respectively regarding their importance as criteria of effective teaching.

There was a significant association which existed in a positive direction in the perceptions of the teacher and student population concerning the most effective criteria.

Teachers perceived the product criteria as the most difficult to measure, process second and presage the least difficult.

Chapter 5 will be an epilogue of this writing. It will include the findings, the conclusions, and the recommendations of this research.

## Chapter 5

### FINDINGS, CONCLUSIONS, RECOMMENDATIONS

This chapter includes the findings, conclusions and recommendations of this research.

#### Findings

The findings include some indices of demands for educational accountability, some of the milestones in the development of teacher evaluation during the last sixty years, the major strengths and weaknesses of evaluation by outcome, the results of the test of relationship, newer approaches and concepts of teachers evaluation, the results of the test of difficulty in measuring product, process and presage criteria. The findings also include the answer to the question to what relative value should be placed on characteristics of product, process and presage. The findings help answer the question as to whether or not student perceptions of effective teaching differed from teacher perceptions. In addition, the findings give some indication as to what is the degree of importance of each criterion as an index of effective teaching.

#### Some Indices of a Demand for Educational Accountability

Regarding the demand for educational accountability, the public questioned whether or not the input of money into educational

institutions obtained the desirable outcomes. In order to discuss the subject of education accountability, the problem of effective teaching was always considered the main topic. These discussions, of course, could not avoid the matter of the judgment of promotion, release and renewal of teacher's contract, which effected the teacher's job security. Consequently, the teachers questioned the basis used by the administrators to judge effective teaching.

In order to answer the problem in question, the assessment of the quality of instruction and the criteria utilized in the judgment had to be considered. This research was concerned with, and emphasized especially, the study of the criteria of effective teaching. However, it was difficult to determine who would be and who was a good teacher and upon what basis the judgment was formed. This statement was supported by the teachers' report that one-half of the teachers' population had no confidence in the teacher evaluation program.

It was recommended by a popular educator that the most appropriate criteria of effective teaching were those which had relevance to significant education outcomes. Nevertheless, it was critical as to which outcomes would be selected.

#### Some of the Milestones in the Development of Teacher Evaluation

Ayres (1912) stated that the best teacher was one who was able to shape the students' character. He stated further that education

wishes to be efficient, as industry is efficient and to know what the product is and to gauge the time, quantity and value elements.

In 1932, NEA stated that teaching needed trained, experienced and competent teaching personnel. Making good citizens was a skilled service and could not be performed by unskilled workers. Rough estimation of the merit could not be undertaken with great confidence in the outcome. Teachers would feel hurt in changing without reason in matters so important to them as their salaries.

In 1933, Hartmann proposed the formula for teaching efficiency as:  $\text{teaching efficiency} = \frac{\text{final AR}}{\text{initial AR}}$  (AR = Accomplishment Ratio),

In 1950, Domas stated that the components of teaching ability were: (1) knowledge of subject matter, (2) technique of teaching, and (3) personality. The researcher noted that the above abilities were somewhat similar to the results of this research.

In 1952, Remmers identified the definition of teacher effectiveness as two terms, a criterion and effectiveness. A criterion was a standard against which a measurement was made in estimating the validity of the measurement. Teacher effectiveness was to estimate whether they would produce desired outcomes in terms of amount and type of changes in pupils' behaviors.

Flanagan (1954) developed a method called the critical incident technique which included five steps; (a) determination of the general

aim of the activity, (b) development of plans for collecting factual incident regarding the activity, (c) collection of data, (d) analysis of data, (e) interpretation and reporting of the statement of the requirement of the activity.

In 1960, Mitzel stated that a criterion to measure a successful teacher should possess four attributes: (a) relevance, (b) reliability, (c) freedom from bias, and (d) practicality.

In 1964, Biddle proposed the "interaction analysis" in the classroom to quantify the quantitative aspects of verbal communication. This technique included ten categories to classify the statement of the pupil and the teacher at a rate of approximately one every three seconds. Popham (1973) stated that three widely used measures of teachers competence were: (1) ratings, (2) systematic observation, and (3) standardized tests of pupil achievement.

#### New Approaches to Evaluating Teaching Effectiveness

Cardellichio (1974) stated that in order to evaluate teaching effectiveness, one needed to consider methods and their relation to the teacher's learning goals and student performance. A principle for developing evaluative criteria was that the teaching method should be congruent with the outlined objective which a teacher presented to his advisor. To state learner's goals, Bloom's Taxonomy of Educational Objectives should be consulted.

In 1971, McNeil introduced supervision by objectives as a tool to evaluate teaching effectiveness. Supervision by objectives was a process by which a supervisor and a teacher had or had not been successful in changing the skills, competencies, or attitudes of his students. According to McNeil, there were phases in the improvement of the instruction: preobservation conferences, observation, analysis and strategy, and post observational conferences.

In 1974, Jenkins identified three categories which were employed as criteria of effective teaching. They were product, process and presage. These criteria were used as a basis for this writing.

Finally, performance objectives were used to evaluate teaching effectiveness. This procedure of teaching evaluation was proposed by NEA (1972). The evaluation procedure was stated in terms of achievable objectives, time for evaluation was limited, steps to achievement were set, and measurement conditions and degree of achievement were established.

#### Demographic Findings

In order to obtain sufficient information, 70 and 343 questionnaire forms were distributed to the teachers and students in Bozeman Senior High School respectively. It was found that 49 or 70 percent of the teachers and 253 or 73.75 percent of the students returned the questionnaires. Thirty-five or 71.4 percent of the teachers were

males while 14 or 28.6 percent of the teachers were females.

The Chi Square Test of Independence Between the Teacher and Student Populations on Items Dealing with Product, Process and Presage

The Chi square test of independence was applied to each item in the questionnaire (see Appendix A, pp. 103-109) to determine whether differences existed between the teachers and students at the .05 level of significance.

On the product criteria, differences were found on five of the nine items - 2, 17, 19, 23, and 25. Of the twelve items concerned with process criteria, differences were found on two - 1 and 6. Students and teachers perceived differently three items concerned with presage criteria; items 7, 28, and 34.

Comparing by percentages, it was found that significant differences between the perceptions of teachers and students were found on 56.56 percent of the product criteria, 16.67 of the process criteria and 23.08 percent of the presage criteria. Highest agreement between the two groups was found in process criteria, with presage second and least agreement found on product criteria.

Comparison of Product, Process and Presage Criteria by Degree of Importance

It was revealed that 22.22, 50.00 and 38.46 percent of the product process and presage criteria respectively were perceived as highly

important by the teachers and students. Based on these data, it could be concluded that more of the criteria concerned with process were rated as highly important by teachers and students, than presage criteria or product criteria, which ranked second and third respectively.

#### Test of Relationship

By using the Spearman's Rho method to test the relationship of the perceptions of the teachers and students pertaining to the best criteria of effective teaching, it was found that a significant association existed in a positive direction in the perceptions regarding the product, process, and presage criteria.

#### Test of Difficulty

In order to test the difficulty to measure product, process, and presage, the Kruskal-Wallis Test method was used. The result of the test indicated that a difference existed in the perceptions of the teachers concerning the degree of difficulty in measuring product, process, and presage criteria.

It was concluded from the obtained data that product criteria was the most difficult to measure, the second was the process and the least was the presage. However, it was perceived that the presage and the process were very close in the degree of difficulty to measure.

### Conclusions

Before coming to an end of this research, it was appropriate to conclude the results of this investigation based upon the findings.

1. It was initially planned that a sufficient sample would be obtained to give a confidence level of 95 percent. Using the formula 
$$NS = \frac{t^2 \cdot P \cdot Q}{d^2} + 1/N$$
 a need sample of 285 was obtained. However, the actual number of responses obtained was 253. If this number is substituted for  $N_s$ , the level of significance ( $d$ ) can be computed. Solving the formula for ( $d$ ), the actual value of ( $d$ ) obtained was equal to .054, which means that the level of confidence is 94.6, rather than 95 percent. The author feels that this is high enough to warrant consideration of the findings as significant, but it should be noted that the level of confidence is not quite as high as was originally planned for.

2. Students and teachers seem to agree on many of the criteria for teacher effectiveness. Therefore, it should be possible to develop an instrument with which to rate the effectiveness of teachers.

3. Initial efforts in developing ways of measuring teacher effectiveness should be directed toward process and presage criteria. This conclusion is based upon the findings of this study which indicated: 1) Students and teachers agreed upon more of the process and presage criteria; and 2) Teachers felt that process and presage

criteria were easier to measure.

4. Students and teachers disagree on the importance of several of the criteria related to product, i.e., the expected outcomes of the school experience as it relates to student behavior, such as growth in critical thinking or growth in problem solving. This suggests that students and teachers need to get together on what the schools should be doing for the students. If the teachers are trying to do certain things and students expect them to be doing something else, the outcome is certain to be less than satisfactory.

#### Recommendations

Upon completion of this investigation, the researcher felt that the following recommendations should be considered:

1) The researcher experienced some difficulty in getting sufficient returns. In order to improve the percent of returns, it is suggested that some time of the school year other than May be considered to conduct studies involving students and teachers, since they are busy with final examinations at that time of the year. Perhaps it might also be more expedient to design a study where groups of student could be sampled (e.g. in a study hall or classroom) rather than by individual sampling.

2) In order to be able to generalize the results, it would be desirable to extend the sampling to several schools, if time and money were available to do so.

3) The areas of investigation should go into depth of process criteria such as verbal interaction, or interaction analysis between teachers and students, for example. Other areas of investigation should be emphasized on performance objectives of teaching for teachers and performance objectives of learning for students.

4) It is recommended that in order to obtain the result of which criteria of effective teaching should be the best one, Kruskal-Wallis Test should be utilized to test the perceptions of teachers and students by means of ranking of means with respect to the grouping of product, process and presage as was done to the testing of difficulty in this research.

5) Each item in the questionnaire should be studied relative to both importance and difficulty, and these items which rates highest in importance and were least difficult to measure could be used as a starting point for developing a valid instrument for measuring teacher effectiveness.

6) Administrators should look at process criteria as the best approach to teacher evaluation. This implies a greater understanding of teaching processes by administrators and supervisors.

7) The Thailand of education should be studied with the idea of trying to institute a system of teacher supervision that incorporates process criteria into the system.

APPENDICES

## APPENDIX A

## Questionnaire for Teachers

A SURVEY OF TEACHERS' AND STUDENTS' PERCEPTIONS OF THE CRITERIA OF  
EFFECTIVE TEACHING IN BOZEMAN SENIOR HIGH SCHOOL  
BOZEMAN, MONTANA

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The purpose of this survey is to identify perceptions of teachers and students in Bozeman Senior High School as to the criterion elements of effective teaching. This study is intended not only to point out perceived teacher attitudes, characteristics, methodologies and student attainments for effective teaching, but to also determine the perceived relative degree of effectiveness for utilizing these attributes as indices to effective teaching.

This study is being conducted as a part of a doctoral program at Montana State University in the Department of Educational Services, Dr. Robert Thibeault, Department Head. The individual identity of the respondent will be held in the strictest confidence.

Please return to:

Samorn Sucharit  
216 S. 11th Ave.  
Bozeman, Montana 59715

Part I General Information

Check the appropriate blanks as indicated.

Please indicate your sex. (1) Male \_\_\_\_\_ Female \_\_\_\_\_

Please indicate your age group.

- (1) 20-29 \_\_\_\_\_ (4) 50-59 \_\_\_\_\_  
(2) 30-39 \_\_\_\_\_ (5) 60 and over \_\_\_\_\_  
(3) 40-49 \_\_\_\_\_

Please indicate your years of teaching experience (including this year as one) \_\_\_\_\_ years.

Part II Teachers' Perceptions Inventory

Column I Directions: In each item of the following characteristics, please indicate how important you think these characteristics are in effective teaching by circling only one of the seven numbers given.

The ratings in column I represent the relative degree of importance of the criteria as an indicator of effective teaching. The numbers given represent the following meanings:

Ratings 1, 2 represent a low degree of importance of the criteria of effective teaching.

Ratings 3, 4, 5 represent a medium degree of importance of the criteria.

Ratings 6, 7 represent a high degree of importance of the criteria as an indicator of effective teaching.

Column II Directions: In each of the following characteristics, please indicate the degree of difficulty in measuring these criteria by circling one of the seven numbers. Be certain that each criterion has only one number circled.

The ratings in column II represent the relative degree of difficulty in measuring these characteristics. The numbers given represent the following meanings:

Ratings 1, 2 represent a low degree of difficulty in measuring the characteristics. Stated another way, it is easy to measure this characteristic.

Ratings 3, 4, 5 represent a medium degree of difficulty in measuring these criteria.

Ratings 6, 7 represent a high degree of difficulty in measuring these characteristics, or it is hard to measure these characteristics.

Item	Characteristics of Effective teaching	Column I							Column II						
		How important are the characteristics in effective teaching?.....							What is the degree of difficulty in measuring this characteristic?						
		Degree of importance							Degree of difficulty						
		Low	Medium			High			Low	Medium			High		
		1	2	3	4	5	6	7	1	2	3	4	5	6	7
1	Effectiveness in controlling the class	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2	Influence on student's behavior	1	2	3	4	5	6	7	1	2	3	4	5	6	7
3	Extent to which the teacher's verbal behavior in the classroom is student-centered	1	2	3	4	5	6	7	1	2	3	4	5	6	7
4	General knowledge and understanding of subject content	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5	Participation in community and professional activities	1	2	3	4	5	6	7	1	2	3	4	5	6	7
6	Rapport with class	1	2	3	4	5	6	7	1	2	3	4	5	6	7
7	Capacity to perceive the world from the student's point of view	1	2	3	4	5	6	7	1	2	3	4	5	6	7
8	Knowledge of subject matter in related areas	1	2	3	4	5	6	7	1	2	3	4	5	6	7

Item	Characteristics of effective teaching	Column I							Column II						
		How important are the characteristics in effective teaching?.....							What is the degree of difficulty in measuring this characteristic?						
		Degree of importance							Degree of difficulty						
		Low	Medium			High			Low	Medium			High		
		1	2	3	4	5	6	7	1	2	3	4	5	6	7
9	Extent to which he uses inductive (discovery) methods	1	2	3	4	5	6	7	1	2	3	4	5	6	7
10	Civic responsibility	1	2	3	4	5	6	7	1	2	3	4	5	6	7
11	Years of teaching experience	1	2	3	4	5	6	7	1	2	3	4	5	6	7
12	Willingness to be flexible yet to be as direct as the situation demands	1	2	3	4	5	6	7	1	2	3	4	5	6	7
13	Personal adjustment and character	1	2	3	4	5	6	7	1	2	3	4	5	6	7
14	Ability to personalize his teaching	1	2	3	4	5	6	7	1	2	3	4	5	6	7
15	Amount learned by the students	1	2	3	4	5	6	7	1	2	3	4	5	6	7
16	Past performance during the teacher's student teaching experience	1	2	3	4	5	6	7	1	2	3	4	5	6	7
17	Student growth in critical thinking	1	2	3	4	5	6	7	1	2	3	4	5	6	7

Item	Characteristics of effective teaching	Column I						Column II							
		How important are the characteristics in effective teaching?.....						What is the degree of difficulty in measuring this characteristic?							
		Degree of importance						Degree of difficulty							
		Low	Medium			High		Low	Medium			High			
1	2	3	4	5	6	7	1	2	3	4	5	6	7		
18	Teacher's ability to state learner's goals in behavioral terms	1	2	3	4	5	6	7	1	2	3	4	5	6	7
19	Student growth in problem-solving	1	2	3	4	5	6	7	1	2	3	4	5	6	7
20	The recognition of differences in the capacity and interest of students	1	2	3	4	5	6	7	1	2	3	4	5	6	7
21	Student growth in evaluation of problems in daily life	1	2	3	4	5	6	7	1	2	3	4	5	6	7
22	Teacher aids pupils in learning a particular skill by breaking the skill down into hierarchical component (simple to complex, familiar to unfamiliar, concrete to abstract)	1	2	3	4	5	6	7	1	2	3	4	5	6	7
23	Teacher's influence on establishing constructive student attitudes toward school	1	2	3	4	5	6	7	1	2	3	4	5	6	7

Item	Characteristics of effective teaching	Column I							Column II						
		How important are the characteristics in effective teaching?							What is the degree of difficulty in measuring this characteristic?						
		Degree of importance							Degree of difficulty						
		Low	Medium			High			Low	Medium			High		
		1	2	3	4	5	6	7	1	2	3	4	5	6	7
24	The degree to which knowledge presented is current and abreast of trends	1	2	3	4	5	6	7	1	2	3	4	5	6	7
25	Teacher's influence on establishing constructive student attitudes toward learning	1	2	3	4	5	6	7	1	2	3	4	5	6	7
26	Teacher focuses attention on topics and issues which evoke interaction between student and teacher	1	2	3	4	5	6	7	1	2	3	4	5	6	7
27	Teacher assists students in developing constructive attitudes of self acceptance	1	2	3	4	5	6	7	1	2	3	4	5	6	7
28	Teacher's skills in guiding the learning process	1	2	3	4	5	6	7	1	2	3	4	5	6	7
29	Teacher's ability to identify prerequisite skills for particular learnings	1	2	3	4	5	6	7	1	2	3	4	5	6	7

Item	Characteristics of effective teaching	Column I							Column II						
		How important are the characteristics in effective teaching?							What is the degree of difficulty in measuring this characteristic?						
		Degree of importance							Degree of difficulty						
		Low	Medium			High			Low	Medium			High		
		1	2	3	4	5	6	7	1	2	3	4	5	6	7
30	Teacher affects the establishment of constructive student attitudes toward friends	1	2	3	4	5	6	7	1	2	3	4	5	6	7
31	Teacher effectively leads discussion	1	2	3	4	5	6	7	1	2	3	4	5	6	7
32	Teacher asks questions which require a higher level of thinking than recall or descriptive statements	1	2	3	4	5	6	7	1	2	3	4	5	6	7
33	Teachers develop in student constructive attitudes toward teachers	1	2	3	4	5	6	7	1	2	3	4	5	6	7
34	Teacher's ability to arouse pupil's interest	1	2	3	4	5	6	7	1	2	3	4	5	6	7

Comments: Any comments you might have concerning the criteria of effective teaching will be appreciated. Comments may be written in the space provided. If additional space is needed, you may write on the back of this page.

## APPENDIX B

## Questionnaire for Students

A SURVEY OF TEACHERS' AND STUDENTS' PERCEPTIONS OF THE CRITERIA OF  
EFFECTIVE TEACHING IN BOZEMAN SENIOR HIGH SCHOOL  
BOZEMAN, MONTANA

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The purpose of this survey is to identify perceptions of teachers and students in Bozeman Senior High School as to the criterion elements of effective teaching. This study is intended not only to point out perceived teacher attitudes, characteristics, methodologies and student attainments for effective teaching, but to also determine the perceived relative degree of effectiveness for utilizing these attributes as indices to effective teaching.

This study is being conducted as a part of a doctoral program at Montana State University in the Department of Educational Services, Dr. Robert Thibeault, Department Head. The individual identity of the respondent will be held in the strictest confidence.

Please return to:

Samorn Sucharit  
216 S. 11th Ave.  
Bozeman, Montana 59715

Part I General Information

Check the appropriate blanks as indicated.

Please indicate your sex. (1) Male \_\_\_\_\_ (2) Female \_\_\_\_\_

Please indicate your grade level.

(1) Grade 10 \_\_\_\_\_ (2) Grade 11 \_\_\_\_\_ (3) Grade 12 \_\_\_\_\_

Part II Students' Perceptions Inventory

Directions: In each item of the following characteristics, please indicate how important you think these characteristics are in effective teaching by circling only one of the seven numbers given.

The ratings in column "Degree of importance" represent the relative degree of importance of the criteria as an indicator of effective teaching. The numbers given represent the following meanings:

Ratings 1, 2 represent a low degree of importance of the criteria of effective teaching.

Ratings 3, 4, 5 represent a medium degree of importance of the criteria.

Ratings 6, 7 represent a high degree of importance of the criteria as an indicator of effective teaching.

Item	Characteristics of effective teaching	How important are the characteristics in effective teaching?						
		Degree of importance						
		Low		Medium			High	
		1	2	3	4	5	6	7
1	Effectiveness in controlling the class	1	2	3	4	5	6	7
2	Influence on student's behavior	1	2	3	4	5	6	7
3	Extent to which the teacher's verbal behavior in the classroom is student-centered	1	2	3	4	5	6	7
4	General knowledge and understanding of subject content	1	2	3	4	5	6	7

Item	Characteristics of effective teaching	How important are the characteristics in effective teaching?						
		Degree of importance						
		Low		Medium			High	
		1	2	3	4	5	6	7
5	Participation in community and professional activities	1	2	3	4	5	6	7
6	Rapport with class	1	2	3	4	5	6	7
7	Capacity to perceive the world from the student's point of view	1	2	3	4	5	6	7
8	Knowledge of subject matter in related areas	1	2	3	4	5	6	7
9	Extent to which he uses inductive (discovery) methods	1	2	3	4	5	6	7
10	Civic responsibility	1	2	3	4	5	6	7
11	Years of teaching importance	1	2	3	4	5	6	7
12	Willingness to be flexible, yet to be as direct as the situation demands	1	2	3	4	5	6	7
13	Personal adjustment and character	1	2	3	4	5	6	7
14	Ability to personalize his teaching	1	2	3	4	5	6	7
15	Amount learned by the students	1	2	3	4	5	6	7
16	Past performance during the teachers' student teaching experience	1	2	3	4	5	6	7
17	Student growth in critical thinking	1	2	3	4	5	6	7
18	Teacher's ability to state learners' goals in behavioral terms	1	2	3	4	5	6	7
19	Student growth in problem-solving	1	2	3	4	5	6	7

Item	Characteristics of effective teaching	How important are the characteristics in effective teaching?						
		Degree of importance						
		Low	Medium			High		
		1	2	3	4	5	6	7
20	The recognition of differences in the capacity and the interest of students	1	2	3	4	5	6	7
21	Student growth in evaluation of problems in daily life	1	2	3	4	5	6	7
22	Teacher aids pupils in learning a particular skill by breaking the skill down into hierarchical component (simple to complex, familiar to unfamiliar, concrete to abstract)	1	2	3	4	5	6	7
23	Teacher's influence on establishing constructive student attitudes toward school	1	2	3	4	5	6	7
24	The degree to which knowledge presented is current and abreast of trends	1	2	3	4	5	6	7
25	Teacher's influence on establishing constructive student attitudes toward learning	1	2	3	4	5	6	7
26	Teacher focuses attention on topics and issues which evoke interaction between students and teacher	1	2	3	4	5	6	7
27	Teacher assists students in developing constructive attitudes of self acceptance	1	2	3	4	5	6	7
28	Teacher's skills in guiding the learning process	1	2	3	4	5	6	7

Item	Characteristics of effective teaching	How important are the characteristics in effective teaching?						
		Degree of importance						
		Low		Medium			High	
		1	2	3	4	5	6	7
29	Teacher's ability to identify prerequisite skills for particular learnings	1	2	3	4	5	6	7
30	Teacher affects the establishment of constructive student attitudes toward friends	1	2	3	4	5	6	7
31	Teacher effectively leads discussion	1	2	3	4	5	6	7
32	Teacher asks questions which require a higher level of thinking than recall or descriptive statements	1	2	3	4	5	6	7
33	Teachers develop in student constructive attitudes toward teachers	1	2	3	4	5	6	7
34	Teacher's ability to arouse pupils' interest	1	2	3	4	5	6	7

Comments: Any comments you might have concerning the criteria of effective teaching will be appreciated. Comments may be written in the space provided. If additional space is needed, you may write on the back of this page.

## APPENDIX C

## Comments of Teachers and Students Individually by Sex

Male Teacher

1. A teacher is a performing artist who seeks comprehensiveness of understanding on both specific and general insights of a given subject. A teacher loves his subject matter and loves sharing the insights that accompany learning his subject matter.

2. The teacher should always keep uppermost in mind - the best interest of the student and try to identify with them. Always be fair and enthusiastic. Try to be sensitive to student needs.

3. There are many roads to the sea, as many ways of influencing, guiding, teaching young people (or old). The relative importance of many of the items will vary from teacher to teacher, both within disciplines and between disciplines. I feel you may be measuring apples and oranges with a banana peel.

4. The teacher must have a stimulating personal intellectual capacity. If he is not inquisitive, it seems to me that it is going to be difficult for him to evoke an inquisitive nature in his students. It is of utmost importance that the teacher be involved in serious intellectual endeavours of their own.

5. You cannot have any of the above without discipline. You cannot have discipline without the backing of the superintendent and

school board. Bozeman schools do not have this backing.

6. This is just piloting to determine characteristics - ?? Or are all of these viable for this study??? Seems it needs to be re-evaluated.

7. Many teachers are subject centered; w/a strong emphasis on recall, memorization rather than pragmatic, application of skills.

8. Consistent good leadership from administrators is essential if all teachers are to be most effective. Poor leadership is the quickest way to let a school degenerate (Bozeman Senior is a prime example of this).

9. If I were listing criteria in order in any subject matter:  
 (1) developing self-image (leads to honesty, responsibility. (2) (therefore positive image of other schools, friends, teachers, society),  
 (3) curiosity, (4) subject matter.

#### Female Teacher

1. Many of the questions do not apply to certain courses.
2. Sincerity - very imp - student need to know the teacher believes what he or she is saying - then I think many other things will fall in place - Sincerity seems as important as being "effective" it should precede effectiveness.

#### Student Male

1. I think it is very important for a teacher to get along with

the student so that learning can take place.

2. Put this thing in English it was hard to comprehend. I had no idea where you were going from or going to.

3. I do like the student having a say in what he would like to learn and learn the modern up to date equip. etc. I think the teacher should ask the students questions for a higher thinking ability.

4. You had many questions on the students accepting himself, friends, teachers, but it really scoop nothing about the teacher's attitude, his care about students outside of his class.

5. The teacher attitude toward homework is bad. Some think that is all they have to do.

6. A really effective teacher will be rated 7 in all of these. If the school system will allow them to teach in their own methods.

7. I feel the teacher should center his class mostly on what the student is there to learn. Not for what the student wants to learn.

8. I feel that the ability of a teacher to treat students as equals has the highest of any degree of importance. In regard to item 31, it is also very important for the teacher to let student lead some discussion. I'm glad you are asking the student on teaching as we've lived with it now for 12 years. Good luck on your results.

9. Effective teaching is not learned, it is developed. I feel tenure plays too important a role in deciding the worth and value of

a teacher. In fact tenure is detrimental to the student-teacher relationships, unless proper sabbaticals etc. are exercised. Like anything else, teaching on the high school level can become a methodical routine. This problem seems strongest in the history dept. in case of BSHS where the teachers are more often referred to as "Coach" than anything else, because of the obvious role they play in extra curricular athletics.

10. Judging from my experience in BSHS, I am very pleased with the present system and the present teachers. In my opinion, no change is warranted or needed.

11. I think the school system in BSHS is pretty well designed and fairly effective on the teaching in general, but I think that the teacher has to put some interest in the subject before the student can. In general if the teacher does not correct or criticize assignments regularly, how can the student learn anything constructive pertaining to the subject?

12. I think the most important thing a teacher can do is put himself on the student level. The questions a student asks are vital to the participation of the class. A teacher doesn't have to follow the already established trends set for them. They should teach the way that they feel the class would learn the best at. The amount of materials a student learns depends on the teaching methods.

13. What is needed is to get rid of the teachers who stay here

just for their paycheck. I know of one teacher who really doesn't seem to care about what his students learn just so long as he gets his paycheck.

14. I think that the present system of teachers and teaching methods are fairly good.

15. If a person decides to teach, he/she should make a total commitment, not to be a "teacher" but to teach. The teacher while in a teaching-learning situation, should set aside personal like or dislikes; teach all as equals (and not equal on a common low, but common high which not all may reach). He/She must recognize talent and cultivate it for the student's future. As the cliché states: "The students of today are the leaders of tomorrow."

The teacher should not, of course, assume that all high school students are operating on the same level of maturity and intelligence. He must assume a friendly attitude toward the students and treat them as individual egos warrant, all of the while encouraging to that high level, whether of intelligence, maturity, or sophistication, whichever is lacking.

16. Teachers that discuss things and make the learning interesting are the best teachers. When class discussion is fascinating or interesting, it sticks in my mind. As far as memorizing things, I'll do it, until after the test.

17. I feel that it is important for the teacher to relate to his

or her students. If the teacher does not do this very well the student will not learn. If the student can relate to his teacher and the teacher can interest the student (by asking questions or getting the student talking) then students will look forward to class and learning.

18. The teacher attitude toward homework is bad. I don't think there is any need for the teachers to have participation in professional or community activities unless it has to do with what he teaches.

19. Good teacher gets the class involved. If you have a problem of your own, he helps you with it, and if you ask a damn question, he does not laugh or anything, he'll tell you what you want to know. I think more teachers should be like him.

20. To be effective teacher, class has to be interesting. Nothing can be accomplished if the students are bored or bogged down with work. The only way to accomplish a feat such as this is to have interesting class stories and discussions along with the normal work. Games and things that are fun for everyone are helpful. Mostly, however, it takes a special kind of person that can take hold and control their class.

21. The teacher should know what he or she was talking about and should try to teach what the students want and what is needed by the system.

22. The main problem with teaching as a whole is that the system channels off the lower intellect or interest students and the higher

students. This leaves a void for average students.

23. Students should have some choice in subject matter. Students that need it should get more individual help.

24. Learning that can be accomplished in a classroom is one constructive on the part of the students and teachers. The teacher should try to understand student problems and have a good knowledge of the subject. He must command the respect of his pupils, instead of being wishy-washy to make friends with all of them. And most important he must keep them interested.

25. Attention should focussed on making the old learning methods more interesting rather than discarding old methods for new ones.

26. We're human, honest to God, we need a day off occasionally - without HASSLE! The 7 three absences is excellent, but if you take one - you have some pain in the weak teacher's jumping down your throat. I'm a teacher's kid and I can't skip at all because the hard time some teachers in this school would give my dad when they heard - "Mr. kid was unexcused" such a great subject for gossip! (It must be pretty boring not having anything else to talk about). Next they'll be trying to find out my SEX life. Stick to teaching, I'm not saying there should be no relationship other than professional, but don't try to play GOD! I'm not speaking of all teachers - some are O.K. people and some are great: but there are enough that try to make

school miserable that it makes kids want to skip and not do class work. These classes are so bad you skip for a break and then they just make it that much worse for you! If I get things done what difference does my attendance make? DON'T PREACH!

27. Motivation is the most important...Good feeling when the kids like the teacher and class.

28. I'll learn more if the teacher likes me.

29. Discovering methods of teaching are good where they apply. They work good in only certain subjects and at certain levels and I have had problems with teachers using this method when I think it shouldn't have been used. Teacher's skill at teaching is directed toward the average and above students and not to explaining to students of slower and lower abilities. Students should develop themselves and teachers together for help.

31. Classes should be semi-strict, however, freeflow of discussion. Also, business at hand is important, but teachers shouldn't be afraid if a topic is sidetracked into another topic. If all's going well, why stop it.

32. Sir: Around BSHS most of the teachers, but not all, think of teaching as a job. I think that if they did not have this kind of attitude may be school could be fun.

33. Many of the teachers I have are very good about having good interesting discussions and activity the class interested in the work.

However, I have a teacher who gives an assignment and then goes and works on his own work. This makes the class very boring and makes the students very unreceptive when he does discussion.

34. The teacher should consistently show the relativeness of subject matter.

35. I think more important than anything else is that the teacher is respected rather than liked. If he or she can accomplish both at the same time, then you have got a great teacher.

#### Student Female

1. I feel teachers lack one quality. That is the ability to see the individual student rather than a numbered face. They aren't personal enough to really relate to any particular student. Because of this it is hard to have a personal, yet learning experience.

2. I think it is very important that a teacher be able to relate to the pupils on a basis to where the pupil can see the situation as their situation, then help them understand it and promote alternatives. Not so much a dependence on the teacher just a go-between for the student, the problem and its relation to real life.

3. I think teacher should try to make whatever they are teaching interesting and should help students learn as much as possible in a year, but be conscious of the amount of homework they give.

4. I think teachers should try to listen to and understand

students more. They should listen to their ideas and not criticize them. To me, that is very important.

5. Teacher should be able to get along with the students and be fair in grading.

6. Teachers who are interested in applying history to today or current events seem to help the student learn much more than those concerned with specific facts and dates. Thought questions open a student's mind to new exciting channels as well as giving them a chance to get to know their instructor. Opinion questions are good for student debate because it almost always opens a discussion in which all parties can broaden on from opinion.

7. Teacher should not get into any one personal life, but they should try to get the pupil to set a high goal for life. Make it so they will want to try and not stuff off.

8. Teacher should be interested in students. It will bring out the best productivity in a student.

9. Rapport with class, arousal of interest, control of the class, effective explanations and full understanding by teachers are the most important categories.

10. Teacher should try to teach what the students want and what is needed by the system.

11. Teacher-student relationship to be trustful and you can turn to them and take to them as friends.

12. Teachers must be sensitive, true feeling, alertness. He must believe what he teaches. Honesty, uniqueness.

13. Teachers with less than 10 years experience are more apt to change the way they teach and methods they use as where a person with 10 or more years is pretty set in their way. Teacher should keep class attended, teach them in an interesting manner. "Read this page, do this assignment, and ill lecture are undesirable." Discussion about things that people interest. Math must memorize, English grammar should be provided.

14. Teachers should see if students are having trouble in part of studies and try to help them.

15. Teachers should make their kids think and dig up some answers for themselves because they learn more that way. Teachers should know the subject matter and admit his/her mistake. Teachers who pick favorites out of a class are hurting the entire class, including the favorite. It changes the attitude of all students, a kind of hostility develops between teachers and students which breaks down the entire learning process.

16. Teachers should inspire knowledge, not force it.

17. Teacher should present the most important material in the best way.

18. Teachers should get all the students in class involved with each other and with what is happening in class. In doing this everyone

would feel more comfortable.

19. Students should be able to lead the discussion too .

20. A teacher shouldn't be so old that they can't understand kids. (They get very strict and are stuck in the ways when they are 50 or so). They know their stuffs but not how to teach it.

21. Students should be able to go into depth on something interesting to them.

22. Teacher should keep his or her nose out of friendships and relationships in especially out of class! Such as saying stay away from him he's or she's a bad influence on your reputation.

23. Some teachers don't care whether the student fails or passes even though they try to help, and some of them even say this. Then they try to blame it on the parents and say they don't come to parent-teacher meeting. So I think the student is on his own really if the teachers are fighting the parents and vice-versa. Every teacher is giving homework at the same time which makes it hard.

24. Teacher should be able to get the message across to the students. A student should be interested in what he is studying, so that he will enjoy, understand and remember it.

25. Years of experience does not necessarily make a good teacher. A teacher should get their class to think. A person does not have to go to school to learn. They can do it on their own as long as he has been taught to think.

26. I feel that much more learning of the 3R's should be taught at a lower level and not get abandoned because it is boring to the students. There are high school students who can not read or write properly. It does not do any good to try to back track over the past five years at this point so they graduate. English class in Jr. High do not have the appropriate amount of time to teach all the basic information.

27. I feel the most effective way to become a better teacher is through the wants and needs of students and teacher together.

28. No. 30, teachers should keep their noses out of students relationships unless asked.

29. I feel one of the most important parts of teaching is that the teachers know the subject he is teaching thoroughly and interested in this subject.

30. The teachers do not need to involve themselves in a student personal life to interest a student. If a teacher and student have an effective relationship, a teacher must be able to put himself in a student position to be able to understand him sometimes.

31. Teacher and student needs together to be effective teacher.

32. Teachers need to get involved with the students and do what the student would like to so the kids can stay interest in their class.

33. Teacher should be able to arouse pupils education through discussions without a teacher's view point also.

34. The schools are going downhill in the aspect of teachers, old teachers. Some of the older teachers who have been teaching for 15 years have become outdated, as to trying to communicate with the students. They are eligible for retirement benefits and should leave their jobs to some new and young teacher who thinks pretty much close to the students thinking and has some new ideas and concepts instead of the old reading N' writing N' arithmetic.

35. The teacher's most effective when they are able to enjoy and maintain a good rapport with their class, present information in motivating new enough ways as to keep their opinions of students and student habits for the most part to themselves.

36. There should be a large stress placed on life outside of school. Students aren't prepared to enter the world on their own. The basic subject, e.g. math, reading, are fairly well taken care of in K1-6 grades or in the Jr. high. So classes in Sr. and Jr. Highs should be mostly life-oriented.

37. A teacher should not be able to teach unless they know what they are teaching. A teacher should be able to do anything the students are expected to do.

38. An effective teacher needs to get involved in projects and the learning process instead of just read out of a book and baby-sitting the classes. Also it helps to get more personally involved with the pupils and be human, instead of just being mechanically

involved with making the student learn.

39. Teachers should not treat kids like they are low or dirt.

40. Teachers should accept the fact that not everyone has the same learning abilities as everyone else, as long as he puts forth the effort I think that's the most important.

41. Teachers should be acquainted with their teaching habits. Learn to change with the times more.

42. Teachers should care about what students do in and out of the classroom. A teacher should try to help students with problems other than school related ones.

43. Teachers and students need to be able to relate to one another on any subject.

44. I think teachers can drastically change a student's behavior and attitude. I feel it is important to have a teacher who feels he or she can relate to students and help them grow and mature. The worst thing a teacher can do, I feel, is to be apathetic. A major job of a teacher is to create interest on the students part. A teacher's attitude can change a student's attitude for the worse or for the better. I think the teachers attitude about life and school really effects the students.

45. I think a teaching job has been done when a kid remembers what and has learned over the year.

46. I think a good teacher lowers himself to the student level

so they can get to know him. I know I learn better when I can trust and talk to a teacher as an individual on my level.

47. Teachers should stop treating their students like a bunch of robots and consider their feelings as well as their attributes.

48. Teachers themselves need to show more interest in us. Many act as if its any other job, and its not because a teacher's job is the students and we're human beings. Too many teachers act as if we are not capable of communicating with the outside world.

49. I think its very important for the teacher to give individual attention to the students when needed, and if teachers realize that the students don't understand they should slow down.

## APPENDIX D

## Form Letter Sent to Teachers

Montana State University  
Bozeman, MT. 59715  
April 15, 1976

Dear Colleague:

At present, educators, researchers, and the public are interested in educational accountability at all levels. At any discussion about educational accountability, teacher effectiveness is the main topic. This study is concerned with teachers' and students' perceptions of effective teachers. This study is a dissertation conducted under the direction of the graduate school at Montana State University with Dr. Robert J. Thibeault as chairman of the committee.

Data from this study will be used to identify perceptions of teachers and students in Bozeman Senior High School as to the criterial elements of effective teaching. This study is intended not only to point out perceived teacher attitudes, characteristics, methodologies and student attainments for effective teaching, but to also determine the perceived relative degree of effectiveness for utilizing these attributes as indices to effective teaching.

In order to get an accurate picture, it is very important that a high percentage of responses from teachers be obtained. Your support and cooperation will be appreciated in helping to make this study a success. I realize the demands being made upon your time, however, if you would take time from your busy schedule and answer the questionnaire should be less than twenty minutes. The individual identity of the respondents will be held in the strictest confidence.

Please complete the attached questionnaire and return it to the principal. Again, your cooperation in this study will be greatly appreciated.

Sincerely,

(Samorn Sucharit)

## APPENDIX E

## Form Letter Sent to Students

Montana State University  
Bozeman, MT. 59715  
April 21, 1976

Dear Student:

Presently, educators, researchers, and the public are interested in educational accountability at all levels. On discussions about educational accountability, teacher effectiveness is the main topic. This study is concerned with teacher's and student's perceptions of effective teachers. This study is a dissertation conducted under the direction of the graduate school at Montana State University with Dr. Robert J. Thibeault as chairman of the committee.

Data from this study will be used to identify perceptions of teachers and students in Bozeman Senior High School as to the criterial elements of effective teaching.

In order to get an accurate picture, it is very important that a high percentage of responses from students be obtained. Your support and cooperation will be appreciated in helping to make this study a success. I realize the demands being made upon your time, however, if you would take time from your busy schedule and answer the questionnaire, I will be thankful. Total time involved in responding to the questionnaire should be less than twenty minutes. The individual identity of the respondents will be held in the strictest confidence.

Please complete the questionnaire provided and return it to the researcher. Again, your cooperation in this study will be greatly appreciated.

Sincerely,

(Samorn Sucharit)

APPENDIX F

Follow-up Notes From Dr. Robert J. Thibeault

A Note to Faculty Members of Bozeman Senior High School

TO: ALL FACULTY OF BOZEMAN SENIOR HIGH SCHOOL

FROM: ROBERT J. THIBEAULT

Please return the enclosed questionnaire to Jerry in the main office. I very much appreciate your help in obtaining this information. It is one step in trying to determine effective teacher competencies. Authorization to conduct this study has been received from Mr. Negus and Mr. Gappmayer.

Once again, thanks for your help.

A Follow-up Note to Faculty Members of Bozeman Senior High School

Dear Teacher:

Sorry to bother you again, but we do need a few more questionnaires returned. Otherwise Sam's study will be invalid and unacceptable. If you have filled one out, please disregard this request. Return questionnaires to Mrs. Kenny in the central office.

Thank you.

Robert J. Thibeault

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