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ABSTRACT

A study was conducted at Lakeshore Technical College (LTC) to assess the relationship between students' overall ratings of their instructors and their ratings of particular aspects of their courses. The study sample included 262 first-year students enrolled in at least one general education course and one occupational course in fall 1986. Students were asked to evaluate the course in terms of its difficulty, out-of-class preparation requirements, the grade they expected to receive, usefulness of course information, its planning and organization, presentation of subject matter, assignments, exams, textbooks, instructional materials, and bias. In addition, students were asked to evaluate the instructor in terms of knowledge of subject matter, clarity, enthusiasm, use of class time, encouragement of student participation, feedback, and interaction with students. Study findings included the following: (1) significant differences in students' overall ratings of instructors were found between male and female students; (2) student ratings of instructor knowledge of subject seemed to be independent of other items; and (3) 5 of 29 items were significantly related to overall instructor evaluation (i.e., "instructor spoke in a way that helped me learn"; "course was well planned and organized"; "instructor encouraged thinking, problem solving, and decision making"; "instructor explained materials clearly"; and "instructor demonstrated interest in my learning"). Based on study findings, recommendations for modifying instructor evaluations were developed. The report includes 117 references and the instructor evaluation form. (AAZC)

RELATIONSHIPS OF STUDENT RATINGS OF COURSE, INSTRUCTOR, AND STUDENT ELEMENTS TO STUDENT OVERALL RATINGS OF INSTRUCTORS OF COURSES AT LAKESHORE TECHNICAL COLLEGE

by

Marvin A. Schrader, Ed.S.

A Major Applied Research Project presented

in partial fulfillment of the requirements

for the degree of Doctor of Education

Nova University

September 1988

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July 1988

Lakeshore Technical College has approximately one hundred full-time instructors. Instructional administrators are responsible for implementing the instructor growth program which had been loosely organized in previous years. During the past several years, a need became apparent for a more structured, yet flexible, program to ensure a capable, enthusiastic, and technically competent instructional staff.

Several instructional management staff members developed the Lifelong Investment For Excellence (LIFE) program to assist in individual instructor professional growth. Goals for professional growth are developed and ranked to a large extent on student assessment of instructor's performance. The major component in this assessment is the result of analysis of student ratings for particular instructor evaluation elements. The analysis involves student ratings of a number of particular course elements (e.g., difficulty and type), instructor elements (e.g., enthusiasm and explanations), and student elements (e.g., age and grade expected).

The purpose of this study was to refine a part of the instructional assessment procedure at LTC. This was accomplished by obtaining and analyzing data for course, instructor, and student elements to determine their relative relationships to student overall ratings of instructors. Equally important, this study also determined the biasing effects of particular course, instructor, and student elements; student demographics; and college course and program classifications on student overall ratings of instructors.

The research questions developed for this study were:

1. Is there a relationship evident between student overall ratings of instructors and student ratings of the three major groupings of elements (course, instructor, and student) in the instructor assessment at LTC? If so, what is the nature of the relationship?

2. Is there a relationship between student overall ratings of instructors and student ratings of particular items within each of the three major element groups, student demographic characteristics, or the place of the course in the college's academic program?

The sample included 262 first-year Lakeshore Technical College students enrolled in occupational programs having at least one general education course and one occupational-specific course in the first year of the program offered during the 1986-87 fall semester. Students in twenty-four courses in eighteen programs were included in the study. The Student Assessment of Instruction instrument, developed at the college during 1984-86, was used to obtain student rating data. The student rating data were analyzed using the regression analysis to

obtain the answer to the first question and One-Way Analysis of the Variance (ANOVA) to obtain the answer to the second question.

The answers provided the information necessary to provide a basis for adjusting the student ratings and for determining the relationship of student ratings to particular elements with their overall ratings of instructors. Staff at the college will have a basis for adjusting the student ratings to ensure comparability regardless of the particular course and students involved. The adjusted rankings can be effectively used as a basis for identifying and ranking goals for use in the individual instructor professional growth program.

The results indicated that student ratings of items in the three major element groups and of the overall instructor performance were done in a consistent and discriminating manner; the test of reliability was positive and high. Significant differences in the student overall ratings of instructors were found in comparison to those student elements of expected grade and present opinion of course. Also, significant differences in student overall ratings of instructors were found between female and male students and among students in courses in different instructional divisions of the college. Student ratings to only five items in course and instructor element groups were found to relate significantly to the student overall ratings of instructor.

One recommendation was to continue use of student ratings to collect data about the instructor's performance. A second was to base appropriate adjustments to the student overall ratings of instructors on significant elements, gender of student, and college division in

which the course was offered. A third recommendation was that determination of the amount of adjustment to student ratings be made for each element, student demographic, and college course and program classification in which a significant biasing influence was found to exist at the college. A fourth recommendation was to use adjusted student ratings as a basis for identifying and ranking goals to be included in the individual instructor's professional growth program. Lastly, it was recommended that subsequent periodic studies be conducted to monitor relationships and effects on student ratings of elements and instructors as new programs emerge and composition of the student body changes.

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CHAPTER 1

INTRODUCTION

This Major Applied Research Project (MARP) was conducted to determine the utility of student ratings of instructional elements for identifying and ranking instructor professional growth goals. This is especially important to the operation of an instructor growth program at institutions of higher education, especially at the Lakeshore Technical College (LTC). Chapter One includes the following ten sections: (1) Background and Significance, (2) Statement of the Problem, (3) Purpose of the Study, (4) Major Elements, Considerations, and Research Questions, (5) Research Hypotheses, (6) Implications for the Improvement of Educational Practice, (7) Definition of Terms, (8) Limitations, (9) Assumptions, and (10) Delimitations.

Background and Significance

Vocational education began in Wisconsin in 1911. At that time, vocational agriculture and homemaking programs were offered. Secondary school programs were expanded to offer evening and other weekday instruction to farmers and homemakers to assist them in becoming more productive.

During the period between 1911 and 1965, the University of Wisconsin developed an Extension Division for continuing education in a number of fields. At the same time, legislation was passed enabling

municipalities to organize and administer vocational education programs was passed. Statutes were also passed that allowed municipalities having populations over 10,000 to organize occupational education programs, levy taxes to support these programs, and hire a director to administer these programs. Although the educational opportunities for job preparation were increased, a number of persons were still without these opportunities because they lived in the many municipalities that had populations of less than 10,000; and opportunities for them were not included in the legislation. In addition, there was a lack of standardization since each municipality was responsible for its own offerings.

In 1965, the Wisconsin legislature passed legislation to create a uniform system to provide public vocational, technical, and adult education to all persons over the age of sixteen within the state. The educational offerings were to be financed primarily by local property taxes, student tuition and fees, and state aid based upon a formula established by the state legislature. McGown (1968:1) concluded that the three primary motivating factors leading to the legislation were

> That the state's citizens deserved higher quality vocational, technical, and adult education programs that the district plan could best promote this quality and that the school system should become truly statewide in scope.

The Wisconsin Vocational, Technical and Adult Education (VTAE) system was developed to train postsecondary school persons (age sixteen and over) for the world of work. This mission, based on 1965 and 1971 efforts, was restated in the Wisconsin statutes (1975, Chapter 38:1),

". . . programs with specific orientation below the baccalaureate level . . ." (see Appendix A). The mission continues to be important for all vocational education agencies as Asche and Vogler (1980:16) stated, "The long-term goal of vocational education is to meet the manpower needs of the state and the nation. The needs have been construed to mean sufficient quantities of trained persons for the labor force." To accomplish this, legislation was passed in 1965 to organize the Wisconsin system of occupational education consisting of eighteen districts by 1970. Each resident over sixteen was thereby provided access to public postsecondary occupational education.

State control and coordination was provided by the state vocational, technical and adult education (VTAE) board. The board hired a state director, a staff of educational consultants, and a support staff of fiscal consultants. This was in accordance with the recommendation made by McGown (1968:45-46) to the Wisconsin Department of Administration in which he emphasized that "districts must become well organized. The state office staff must provide the leadership to help the districts realize that this is the most critical challenge faced by the system."

As a result of challenges, hearings, etc., the eighteen-district structure has been reduced to the present sixteen districts (see Appendix B). One of these districts is the Lakeshore Vocational, Technical and Adult Education (VTAE) District, with its physical campus known as Lakeshore Technical College (see Appendix C). The name change from Lakeshore Technical Institute (LTI) to Lakeshore Technical College

(LTC) occurred in July 1987. The mission has been further defined by the district board in its North Central Self-Study report (Lakeshore Technical Institute, 1980:10) as "the preparation of an individual for initial or continued gainful employment."

The Lakeshore VTAE District operates fifty-five less-than-one-year, one-year, and two-year vocational diploma programs and two-year associate degree programs. The following types of programs are also offered:

1. Apprenticeship training programs.
2. Adult and continuing education programs.
3. Short-term programs.
4. Seminar-type programs.
5. Farm training programs.
6. Consumer topics programs.
7. Technical assistance programs.

These programs are designed primarily to meet the manpower needs of the two-county area served. However, several programs are offered to meet regional and statewide needs.

Approximately one hundred contract full-time and part-time (employed for eighteen to thirty-four hours per week) instructors are employed to provide instruction in various programs at LTC. Approximately 450 call staff (employed for fewer than eighteen hours per week) are also employed as needed to teach in programs. All instructors must be certifiable when hired to teach courses in programs. Certification standards for instructors were developed by state VTAE staff and

approved by the VTAE board. Certification standards are included in the Wisconsin Administrative Code (see Appendix D).

Effectiveness of the Wisconsin VTAE system in carrying out its mission has been due to its highly qualified technically proficient instructors. Competence in the occupational area has been emphasized in selecting instructors. Teaching experience has been an advantage but not a requirement for a new instructor. Certification addressed this through a renewable provisional status (see Appendix D for details) while new instructors completed at least one course in each of six areas before receiving a five-year certification status. These areas include:

1. Principles of VTAE.
2. Course construction.
3. Teaching methods.
4. Educational psychology.
5. Educational evaluation.
6. Intergroup relations.

Instructors in the Wisconsin VTAE system must maintain certification to teach. The five-year full certification status is renewable upon evidence that appropriate work experience and/or course work has been completed during the previous five-year period. Failure to maintain certification voids the contract between the district and the instructor.

Instructors have no tenure in the Wisconsin VTAE system. However, labor laws involving bargaining units, continuing contracts,

due process, etc., are in effect. These ensure continuous employment after the probationary period has been completed except for specified causes such as low enrollment, unsatisfactory teaching performance, etc.

The staff professional growth program for providing continuous quality instructional staff has been and continues to be the responsibility of the administrative staff of each individual district. In prior years, identification of professional growth goals was primarily the instructor's responsibility. Bases for identifying and ranking goals were the analysis results of evaluations of instructor performance; e.g., self-evaluation, supervisor evaluation, and student ratings, with student ratings being most important.

Prior to 1986, district procedures included little reference to an individual instructor professional growth program except through certification renewal activities or general in-service activities as long as the instructor demonstrated satisfactory instructional performance. Primary indicators of satisfactory performance were (1) average or better student ratings and (2) lack of student complaints. Supervisor classroom observations were not normally included in instructor evaluations unless indications of concerns were received.

Prior to 1986, student ratings at LTC were obtained on an instrument containing fourteen items. Each item had a Likert numerical scale, one to seven, for use as student choices. Responses from students in all vocational diploma and associate degree-level courses were obtained during each semester and during summer school. The mean

for each of the fourteen items was calculated for each instructor, department, division, and the college as a whole. The respective data were provided to the instructor and instructor's supervisor for use when discussing the instructor's proposed professional growth program.

In 1984, the concern that student ratings of items on the existing instrument were not appropriate for professional growth decisions gained support of a number of instructional and management staff. A quality circle, a small group of employees that identify a problem and seek a solution (see Quality Circle, page 21), was organized to study the concern and develop recommendations for alleviating the concern. Circle members reviewed the concerns, specific items, and use of the results of the student assessments, usually referred to as student ratings. A number of instruments used for student ratings of instruction were reviewed in the process.

After a year and a half of effort, a new instrument (see Appendix E) for student assessment of instruction was developed. This instrument contained thirty-one items, each having five choices of which the student was to select one. Items were organized into three major groups: course elements, instructor elements, and student elements. In addition, two open-ended items were included for which students list two accolades for the course and/or instructor and two suggestions for course and/or instructor improvement.

Prior to 1986, staff professional growth at LTC was primarily the instructor's responsibility. This was especially the case with established instructors who had been judged to be good instructors by

division supervisors and students. Results of student ratings were used in setting goals for instructor growth, only if student ratings were low. Instructors also benefited from a district-supported professional growth program which included such items such as planned in-service programs, tuition reimbursement for college courses, and payment of expenses for attendance at seminars and workshops.

The LTC Instructional Services Division is currently involved in implementing a continuous individual professional growth program known as the LIFE program. The LIFE program, an acronym for Life-Long Investment For Excellence, was developed during 1985-86 by four managers in the LTC Instructional Services Division. This program was developed to remove the anomaly that while one LTC board policy required an annual instructor evaluation, it did not require development of a professional growth plan for that instructor.

The LTC instructional administrators firmly believe that, depending upon the extent to which each becomes a reality, the following are important to the success of the LIFE professional growth program:

1. Professional growth of the individual instructor should be the focus.

2. Instructor's professional growth goals should be identified and ranked using a process involving both instructor and administrator.

3. Identification and ranking of instructor's professional growth goals should be based on data. While primary emphasis should be placed on data from student ratings of instruction, self and administrator assessments should also be included.

4. Activities and resources required to achieve the selected professional growth goals should be identified.

5. Commitments of resources by the college, instructor, and administrator are essential if goals of individual professional growth plans are to be achieved.

6. Data should be collected to provide an assessment of progress made in achieving the instructor's professional growth goals and to provide a basis for identifying and ranking new goals.

7. The steps included in the professional growth program should be repeated in a continuous spiral toward a self-actualized process. In this process, the instructor's level of responsibility for identifying and ranking goals, activities, and resources increases while administrator involvement gradually decreases (see Appendix F).

A major component of the LIFE professional growth program is the data on which decisions about the instructor's growth plan will be based. These data are to be largely derived from student ratings of instruction. There are numerous course, instructor, and student elements (such as course organization, instructor enthusiasm, and student opinions); student demographics (such as age); college course and program classifications (such as function) that may affect student ratings either positively or negatively. Therefore, it is important

that the influence of each of these elements on student ratings be known so that appropriate adjustments to these ratings can be made. The adjustments to student ratings will establish comparable values for the ratings. These adjustments and considerations should promote staff acceptance of the LIFE professional growth program. This program directly affects the individual professional growth of more than 100 LTC full- and part-time contract instructors and approximately 450 call staff instructors.

A description of steps included in LIFE indicates the use of this study's results. First, student ratings for each item indicating a course, instructor, or student element are obtained, and the rating mean calculated. Second, an appropriate adjustment is made to each item rating mean depending on the extent of biasing influence of the course, instructor, or student element; student demographic; or college course or program classification. Third, a comparison between the adjusted student rating mean and the desired student rating mean for each item is made. Those items for which a considerable difference between the two means exists are noted. Fourth, noted items are ranked according to the relative relationship between each item's mean and students' overall ratings of instructor mean. Fifth, each listed item is translated into a corresponding course, instructor, or student element. Sixth, instructor professional growth goals are developed and ranked in accordance with ranked elemen s. Results of this study have a direct impact on the outcomes of steps two and four.

Statement of the Problem

LTC instructional staff members do not currently know the biasing effect of particular course, instructor, or student elements; student demographics; or college course or program classifications on student ratings of instructor performance. Staff members also do not have knowledge of relationships existing between student ratings of particular elements and student overall ratings of instructors. Without such knowledge, appropriate adjustments to the student ratings cannot be made; and data upon which goals are developed and ranked are less accurate than desirable.

Purpose of the Study

The purpose of this study was to refine a part of the instructional assessment procedures at LTC. This was accomplished by obtaining and analyzing data for course, instructor, and student elements to determine their relative relationships to student overall ratings of instructors. Equally important, this study also sought to determine whether there were biasing effects of particular course, instructor, and student elements; student demographics; and college course and program classifications on student overall ratings of instructors. This determination is important in order to make necessary adjustments to student ratings and their use. Such adjustments are necessary to ensure compatibility in interpreting student ratings and ranking instructional concerns. After the instructional assessment procedure

has been refined, it seems reasonable that instructors will be more accepting of it as a useful tool in their professional growth program.

Major Issues and Research Questions

Several major issues were addressed in this study. The first issue is whether an evaluation of an instructor's teaching can be made. Aubrecht (1979:1) questions any evaluation on the basis that "no one has found . perfectly reliable and relevant (and therefore valid) measures of teacher effectiveness." Johnson (1984:91) indicates, "The process of faculty evaluation is complex and open to debate." Cashin and Perrin (1983:595) agreed that "there is no generally accepted behavioral domain for 'effective teaching'" but contended that this should not prevent the use of evaluations for use in faculty development. Centra (1977:50) stated that "unfortunately," many instructors believe they are best able to judge their own needs and do not need or want to include evaluation by others in the process of determining professional growth needs. Braskamp, Brandenburg, and Ory (1984:19) acknowledge that teachers may believe this but contend that a major purpose of evaluation is "to help faculty to examine their teaching performance to help them improve."

Another issue comes after whether or not evaluation is useful. That issue is who is in a position to conduct a valid evaluation. Each (self, peer, supervisor, and student) has advantages and limitations. McKeachie (1983:37) indicates the issue in "Who is competent to judge the relative values of the many different kinds of teachers who make up

the faculty?" The many different kinds of situations in which instruction occurs also adds to the complexity of the issue.

Another issue relates to one particular type of evaluator, that being the student. The issue is the value of student ratings. Everett (1981:327) indicates the extensiveness of the issue in "Casual surveys of the literature and practices suggest considerable controversy over student evaluations of teaching." Hunter (1982:3) concurred in "The issue of the effectiveness of student ratings in improving instruction is not closed."

Finally, a major issue is the validity and reliability of student ratings in identifying good instruction and not being biased by elements that the instructor may or may not be able to control. Costin, Greenough, and Menges (1971:511) stated that many educators question the "inference that instructors who obtain high student ratings are actually better teachers." They contended that many instructors believed that "student ratings are unreliable, that they favor the entertainer over the instructor who gets his message across." However, they (1971:512) also expressed the view of those on the other side of the issue in, "Proponents of student ratings have held that [ratings] . . . are testable."

There will continue to exist those who believe that students can be manipulated so that the ratings obtained will be biased. A number of course, instructor, and student elements; student demographics; and college course and program classifications included in this issue were also included in the study. Those included in this

study were selected by the LIFE program developers as important to the growth program of the instructor.

The elements included in this issue and established for use in this study were:

1. Course--items concerning assignments, evaluations, function, information, organizational division, and level.

2. Instructor--items concerning application of knowledge and skills, enthusiasm, interest in student, instructional techniques, organization of classes, respect for student, and subject knowledge.

3. Student--items concerning difficulty with course, expected grade, initial opinion of course, perceived out-of-class preparation, and present opinion of course.

Considerations of student demographics of age and gender were included. College course and program classifications of function, level, and instructional division were also included. LIFE program developers considered these important because of the issue about the potentially positive or negative impact on the student overall ratings of instructors. These demographics and classifications were included because of their potential biasing influence even though the instructor had little or no control over them.

The research questions developed for this study were:

1. Is there a relationship between student overall ratings of instructors and student ratings of items in the three major element groups (course, instructor, and student) in the assessment of instruction at LTC? If so, what is the nature of the relationship?

2. Is there a relationship between student overall ratings of instructors and student ratings of particular items within each of the three major element groups, student demographics, or place of the course in college academic programming?

Answers to these questions are needed to make adjustments to the item ratings to compensate for specific course, instructor, and student influences. They are used to help identify goals. They are also used to determine the priorities of goals and activities for inclusion in the individual instructor's professional growth program.

Research Hypotheses

The research hypotheses developed for this study were:

1. Differences in student overall ratings of instructors are related to different ratings that students give to the elements, as an aggregated measure on the rating instrument, that pertain to the (a) course, (b) instructor, and (c) student. The aggregated measure for each element is the composite of the separate items pertaining to the indicated elements.

2. Differences in the student overall ratings of instructors are related to the ratings students give to each of the items on the rating instrument that pertain to the first element in research question one (the course).

3. Differences in the student overall ratings of instructors are related to the ratings students give to each of the items on the

rating instrument that pertain to the second element in research question one (the instructor).

4. Differences in the student overall ratings of instructors are related to the ratings students give to each of the items on the rating instrument that pertain to the third element in research question one (the student).

5. There is a significant difference between the overall ratings of instructors by students in courses having one function and by students in courses having another.

6. There is a significant difference between the overall ratings of instructors by students in one course level and by students in another.

7. There is a significant difference between the overall ratings of instructors by students in one age group and by students in another.

8. There is a significant difference between the overall ratings of instructors by students of one gender and by those of the other.

9. There is a significant difference between the overall ratings of instructors by students from one division and by students from another.

10. There is a significant difference between the overall ratings of instructors by students expecting one grade in the course and by students expecting another.

11. There is a significant difference between the overall ratings of instructors by students exerting one level of out-of-class preparation and by students exerting another level.

12. There is a significant difference between the overall ratings of instructors by students feeling the course had one level of difficulty and by students feeling the course had another level.

Implications for the Improvement of Educational Practice

The intent of this MARP was to improve procedures used in establishing a reliable and valid data base using student ratings of instructors that would be useful for developing goals for the instructor's professional growth program. The procedures used in this study have potential value to educators in colleges using student ratings of instructors as a basis for making decisions about instructor professional growth. The procedures used in this study could be helpful to those attempting to determine the adequacy of using raw student ratings in making interpretations and comparing teaching performances of instructors. The procedures could also be useful to those educators attempting to develop procedures for determining the biasing influences of course, instructor, and student elements; student demographics; and/or college course and program classifications. Finally, the procedures used in this study could be used by those educators attempting to develop procedures for necessary adjustments to raw student ratings in courses that are atypical in terms of elements, demographics, and/or classifications. By incorporating these

procedures into their own instructor growth programs, in which decisions are based on student ratings, educational leaders could gain increased instructor acceptance and participation.

Definition of Terms

A number of terms are used in this report in a special way. They are basic to the project. The definition of each is as follows:

Administrator Evaluation - An assessment of instructor strengths and weaknesses conducted by an associate administrator for the purpose of providing data for decision making regarding instructor growth goals and activities. Prior to reorganization in July 1987, this activity was conducted at the supervisor level, which is currently one level below the associate administrator level.

Assessment Rating - A point response on a one to five scale by a student to an item on the Student Assessment of Instruction form. It is a judgment of the agreement of the response choice to the student's feeling regarding an item. The word "assessment" has been substituted for "evaluation" to indicate a paradigm shift in the use of student ratings of instruction at LTC from "evaluation" associated with an end result to "assessment" associated with strengths (talents) and weaknesses for decisions regarding growth.

Associate Administrator - A manager of a division which offers a number of occupational programs and services at Lakeshore Technical College. The associate administrator, also referred to as administrator, is at the fourth level from the top in LTC's organizational

hierarchy. One associate administrator responsibility is to assist the instructor in determining the goals for the individual professional growth plan for the following year.

Contract Instructor - An instructor employed eighteen or more hours per week for the purpose of providing instruction in an occupational program.

Course Function - A course classification system developed by the Wisconsin Board of VTAE staff to categorize intent of a course in an associate degree or vocational diploma program. The four "functions" are (1) occupational specific, (2) occupational supportive, (3) general education, and (4) elective. Ratings from students in occupational-specific and general education courses were included in this study.

District - One of sixteen geographic areas defined by Wisconsin statute to provide postsecondary occupational and adult basic education at the less than baccalaureate level. District is short for vocational, technical and adult education district. Each district has at least one physical plant known as a college.

Division - The occupational grouping of which the occupational program is a part. It is also referred to as program area. Examples include business and marketing, health occupations, home economics, and trade and industry.

Division Assistant - A support staff person at LTC that assists an associate administrator in the operations of a division.

One responsibility of the division assistant is to administer Student Assessment of Instruction instruments to students.

Full-Time Contract Instructor - An instructor defined by the negotiated agreement between the Lakeshore VTAE District Board and the Lakeshore Education Association providing a minimum equivalent of eighteen hours of instruction per week during the semester.

Full-Time Occupational Program - A postsecondary educational program relating to a cluster of jobs or a specific job having thirteen to eighteen credits of courses offered each semester. Total number of credits in an associate degree program ranges from sixty-four to seventy-two credits and from twenty-six to sixty-five credits in a vocational diploma program. Both part-time and full-time students are enrolled in full-time programs.

Instructor Professional Growth - A process whereby additional knowledge and skills are gained to better instruct in a variety of settings, to feel comfortable with students, and remain relevant with regard to the new technologies in the workplace and in instructional delivery.

Instructor Growth Program - A planned grouping of goals and activities for improvement of instructional skills in which goals are developed, activities selected, commitments obtained, and feedback received about instructor's progress in achieving these goals.

Lifelong Investment for Excellence (LIFE) - A staff growth program developed by instructional managers at Lakeshore Technical College. LIFE emphasizes use of student ratings of instruction and

data analysis and depends on instructor and division administrator interaction for identifying and ranking goals for individual instructor professional growth.

Program Level - An indication of its hands-on vs. theoretical proportion. The VTAE system has designated two levels, technical level with a greater theoretical emphasis and vocational level with a greater hands-on emphasis.

Program Sequence File - A computer file that includes all occupational programs at LTC. Courses are listed in numeric order with the lowest number first (e.g., 091-100, Basic Riding, is listed before 801-15', Communication Skills I) for each term of each program.

Quality Circle - A "small group of employees who do similar work; voluntarily meet regularly to identify and analyze causes of problems; recommend their solutions to management; and where possible, implement solutions" (Ladwig, 1983:12).

Self-Evaluation - An instructor's self-assessment of strengths and weaknesses in instructional delivery to provide data for decisions regarding instructor professional growth goals and activities.

Student Assessment Rating - The student's response to each of thirty-one items included on the Student Assessment of Instruction instrument. Ratings provide data for decisions regarding instructor professional growth goals and activities.

Wisconsin Vocational, Technical and Adult Education (VTAE) System - A public postsecondary system of education in Wisconsin established for the purpose of offering occupational programs and services

below the baccalaureate level. Sixteen districts having geographic boundaries were established so all persons in Wisconsin have access to occupational programs and services. Each district has its own district board for governance and operates under the guidance and direction of a state board. Each district is financed through contract funds, grants, property taxes, state aids, and student tuition.

Limitations of the Study

The study had a number of limitations. These included:

1. Only students in attendance when the Student Assessment of Instruction instrument was administered were included in the study. Including ratings from students absent on that day could have resulted in different means for student ratings.

2. The data collected were limited to accuracy and honesty of assessments made by students. Students were counseled about the importance of accuracy and honesty in their ratings. However, time and resources available to complete this project precluded efforts to verify either. Therefore, the study results must be treated cautiously.

3. The assessments were limited to students enrolled in full-time, one- or two-year programs at the technical or vocational program levels. Students in part-time programs or other types of educational programs could have responded differently.

4. Student assessments were only collected in courses designated as first or second semester courses in an occupational program

offered during the fall semester of the 1986-87 school year. Students in the second year of a program could have responded differently.

5. Students in occupational and general education function courses were similar but not necessarily identical. Therefore, there was not a one-to-one relationship between students that completed the Student Assessment of Instruction instrument in general education courses and students completing the instrument in the occupational-specific courses.

6. Students enrolled in the first general education course and the first occupational-specific course listed in the program sequence file for selected programs (or a substitute course having the same students) were included in the study. Students in these courses may not have been representative of the population; and therefore, the ratings may not have been representative.

Assumptions

This study was built upon a number of assumptions. They included:

1. Elements included on the Student Assessment of Instruction instrument were elements that potentially would have the greatest influence on overall ratings of instructors and be most important in providing data for use in identifying and ranking instructor professional growth goals.

2. Administration information and instructions given students for completing the instrument were similar in each course section.

Written instructions were provided to administrative assistants administering the assessment instrument during a preselected class period.

3. Students not present and, therefore, not responding to the assessment instrument would have responded in the same pattern as those that did respond.

4. Interpretations of each of the response choices for each item on the Student Assessment of Instruction instrument by students in each group was similar. The students responded using a common subjective metric interpretation of the response choices.

Delimitations

The study had several delimitations. They included the following:

1. Data and implications were developed for use as a basis for identifing and ranking individual instructor professional growth goals only. No attempt was made to provide data or implications for use in evaluation for other purposes or other research.

2. The study was limited to students enrolled in courses in occupational programs offered at only one institution; that is, Lakeshore Technical College.

3. The scope of the study; i.e., number of courses and students involved, was limited to computer capacity and resources available to the investigator.

CHAPTER 2

REVIEW OF RELATED LITERATURE

This chapter reports on literature related to the study of use of student ratings of courses and instructors in higher education as well as their utility in identifying individual instructor's professional growth goals. Chapter Two includes the following twelve sections: (1) Instructor Professional Growth Definition and Purpose, (2) Need for Professional Growth in Postsecondary Educational Institutions, (3) Effectiveness of Professional Growth Programs, (4) Content of Professional Growth Programs, (5) Importance and Use of Evaluation in Professional Growth, (6) Importance of Student Ratings of Courses and Instructors in Professional Growth, (7) Reliability and Validity of Student Ratings of Courses and Instructors, (8) Importance of Course, Instructor, and Student Elements; Student Demographics and Course and Program Classifications in a Student Rating of Course and Instructor Instrument, (9) Correlations and Influence of Course, Instructor, and Student Elements; Student Demographics; and Course and Program Classifications on Student Ratings, (10) Administration of Student Rating Instruments, (11) Use of Student Ratings in Identifying Individual Professional Growth Goals, and (12) Summary.

Instructor Professional Growth: Definition and Purpose

Postsecondary institutions must develop an effective professional growth program to enable instructors to better provide instruction that is relevant and acceptable to students. Importance of professional growth programs is indicated by Koerin (1980:40), "Faculty development [growth] programs have been seen as offering a means by which an institution might stimulate its faculty and improve teaching capabilities." Hunter (1982:7) emphasized this further, "The capacity for new xperience for renewal and growth is essential to teaching effectiveness."

Professional growth programs for instructors are projected to increase in number and will have greater acceptance. Altshuler (1985:60) predicted the value of such programs based on need for quality education by stating, "As the promotion of teaching excellence becomes a priority, more people besides teachers will value it [staff growth] . . . We need to develop more teaching excellence." Bender and Lukenbill (1984:18) used others to support a professional growth program aimed at individual change: "In their book, In Search of Excellence, Peters and Waterman report that a pervasive theme in excellent corporations was the tough-minded respect for the individual." They advocate that the same emphasis be placed on individuals to make improvement needed to enable colleges to fulfill their teaching mission as is expended in industry to increase productivity. Altschuler (1985:60) reinforced this, "We need to emphasize what teaching

means. . . . We need to develop more teaching excellence." In the past, institutions have been concerned with providing education and training for large numbers of students. If two-year colleges are to continue to be viable providers, "quantity education focused on increased access must give way to quality education concerned with student achievement" (Richardson and Rhodes:1985:296). Faculty growth must be a meaningful endeavor, not just a response to rapidly declining enrollments and resources. As Berquist and Phillips (1975:11) suggested, "Faculty development [growth] is more than merely a response to crises and retrenchment for it fundamentally offers new and considerably more complex paradigm in higher education than held in the past."

A variety of definitions and terms are used for the term "professional growth." Centra (1976:5) referred to the term in these words, "The term faculty development (at times simply development) is used to encompass the broad range of activities institutions use to renew or assist faculty in their varied roles." Gaff (1975:4) used the term "faculty development" as "it allowed the inclusion of activities related to the effect of development of faculty members." He also indicated that the term "faculty" was important so that "those directed toward improved teaching behavior" were directing their efforts in the same direction--toward the instructors' activities involved in improved student learning.

Harrell (1980:H1) suggested that faculty growth "may be defined as enhancing the talents, expanding the interests, improving the competence, and otherwise facilitating the professional and

personal growth particularly in their roles in instruction." He further defined a growth program in terms of objectives. He listed three principal objectives for a faculty growth program as:

1. To facilitate the professional and personal growth of faculty members in their role as instructors.

2. To improve instructional effectiveness.

3. To encourage professional growth in accordance with its [the institution's] mission and goals.

According to Griffin (1983:2), professional growth is defined as "a purposeful endeavor. It is a deliberate activity generally undertaken with specific purposes or goals in mind. The changes . . . can usually be well defined."

Professional growth should be thought of as a process in which there is improvement of the faculty member's performance as an instructor. Hammons, Wallace, and Watts (1978:1) emphasized that "development can be thought of as synonymous with improvement--improvement measured in terms of increased efficiency (doing things better) and effectiveness (doing the right thing better)."

It is proposed that several types of changes result from participation in instructor growth activities. To be more effective as an instructor, several types of changes may be required. After listing a number of changes, Tom (1986:12) summarized them as "Changes in Teacher Attitudes ---> Different Classroom Practices ---> Improved Student Learning."

Continued professional growth is necessary to enable instructors to continue to teach effectively as conditions (e.g., knowledge, students, and technology) change. Just as initial training was necessary to become an effective instructor, professional growth is necessary to remain instructionally effective. Bishop (1976:1) made an interesting analogy as he stated, "Staff development . . . activities are the career counterparts of preservice education. And as such, they provide for change, renewal, quality education, and professional competence."

An important consideration in the development of professional growth programs has been acceptance by staff at institutions so that such programs can make a difference. If teaching is considered a science, changes as a result of participation in professional growth activities can also result in more student learning. After reviewing a number of studies and also conducting a study in this area, Georgea Sparks (1986:224) concluded that this "indicates teachers can under certain conditions and in a relatively short period make desirable changes in their teaching." This conclusion is a very significant finding for the value of in-service education.

Guskey (1986:5-6) provided a brief history of professional growth programs. He stated that teacher institutes, as they were known then, began in the late nineteenth century to provide opportunity for instructors. They were not very effective because they were "characterized primarily by disorder, conflict, and criticism." Instructors were provided with resources to do whatever they wished. They did not

necessarily define goals or select activities that would result in more effective student learning.

This type of loosely organized professional growth program seems to have characterized most of the programs until the mid-1970s. After a review of a number of growth programs, Davey (1985:2) summarized them by stating that "since the mid-1970s, many colleges and universities have implemented faculty development programs aimed at improving instructional practices." Emphasis on programs aimed at improving an individual instructor's teaching competence is, thus, relatively recent.

Centra (1976:2) has also worked with professional growth over the years in his capacity with Educational Testing Service and has recently seen a shift in emphasis in growth programs. He identified two reasons for the increased emphasis in postsecondary institutions. The first was related to retrenchment and its consequence as "there has been a decrease in faculty mobility due to declining rate of growth . . . colleges can no longer depend on new staff to keep them vital; nor can teachers broaden perspectives by changing jobs." The second was related to the public's demand for quality as he reminds us that "another reason for the recent emphasis on faculty development and instructional improvement is the general disenchantment . . . with the quality of instruction." These reasons were reiterated by Centra and others even more recently (Centra, 1980:2; Eble, 1983:122; and Manns, 1985:269).

Professional growth programs are also becoming more involved. Most original programs provided resources for the instructor to work on activities related to goals set by the individual. Many recent programs have been organized and have staff to assist an instructor in developing goals and completing activities related to teacher improvement. Goldschmid (1978:233) studied a number of recently organized staff growth programs and concluded that "a number of universities have established staff development programs, often organized by special units. . . . These units are supposed to provide the impetus for teaching improvement efforts." Guskey (1986:5) further emphasized the purpose of professional growth as being to "alter the professional practices, beliefs, and understandings of school persons." Average ages of college student bodies are increasing and as instruction is being conducted in-plant for the purposes of upgrading and retraining the work force, many instructors are becoming uncomfortable when first faced with this type of instruction. Koerin (1980:43) observed that "many college professors may feel ill prepared to meet the educational needs of the new groups of college students." She further indicated that these were student groups "whose learning styles or life styles may require innovation in course design and in teaching styles."

Hammons, Smith-Wallace, and Watts (1978:4) provided additional support for Koerin's remarks regarding "student clientele," but also looked at the situation in a broader scope and included recent acceleration of the development of a technology of instruction and its effect on "redefining the teaching role." Cross (1977:11) warned

academic leaders that instructors could make necessary transitions as the new student clientele came, "but it may require a painful transition period as faculty reoriented to new skills and satisfactions." Professional growth programs were, thus, promoted to ease the transition period through the use of guidance and support.

Instructors are also remaining longer than previously at the same college. At the same time, lower enrollments have resulted in fewer new instructors being hired. Consequently, that previous source of new ideas and challenges, newly hired instructors, has been almost eliminated. As a result, postsecondary institutions have had to provide challenges and staff growth activities to compensate for this loss of regeneration which is resulting from lack of new instructors.

Hendrickson (1982:341) emphasized this as an issue to be addressed in ". . . many faculty members need stimulation and renewal if they are to maintain their interest in teaching effectiveness throughout their longer careers." Bender and Lukenbill (1984:18) explained why community colleges can no longer depend on the individual faculty member to adapt to new situations or to improve instruction alone. They defended the need for an organized professional development approach because "human nature is a reality. People gravitate to the status quo; hence, policies [regarding professional growth] must be followed by action."

Licata (1986:1) also addressed this issue as she reviewed impacts of budget restraints, steady state reallocations, declining enrollments, and retention problems as projected by educational

planners for the next decade and concluded, "These factors are further compounded by the fact that the absence of job mobility and shortened span of the career ladder have conspired to produce a feeling among some faculty of being stuck." Miller and Ratcliff (1986:316) addressed professional growth for the community college staff as well. They confirmed the importance of professional growth, "especially during periods of low staff turnover and limited financial resources."

In the past, instructors have not participated in staff growth programs as they grew older. A lifetime certification or license is no longer issued in Wisconsin at age fifty-five, so the instructor must continue to be involved in professional growth activities throughout a professional career. This has come about because new evidence indicates that faculty members are able to change their instructional presentations, even at older ages.

Adult learning research indicates that adults can learn, and they can change given proper stimuli and responses. Sprinthall and Theis-Sprinthall (1983:23) reported on studies conducted by Baltes and Schaie. Baltes and Schaie (no date) found that the "so-called decline in IQ was a myth." They also found that in "important areas of problem solving, generalization, and concept formation, there was no decline until after retirement age." Only in such areas of "vision and auditory perception and short-term memorization" did they find a decline with age. Sprinthall and Theis-Sprinthall then suggested on this basis that a professional growth program can be effective because of the

"concept of plasticity; that is, adults can learn new abilities and improve old ones throughout their teaching career."

Need for Professional Growth in Postsecondary Educational Institutions

At the two-year postsecondary level, goals of education are related to knowledge for one's own interest and preparation for further education or job entry. Therefore, teaching approaches need to be student-centered. It is important that the instructor maintain the enthusiasm and continue in efforts to "make the course relevant" (Wilson, et al., 1975:20).

Professional growth programs have recently taken a different direction. Originally programs were for the personal improvement of the faculty member. There was little or no regard for their impact on student learning. Lanier and Glassberg (1981:24) summarized this recent change in the statement:

> Recognition of the dynamics and unique qualities of teaching as well as the interdependent nature of the teaching and learning process led to the recognition in the last two decades of the need to study both these human activities (i.e., teaching and learning) competently and intentively.

Professional growth program priority in institutions of higher education must be high as well. High priority for development of curriculum and alternate delivery mechanisms is good but will not be successful unless there is a high priority on professional growth as well. Rouche and Baker (1985:20) compared resources provided for design and delivery of instruction with those provided for instructor

professional growth. They agreed with educational peers that efforts "may indeed provide a better vehicle" but warned "that little lasting excellence will occur without a focus and commitment to excellence through the performance of human beings within the vehicle."

There might be some concern that faculty members would not participate in a professional growth program directed toward the improvement of the individual. Studies conducted or cited by Guskey (1986:6); McLaughlin and Marsh (1978:75); Pellino, Boberg, and O'Connell (1981:13); and Wilson, et al. (1975:20) have resulted in evidence that was conclusive--community college instructors do care about teaching. Therefore, they are likely to participate in a program leading to improvement of their teaching skills so more effective student learning occurs. Impetus for participation in professional growth programs is summarized by John Rouche (1985:preface) as he proclaimed, "the ultimate winner or loser in our struggle for excellence is our students when we are teaching." Ross and Solomon (1985:5) concurred as they stated, "Simple deduction tells us that students will be better educated if they are better taught."

Gross and Small (1979:218) conducted a study in which they found little difference in effectiveness of growth programs incorporating student ratings between nontenured and tenured faculty. Results from both groups indicated that using student ratings leads to increased effectiveness of the growth programs. Moderately increased instructional effectiveness was reported by 35 percent of the nontenured and 44 percent of the tenured faculty. This also

contradicts a commonly held opinion that professional growth programs are important only for new instructors, not experienced ones.

Effectiveness of Professional Growth Programs

A number of factors influencing effectiveness of professional growth programs were identified. Goals and activities being identified and implemented for improvement of the individual was most often listed as being most important (Jones and Hayes, 1980:3; Lawrence, 1980:6; Pellino, Boberg, and O'Connell, 1981:17; Rodriguez and Johnstone, 1986:95; Sprinthall and Theis-Sprinthall, 1983:24-25; Stiggins and Bridgeford, 1984:29). Importance of this factor appears to be rooted in the premise, "effectively changing the behavior of another person requires the enlisting of the cooperation of that person" (Stiggins and Bridgeford, 1984:30).

Another explanation suggested is there is such a variance of talents and skills that no single program can meet the needs of each individual. Even though perceptions of their own needs may not correspond with actual areas in which they lack knowledge or skill, instructors must be able to include these needs at least in part to retain a feeling of ownership in the program. "Significant accomplishments have been achieved," concluded Beard and Hartley (1984:16) after reviewing a number of successful growth programs to determine why they were considered to be a success. "The key to the success of these units seems to be the willingness to assist the staff with the problems they bring."

Another explanation found for designing programs for individuals was that only individual needs are considered, thus giving focus to the program. Pellino, Boberg, and O'Connell (1981:17) emphasized that needs of instructors differ and that "care should be taken to design programs capable of responding to individual differences that are dictated by differences in academic discipline, predilection for work activity, and career stage." This also ensures more instructor cooperation because as Eble (1983:134) observed, "Most people resist being taught what they already know . . . . The patient must acknowledge a need for treatment if the treatment is to be effective." He used this aralogy to illustrate the importance of readiness of an instructor to participate in a growth program based on needs of the individual.

Organizing the professional growth program using definite goals for the individual as a guide was found to be the second most important factor. Knowledge and skills resulting particularly in improvement of student-learning outcomes are to be emphasized. Harrell (1980:2) emphasized that the program needs to "create a constructive environment within which the instructional process can be fully explained in the interest of student success." Faculty members also participated in activities that lead to a desired end. Guskey (1986:5) acknowledged this as he reviewed a number of successful programs and agreed with Griffin (1983:2) that "programs vary greatly in context and format, yet they generally share a common purpose . . . designed to

alter the professional practices, beliefs, and understanding . . . toward an articulated end."

A third factor indicated was the inclusion of elements that are attainable and relate to instructor satisfaction. Guskey and Easton (1983:272-273) advised educational leaders to include "primarily alterable characteristics and certainly [those] within the capabilities of most community college staff." They further suggest that programs should "encourage and motivate teachers to adopt practices and behaviors such as these." They include a listing of behaviors considered to be valuable and effective in providing instruction and learning.

A fourth factor found in successful programs was feedback. Guskey (1986:10) insisted that faculty members need to know how well they are progressing; therefore, "continued support and follow-up after the initial training" should be provided. This idea was proposed previously by Braskamp, Brandenburg, and Ory (1984:20) and Cohen (1980:322), based on their belief that some instructional changes (attitudes, knowledge, and skills) were considered "long-range outcomes." Cohen (1980:322) classified the efforts needed to improve instruction in two categories: "(1) . . . improvement of general teaching abilities in the instructor over time and (2) within-class improvement and instructional effectiveness evidenced over the course of a semester."

A fifth factor identified in successful growth programs was incorporation of another person to assist in the growth process. This person could be a peer, a manager, or a staff development specialist.

Garman (1982:49), McKeachie (1983:39), and McLean (1986:6) emphasized that change is much more likely to occur if the instructor receives consultation as well. The consultant can provide one or more of the following services:

1. Guiding the faculty member in the direction of the model.
2. Interpreting and communicating data.
3. Assisting in identifying goals and activities.
4. Calling attention to information the instructor may not notice.
5. Acting as a resource person.
6. Giving encouragement.
7. Suggesting alternatives.

The sixth factor found was that programs need to address instructor concerns and interests. Numerous staff growth programs have been organized on college and university campuses focusing almost exclusively on improving instruction. As Blackburn and Lawrence (1986:284) studied a number of these programs, they concluded that many professional growth programs "seem to have low impact and did not address issues that faculty gave higher priority to; namely, professional and personal growth." Therefore, these programs need to be redirected toward the areas the faculty members feel strongly about and are ready to devote their energies toward.

Management staff at Lakeshore Technical College incorporated these feelings into a professional growth program, which is called Lifelong Investment For Excellence (LIFE). Also incorporated into this

program were instructor motivators and change process stages. These were incorporated in response to a revelation by Guskey (1986:6) that the "majority of programs failed because they do not take into account two critical factors: what motivates instructors and the process by which change . . . typically takes place." He (1986:7) also proposed a model for an instructor-acceptable professional development program: Staff Growth ---> Change in Teacher's Classroom Practice ---> Change in Student Learning Outcomes ---> Change in Teacher Beliefs and Attitudes. Changes in student learning outcomes and instructor beliefs and attitudes provide evidence that the growth program is effective and based on the evidence instructors will want to participate.

A seventh factor identified in successful programs was continuation of the process. Effective growth programs must also involve a continual, spiral design to enhance this instructor self-actualization process. The LIFE program incorporates this idea (see Appendix F). The reason for this type of program approach is that learning new and/or modifying existing instructional techniques is complex. Wildman and Niles (1987:5-6) interjected that "the learning of a complex topic involves the cyclical interplay of three independent learning mechanisms: accretion, restructuring, and tuning." They defined the three mechanisms: (1) accretion--as the "straightforward accumulation of knowledge"; (2) restructuring--as the "creating of new memory structures"; and (3) tuning--as the "increments in speed, elaboration, flexibility, smoothness, and the like." They noted a

great deal of time is required in this process, especially in the "tuning" mechanism.

The spiral denotes a continuous-directed program in a content of ever-changing cultural, economical, political, and societal conditions. While working with the Education Commission of the States, Ross and Solomon (1985:9) pointed out its importance as the "context will provide new demands and new expectations on teachers if goals, objectives, standards, criteria . . . remain static, the result can only be another crisis." Cross (1977:12) initially alerted educators to the concern when she stated, "It is understandably threatening to have your old role yanked out from under you before you have a new role to replace it." The spiral approach has a growth rather than remediation emphasis. Instructors have been found to be more likely to participate in a growth program than a remedial one.

Content of Professional Growth Programs

A number of content areas have been identified as valuable for inclusion in a professional growth program. While there is not complete agreement of wording of items, groupings, etc., by authors in the literature, there is consensus of the type of content to be included. In Guskey's Staff Development in the Process of Change (1986:7), primary consideration for inclusion of a goal or activity is reflected by his incorporation of a quote from Bolster (1983:298) insisting that "ideas and principles about teaching are believed as true by teachers only when they give rise to actions that work." The goals and

activities "must therefore, potentially result in improved student learning." Lanier and Glassberg (1981:26) suggested inclusion of teaching skills as they reiterated that "any and all such skills identified would become a basis for improvement in teacher education."

Content areas suggested as making a difference in instruction have been the subject of a number of studies. A sampling of studies by Guskey and others in which a number of professional growth needs were identified as being useful in development of goals and activities (Guskey and Easton, 1983:266-271; McLean, 1986:5-6; Pedras, 1985:74-75; and Valverde, 1982:86-87) resulted in the following:

1. Increasing student motivation.
2. Reinforcing student learning.
3. Accommodating different learning rates.
4. Cooperation among colleagues.
5. Characteristics of effective instructors.
6. Course and curriculum development.
7. Grading systems compatible with instructional objectives.
8. Self-analysis of teaching skills.
9. Developing course outlines.
10. Writing test items.
11. Writing instructional objectives.
12. Diagnosis of learning and teaching problems.
13. Application of learning principles.
14. Course entry-exit level skills assessment.
15. Selecting, developing, and using media

16. Advising and counseling students.

17. Helping students to explore their motives, attitudes, and beliefs.

18. Techniques for evaluating instructional strategies.

19. Use of computers.

20. Utilizing group process skills.

21. Use of community resources.

22. Writing lesson plans.

23. Identification of developmental education students.

24. Textbook review and selection.

25. Applying research findings to teaching.

Identifying effective instructor characteristics (elements) has been the objective of numerous studies. Results are applicable to many community college instructors. Studies have used alumni ratings, manager interviews, manager ratings, peer interviews, peer ratings, student achievement, student interviews, student ratings, and instructor self-ratings as bases for determining effective characteristics. Some studies involved correlations, some involved factor analyses, while still others involved identification of common characteristics as the basis for conclusions reached.

Education has been defined by Cremin (1977:viii) as a "deliberate, systematic, and sustained effort to transmit, evoke, or acquire knowledge, values, skills, or sensibilities, as well as any outcomes of that effort." This definition is applicable to community college situations as the instructor's primary role in these institutions is to

teach, which includes assisting students in setting goals; helping them assimilate attitudes, knowledge, and skills necessary to reach their goals; and motivate them to achieve. Based on Cremin's definition of education, teaching "is what we do to help students learn" (Fincher, 1983:2-5) and is a "dynamic, continuous interaction between the teacher and student" (Haslett, 1977:44). Effective teaching can then be judged by amount of student progress on goals (Aubrecht, 1981:1). Heath (1982:35) defines an effective instructor as one "indeed empowering his students to become self-educating, compassionate, liberally educated people."

Importance and Use of Evaluation in Professional Growth

Evaluations of instruction are important in professional growth programs to establish a base from which goals may be identified. Evaluation provides a base from which improvement proceeds. It also provides feedback indicating the extent to which the improvement plan is being implemented.

"Evaluation of an instructor is not universally accepted, is liked by no one, and is even a threatening procedure regardless of how it is approached," according to Miller (1974:7). Nonetheless, Miller quoted Priest (1967) as he supported evaluation as "an inherent element of any organized effort to achieve a goal." Green (1970) was used by Whitley (1984:357) to promote evaluation, "Failure to evaluate instruction protects the incompetent while failing to reward the competent." Nonidentification of incompetents enables them to remain incompetent.

Through evaluation, needs of incompetents can be identified; and improvement begun.

Some argued against evaluation of instructors for any reason, including growth on the basis of "assessment by others of what goes on in the teacher's classroom is an invasion of privacy" (Millman, 1984:12). He argued, however, this should not be the case because teaching is not a solitary activity affecting no one since "the lives of students are altered in far reaching and significant ways by the instructors with whom they react." Because of that impact, evaluations for use in professional growth are necessary. He also supported his contention on the basis of law as he stated, "Besides, court cases have made it clear that students have rights and that schools and colleges have a responsibility to ensure the quality of their curriculum and instruction."

Some contended that the instructor should not be evaluated because the evaluative process has not been shown to result in more student learning over time or that proper evaluation is just too complex and difficult (Gogan, 1985:11). Others also contended that evaluations should not take place because most types of evaluation are less than perfect (Stiggins and Bridgeford, 1984:11). They also stated that "while teacher evaluation practices are becoming more systematic procedurally, most are still insufficient to support viable teacher development programs." Andrews (1985:83) disagreed with this view as he emphatically stated, "This author contends that teaching can be

evaluated nd needs to be evaluated." Entrance into a faculty member's classroom for evaluation purposes is a necessary and positive move.

Some argued against evaluation by oth rs saying that most would prefer to rely upon our own instincts and experiences for ongoing self-evaluation (Miller, 1974:9). "But," Miller cautioned, "such evaluation is limited by its nature." Instructors do not evaluate their own performance very effectively because of built-in biases.

Some have also avoided evaluation because of its association with accountability and accompanying ramifications. This attitude, if present, needs to be overcome; and the purpose of evaluation explicitly shared. Andrews (1985:xi) was more explicit when he blamed much of the fear of evaluation on a perception of "evaluation as something done by others to them."

Faculty evaluation is important, and its results should provide a basis for professional growth. Numerous authors have shown the importance of evaluation in professional growth. Licata (1986:1), for example, included evaluation in the "processes of livelihood and renewal." Others, including Andrews (1985:xi); Bolten (1973:99); Braskamp, Brandenburg, and Ory (1973:99); Fincher (1983:2); Koerin (1980:46); Ross and Solomon (1985:5); and von Glahn (1986:2), agreed that either the first or second most important reason for evaluation of instruction is to provide information for decision making in professional growth programs. In fact, Andrews (1985:xi) indicated that during the last few years, evaluations of instructors has "become a common and expected occurrence." He concluded that instructors "may

perceive the action [evaluation] in a positive light as a way of enhancing their own performance." Barr and Krueger (1978:17) also promoted student evaluations as a "means for personal assessment and improvement of teaching." Bolten (1973:99) contended that "when a teacher views evaluation as a means to improve his instruction, he accepts it as a part of the teaching assignment."

Evaluation is necessary to establish a base from which improvement is to begin. This "starting point" (Bolten, 1973:99) is necessary as a motivator because instructors will probably not learn what they think they already know or can do. Secondly, communication necessary for improvement to proceed must be based on concrete data about the instructor's performance and "through this knowledge of strengths and weaknesses, a teacher can improve his work" (Bolten, 1973:99). This occurs through the identification of goals and activities for the individual's professional growth program as collected information provides answers to the question, "What kinds of faculty development would be most useful to me?" (Miller, 1974:11). Some improvement is possible if evaluation data is provided "to help the faculty examine their own teaching for improving it" (Braskamp, Brandenburg, and Ory, 1984:19).

Evaluation must provide information of a "diagnostic nature" (Manns, 1985:271). This information then provides feedback necessary to enable improvement to continue as "human behavior is shaped, changed, and sometimes improved" (Davey and Sell, 1985:1). They also

indicate that feedback "can then be used to maintain, eliminate, or change the original performance."

Importance of Student Ratings of Courses and Instructors in Professional Growth

Although there are several sources of instructional evaluation data--peers, self, students, and supervisor--the "major, if not the only . . . at most universities" (Cranton and Smith, 1986:117) is that of students. Even information from students can be collected in a number of ways. These include interviews, rating scales, student achievement tests, and written appraisals (Braskamp, Brandenburg, and Ory, 1984:38). It seems that soliciting student ratings to assess effectiveness of the process is very appropriate and reasonable since the primary mission of any community college is the teaching-learning process (Rebalais and Durham, 1984:102). Goldschmid (1978:125) concurred, "If teaching performance is to be evaluated . . . a systematic measure of student attitudes, opinions, and observations can hardly be ignored. The data . . . strongly suggest that use of formal student ratings provides a reasonable way of measuring student reaction."

Many faculty members have questioned the use of student ratings because of concerns regarding competence of students to rate effectiveness of instructors. Age, background, experience, and extent of evaluation training of students are varied; so it would seem that evaluation results could also be varied and, therefore, not very useful in professional growth decisions. While this question has been in the

minds of many, a number of studies have been conducted to find answers to questions similar to this one. Goldschmid (1978:225) reviewed results and conclusions of a number of persons interested in finding answers to this question and concluded, "Most reviewers (e.g., Aleamoni, 1974; Centra, 1973; Costin, et al., 1971; Doyle, 1975; Falk and Lee Dow, 1971; Floodage, 1974; Gage, 1974; Grush and Costin, 1975; Menges, 1974; Miller, 1972 and 1975; Murray, 1973; Seldin, 1976; Scott, 1975; and Subkoviac and Levin, 1974) . . . have come to the conclusion that students <u>are</u> competent to rate instruction." Barr and Krueger (1978:18) also reviewed a number of studies and concurred with Goldschmid.

More recent work has shown more use of student evaluations (ratings) to provide "specific diagnostic data" (Eble, 1983:136). He also observed a substantial increase in the use of student ratings in just ten years, "Seldin's survey for 1981-82 shows that nearly 70 percent of the colleges reported using student evaluations as a major source of information about teaching . . . up from 35 percent ten years ago." Cohen (1980:321) referred to this increase as a "dramatic increase." Manns' (1985:271) studies indicated that student ratings of instruction were used by 88 percent of the two-year colleges. Cranton (1986:117) reported, "Student ratings of instruction are the major if not only component of the evaluation process at most universities in North America . . . results are used by faculty for the individual improvement of instruction."

Biehler (1978:41) argued in favor of student ratings because "in many respects, students are in a better position to evaluate teachers than anyone else." While it is true that students lack evaluation training, Biehler emphasized that "they know better than anyone else whether they are responding and learning. Furthermore, students form their impressions after interacting with a teacher for hours." The students do indeed serve as a major and direct source from whom information about instructional practices is collected (Davey and Sell, 1985:6).

One explanation for the increased use of student evaluations of course and instructor in professional growth is that studies have provided evidence that students are "discriminating judges" (Aleamoni, 1984:112). He found that students frankly praised instructors and equally frankly criticized them. He stated that his results supported conclusions reached by others (Costin, et al., 1971; Frey, 1978; Gruss and Costin, 1975; Perry, et al., 1979; and Ware and Williams, 1977).

One distinct advantage of student evaluations is their practicality. They cost faculty members relatively little time, take in all students, in all classes, and include factors that relate to the students' perceptions of learning (Eble, 1983:137). He further states, "They [student evaluations] do provide one means by which faculty are better able to judge how they are engaging the attention of all students in a class, and engaging attention is basic to learning." Student rating instruments have been developed for ease in administration and scoring. Centra (1972:31) used this factor to promote

continued use of student ratings "in view of the ease with which student ratings can be employed for instructor improvement."

Student ratings have been used in a large number of institutions and are considered to be used in a systematic manner to improve instruction. In an extensive study (almost eight hundred instructors) conducted by Centra (1976:14), results indicated that over 80 percent of the faculty perceived their use to be at least moderately effective in professional growth. Elements rated by students are actually teaching behaviors. These behaviors are the ones addressed in professional growth programs because they do have an effect on student learning. Because of this, Whitley (1984:42) emphasized that "student rating scales are indispensable sources of information in evaluation of instructors" for professional development purposes.

The value of feedback regarding need for change in the extent of progress being made toward desired changes has been accepted by many educators. Effectiveness of student ratings in providing an impetus for change has been sufficient to cause educational leaders to urge their continued use because "they appear to have sufficient impact to warrant continued use as one method of improving college teaching" (Centra, 1972:31). As he continued to study impacts of student ratings, Centra (1977:96) found that change was not necessarily a slow process once instructors became aware of differences between their perceptions and student perceptions. He found that many instructors were able to set goals and make adjustments in as little as half a

semester after receiving rating results. Over a longer period of time, even more instructors made some positive changes.

A distinct advantage of student ratings over peer or supervisor evaluations is the relative lack of previous data and personal instructional biases. O'Hanlon and Mortensen (1980:670) conceded that students have biases, but that these biases are usually not polarized in a classroom. They contended, however, that students do not have a "bias due to previous data, personal relationships, reason for observation, own philosophy and values, or favored teaching methods" which the supervisor has that may interfere with analyzing and interpreting the data objectively.

Though use of student evaluations--student ratings in particular--of courses and instructors is increasing for reasons presented, there is opposition to their use because of inherent limitations. Instructors are able to manipulate the class setting; and, therefore, student rating results may not be indicative of the entire semester (Kallison, 1986:345). Because of possible manipulation, he urged educational leaders to keep these limitations in mind as they assist instructors in professional growth programs to ensure a direction accurate and reflective of instructor needs.

Instructors and supervisors or other staff growth persons working with instructors need to heed another limitation of student ratings. Direct comparisons are not possible whenever two instructors are teaching different courses. McKeachie (1983:37) reminded educational leaders that "we are comparing apples and oranges even though we

have numerical ratings which appear to be directly comparable." He used an example to illustrate the point. "Simply obtaining a mean rating of 2.1 for one teacher and a 2.2 for the other does not mean that their teaching has magically become directly comparable."

Centra (1972:30) emphasized the need for "comparative or normative data to help the teacher understand better his or her students' rating." Currently emphasis is placed on comparative data over time for providing feedback on instructor progress toward meeting professional growth goals. The change in emphasis from comparative or normative data from student ratings to diagnostic data has occurred during the last fifteen years. Emphasis has also been placed on diagnostic data for determining individual goals for the instructor. Johnson (1984:90) indicates his disagreement with Centra as he stated, "Centra's ninth guideline (use comparative data) is only acceptable to me when used with multiple sections of the same course and when we can be sure that the students are also comparable." Diversity of students and courses is responsible for the change of emphasis. These conditions severely limit the value of comparative data.

Because of absences, completing courses early, etc., it is highly unlikely that all students enrolled in a course will actually complete a student rating instrument for that course or instructor. This could lead to a limitation known as "response bias resulting from divergent raters" (Centra, 1980:28). He suggested reducing this limitation by having a sufficient proportion respond, stating

"two-thirds of the enrolled students in a course should be the minimum desirable proportion."

One limitation of earlier student rating instruments was the nonspecific nature of the items. This limitation was addressed by a number of persons in the 1970s. Educational Testing Service's (SIR) and Kansas State University's (IDEA) forms are two examples of a diagnostic-type instrument. Hunter (1983:3) concluded, "A number of teaching evaluation instruments have been developed that are more fully systems than the older variety of forms--that is, they enable a matching of cognizant styles and teaching methods." The current instruments provide more detailed and specific information for use in professional growth programs.

Reliability and Validity of Student Ratings of Courses and Instructors

A number of characteristics regarding student rating data were identified as important in determining usability and effectiveness of that data. These included "dimensionality, reliability, validity, usefulness, and susceptibility to bias" (Marsh, 1984:342). Both instrument and process must have credibility to both instructors and administration to gain acceptance and be effective in professional improvement (Braskamp, Brandenberg, and Ory, 1984:23). Because of interest in acceptance of the student rating process and its results, "thousands of papers have been published about them" (Braskamp, Brandenberg, and Ory, 1984:243). After an extensive literature review, they noted conclusions similar to those already reached, "Student

rating instruments and data are reliable and valid." They also found inconsistencies as "suspected sources of bias" that needed to be addressed.

Correlations of four dimensions between midsemester and end of semester ratings ranged from +.70 to +.87 in a study conducted by Costin in 1968 (Costin, Greenough, and Menges, 1971:512-513). These dimensions were skill, structure, feedback, and rapport. The dimension of group interaction had a correlation of +.48. They reported that Costin (1971) obtained correlations of +.67 to +.77 for dimensions of student involvement, instructor support, instructor control, and negative affect in a study he conducted.

Time periods involved in the correlation studies varied considerably, which provided additional support for reliability and validity levels. Centra (1980:28) reported that Costin (1968) and Centra (1972) obtained correlation results over relatively short time periods--half semester and five weeks, and Overall and Marsh (1978) obtained significant correlations for student ratings collected one year apart. Aleamoni (1984:112-113) reported that Marsh and Overall (1979) and McKeachie et al., (1978) obtained results that were very similar to further substantiate earlier findings. These results were obtained from alumni who had been out five to ten years. Feldman (1978:200-201) reported similar correlations in his list of citations and results of his study. Limits of estimates of reliability can more "often be in the .80s and .90s--when the ratings of at least twenty to twenty-five students in the same classroom are averaged together."

Centra (1980:26) issued a similar directive regarding numbers of students. Blackburn and Lawrence (1986:272) also reported test-retest reliabilities of over +.90 in a recent study. Tomasco (1980:79) reported on a review of literature and concluded that more recent literature "would seem to confirm the earlier conclusions of Costin, Greenough, and Menges (1971) and others regarding rating consistency." Specifically, results reported by Carrier, Howard, and Miller (1974); French-Lazovik (1974); and Murray (1975) were cited.

Internal consistency studies have been reported at least as far back as 1954 according to Costin, Greenough, and Menges (1971:513). Correlations in the range of from +.77 to +.94 were reported by:

1. Guthrie (1954)--involved random student pairs.

2. Maslow and Zimmerman (1954)--involved random student pairs.

3. Spencer (no date)--involved random student pairs.

4. Lowell and Homer (1955)--involved odd item means versus even item means.

5. Spencer (1968)--involved negatively stated item means versus positively stated item means.

Even higher internal consistency reliabilities of +.81 to +.98 were reported by Aleamoni (1984:113).

After reviewing student rating studies conducted over the last twenty years, Murray (1983:138) concluded that "the weight of evidence suggests that student ratings of a given instructor are reasonably stable across course and time periods." He also concluded that ratings

"are affected to only a minimum extent by extraneous factors [elements] such as class size and severity of grading"--the two factors most often listed as concerns by instructors.

The review of the literature at this point in time regarding well-constructed student rating instruments seems to be no different than in 1971. Therefore, the same conclusion regarding reliability made by Costin, Greenough, and Menges (1971:513) is appropriate today. They concluded that

> . . . students can rate classroom interaction with a reasonable degree of reliability, in particular the evidence cited concerning the stability of student ratings argues against the contention (sometimes made by opponents of student ratings) that student opinions of instruction are difficult to interpret since they might be made after a particularly good or bad atypical experience (e.g., a lecture).

The validity of an instrument is important in its acceptance for use in professional growth as well. It is important to know that student ratings correlate with other measures of effective teaching factors and that students can really judge when they are learning. Studies reported in the literature contain a considerable amount of evidence regarding the high level of validity for student ratings. McKeachie (1983:37-38) reviewed Cohen's (1981) study on validity involving sixty-eight courses which reported a validity coefficient of +.40. He assured us, "This is much higher than we would expect and is probably very reassuring to those who are concerned about whether students can judge when they are learning."

Miller (1974:9) reported on a study conducted at the Center for Research and Development in Higher Education by Hildebrand and

Wilson (1970:3) that disclosed, "There is excellent agreement among students and between faculty and students about effectiveness of given teachers." White (1976:122) reported results of a study that had a "positive though moderate correlation of +.5386; significant at the .023 level" between student evaluations of instructors and learning. Concerned that questions might arise because of differences of ability of students in the fourteen-course sections, corrections were then made for cumulative grade point averages of the students. This procedure resulted in a corrected positive correlation of "+.4941; significant at the .043 level."

Dowell and Neal (1982:61) reviewed a number of validity of student ratings of instructors versus student achievement and concluded that "literature indicates statistically significant but very modest validity coefficients." Cohen (1981:281) performed a meta-analysis on forty-one independent validity studies that related student ratings of instructors with student achievement. The average correlation between student overall ratings of the instructor and student achievement was +.43 and between student overall course rating and student achievement was +.47. He concluded that results of meta-analysis "provide strong support for the validity of student ratings as measures of teaching effectiveness."

The third determinant of validity level was correlation between supervisor ratings and student ratings. While this correspondence was established over twenty years ago, it seems to be currently accepted. Costin, Greenough, and Menges (1971:516) referred

to a study done by Costin (1966) which resulted in "a significant correlation of +.49 between the mean score of all items of student ratings and chairman's ratings of overall effectiveness."

Eble and Berg (1976:13) critically reviewed several reports. One was by Rodin and Rodin (1972) in which they reported "that the students' evaluations tend merely to reflect the personal and social qualities of an instructor." Based on research findings, Rodin and Rodin concluded that "students rate most highly instructors from which they learn least." A similar conclusion was reached by Naftulin, Ware, and Donnally (1973:634) as a result of a study that has come to be known as the Doctor Fox Effect. This conclusion was based on a study in which an actor was hired to teach one section, and regular instructors taught other sections of the same course for a very short period of time. This has become known as the Doctor Fox Effect because of the name given to the actor. Rejection of this almost exactly opposite result from those of other studies was not based on methodology or statistics but on the basis that students cannot be fooled over a long time about an instructor's competence or level of student learning. Another study reviewed by Eble and Berg was one by McDaniel (1972) in which there was no confirmation of the lack of validity concluded by Rodin and Rodin. McDaniel correlated instructor-student agreement as a basis for that conclusion.

Another method for determining validity of student ratings was determination of the correspondence between students and instructors as to what constitutes effective teaching. It was assumed that if the

results were to be valuable in professional development, data should be based on the same operational definition of effective teaching. Goldschmid (1978:224) reviewed validity studies involving this relationship. These studies conducted by Aleamoni and Ymer (1973); Greenwood, et al. (1973); and Hildebrand and Wilson (1970) found "a great deal of agreement between students and faculty on what constitutes effective teaching."

Construction of the instrument is important if credibility for use of results is to be maintained. Correlations of over +.90 for well-constructed instruments have resulted. High correlations indicate that students do take completing the instrument seriously and that students can differentiate entertainment from a sound performance (Blackburn and Lawrence, 1986:271-272).

Importance of Course, Instructor, and Student Elements; Student Demographics; and Course and Program Classifications in a Student Rating of Course and Instructor Instrument

Authorities agree that course, instructor, and student elements need to be included in any student rating instrument that is to provide the basis for an individual instructor's professional development program. Furthermore, wording must be specific if desired goals for improvement are to be identified and activities selected for improvement. Goldschmid (1978:229) reviewed the reports of Frey (1976), Menges (1974), Pohlman (1975), and Sherman and Winstead (1975) and concluded that feedback must "indicate precisely what instructional elements require modification."

Marsh (1978:5-8) provided a list of elements to be included in an instrument used in student ratings of course and instructor. The following were listed: (1) learning value, (2) instrument enthusiasm, (3) organization, (4) group interaction, (5) individual rapport, (6) breadth of coverage, (7) examinations, (8) assignments, (9) level of interest, (10) work load/difficulty, (11) overall GPA, (12) percent students enrolled in same division as course, (13) expected grade, (14) reason for course and (15) class level.

Centra (1980:19) classified elements as "(1) organization, structure or clarity; (2) teacher-student interaction or rapport; and (3) teaching skill, communication, or lecturing ability." Carter (1982:7) added elements "normally considered to include statements of objectives, advance organizers, content outlines, segments of content, study questions and exercises, self-tests, etc." In addition, a need was expressed for ample procedural directions and explanations to ensure easy student movement from activity to activity.

Washton (1983:5) reviewed three studies to determine their support for student interactions in a classroom setting for increased learning. These studies, conducted by Lysakowski and Walberg (1982), Noll and Allen (1982), and Osterman (1982), provided data that lead to the conclusion that "student participation before, during, and after lectures" is important.

Cohen (1980:331) reviewed several studies to determine elements to be included in a student rating instrument as well. Various studies indicated a variety of elements:

1. Kulick and McKeachie (1975)--elements of skill, rapport, structure, and difficulty.

2. Isaacson, et al. (1964)--elements of interaction and feedback.

3. Cohen (1977)--elements of student learning progress, student attitude toward subject matter, and student achievement.

The course, instructor, and student elements need to be specific and small enough in scope so that each can be dealt with in the improvement process. Braskamp, Brandenberg, and Ory (1984:53) emphasized need for specifics in "specific and diagnostic items are the most appropriate items because they attempt to measure specific instructor behaviors or course characteristics." Omaggio (1982:261) also developed a student rating instrument. A number of elements were included as items in that instrument. The following elements were included: (1) organization of class meeting, (2) instructor's interest in subject, (3) knowledge of subject matter, (4) quality of skill in using subject, (5) clarity of explanation, (6) interest in class session, (7) freshness of presentation of instructor, (8) tolerance and helpfulness, (9) classroom activities, (10) promptness of returning homework, quizzes, etc., and (11) feedback on homework and quizzes.

Bantz and Rodgers (1985:270) also listed a number of factors (elements) that should be considered for inclusion on a student rating instrument. Their listing included: (1) course difficulty, (2) course structure, (3) intensity of teaching, (4) course work load, (5) personal life-style, (6) classroom atmosphere, (7) fairness in

grading, (8) enthusiasm, (9) interest as lecturer, (10) dynamic/ charisma, (11) communication skills, (12) personal appearance, (13) influence on students, and (14) relation with students.

Correlations and Influence of Course, Instructor, and Student Elements; Student Demographics; and Course and Program Classifications on Student Ratings

Opponents of student ratings have conducted numerous studies in efforts to obtain data that would support their beliefs that student ratings were biased or could be biased as a result of "invalidating influences" (Cashin, 1983:595) of the course, instructor, or student. Others have conducted studies to provide evidence that the students' ratings could not be unduly influenced by these elements. In all, "potentially biasing factors [elements] have been the subjects of hundreds" of studies and articles (Cohen, 1981:281). Twenty-four such elements were selected and are included with citations in the discussion to follow. The following elements are included: (1) attitudes of classmates, (2) class size, (3) course difficulty, (4) course function/ type, (5) course level, (6) course objectives clarity, (7) course objectives and content agreement, (8) feedback to students, (9) grading practices, (10) instructor age, (11) instructor experience/rank, (12) instructor interest in students, (13) instructor knowledge of subject, (14) instructor openness to viewpoints of others, (15) instructor personality, (16) instructor presentation skills, (17) instructor publications, (18) instructor respect for students, (19) instructor gender, (20) instructor-student rapport, (21) organization of materials

and presentation, (22) student achievement/grade/performance, (23) student gender, and (24) subject area.

1. Attitudes of classmates--Miller (1974:93) reported a correlation of +.72 with the overall rating of an instructor. This was significant at the .01 level. No influence on the overall rating of an instructor score by this element was suggested, however.

2. Class size--Feldman (1978:206) reviewed ninety-five studies relating class size to overall rating of an instructor. He reported that about one-third (nearly thirty studies) found essentially no relationship between class size and overall ratings of an instructor and in roughly two-thirds, found indications of a negative relationship. Correlations ranged from -.10 to just under -.30. Marsh (1982:487) reported that Bausell and Bausell (1979) found that students in a course with larger enrollments tended to rate an instructor "less favorably." He also reported on a study conducted by Marsh, Oberall, and Kesler (1979) in which they concluded that the negative relationship between class size and overall rating of an instructor "was limited primarily to ratings of [elements] Group Interaction and Individual Rapport" and not the overall rating of an instructor. They reported that Frey (1978) also obtained similar results. O'Hanlon and Mortensen (1980:669) concluded that class size influenced the overall rating of an instructor, but the correlation was not significant. Whitley (1984:42) found that there was some negative correlation between class size and overall rating of an instructor. Because the differences in class sizes; e.g., eight to ten versus thirty to fifty

or more before there was significance, were so great; and because this was considered an element "beyond the control of the teacher," he questioned the value of further study of the influence of class size on rating of an instructor.

3. Course difficulty--Course difficulty has been studied as an element suspected of having a negative effect on student overall rating of an instructor. Evidence collected indicates the difficulty of the course is not important in lowering an overall rating of an instructor. Although Bantz (1975:267) reported results of some lowering of the students' overall rating of an instructor with the more difficult courses, Braskamp, Brandenburg, and Ory (1984:47); Centra (1977:20); and Haslett (1977:50) reported that course difficulty had one of the smallest negative correlations with the overall rating of an instructor.

4. Course function/type--Aleamoni (1984:113-115) reported that results indicated that student overall ratings of instructors in required courses were lower than in elective courses. Blackburn and Lawrence (1978:272) reported "slight biases of higher ratings [instructor ratings] going to elective (over required) courses." Andrews (1985:83-84) reviewed results of studies conducted by Centra and reported that "students tend to rate instructors of elective courses or courses in the major more highly than courses taken to fulfill a college requirement." Lein and Mertz (1976:3) reported on a study conducted by Behling and Mertz in which they concluded that "an instructor's evaluation does not depend on whether he or she teaches an

elective or required course." Aleamoni (1984:113-115); O'Hanlon and Mortensen (1980:669); and Stumpf, Freedman, and Aguanno (1979:120) reviewed literature and concluded that students rate instructors in elective courses "to a minor extent higher" than in required courses.

5. Course level--A very limited number of studies have been conducted to determine the correlation between the level of the course and the student's overall rating of an instructor. These have obtained data indicating various correlations. Aleamoni (1984:113-115) reported that no conclusion could be made because of the variety of the results obtained. Aleamoni (1984:114) reviewed research studies relating to the question and cited eight researchers who "reported no significant relationship between student status (e.g., freshman, sophomore, etc.) and ratings assigned to instructors." Lein and Merz (1976:3) concluded after reviewing several studies that "an instructor's evaluation does not depend on whether he or she teaches introductory or advanced courses." Marsh (1980:236) also concluded that the level of instruction did "not seem to make much difference" in the student's evaluations of teaching effectiveness.

6. Course objectives clarity--The course objectives must be clarified in order for the student to understand the intent of the instruction and the achievement expected. Review of research results supports a positive correlation between the clarity of course objectives and the overall rating of an instructor. Centra (1972:5) reported significant differences between student overall ratings of instructors who presented clear course objectives to their students and

those who did not. Miller (1974:Appendix B) reported a correlation of +.68 between clear course objectives and student's overall rating of an instructor which was significant at the .01 level.

7. Course objectives and content agreement--Several researchers have conducted studies that support course objectives and content agreement as a positive influence on student ratings of instructors. Centra (1972:5) found there were "signficant differences . . . [in the] amount of agreement between objectives and what was taught" and the overall rating of an instructor. Miller (1974:Appendix D) also supported this expected correlation reporting a correlation of +.67 which was significant at the .01 level.

8. Feedback to students- Very few studies seem to have addressed this element. The results, however, suggested it is not whether or not feedback is provided but rather the type and manner in which the feedback is given that is important. Tomasco (1980:81) summarized results of the review of studies in this way: "Teachers with favorable evaluations . . . provide feedback in a humble, non-authoritarian style." Even here the significance of the difference between the groups of instructors is questionable because the results seem to be inconclusive.

9. Grading practices--Several studies have dealt with the grading practices of the instructor. Centra (1972:5) found a significant difference between the rating of instructors who informed students how they were going to be evaluated and graded and those that did not, but not between those instructors in each group using different methods

to evaluate or grade students. Haslett (1977:50) noted some consistency in the correlations found between an instructor's evaluation method and the student's overall rating of an instructor, but the correlations were not significant. Lein and Merz (1976:3) reported that the results of Behling and Mertz' study indicated that "imposing academic rigor upon students will not in itself result in poorer student evaluations of the instructor." Lichty, Vose, and Peterson (1978:10) disputed the argument of some that state that instructors can inflate grades to maintain or improve the overall instructor ratings. They argued that "if students perceive a university education as an inferior 'Giffen,' good students will reduce their overall [instructor] evaluations." Review of research studies of the late 1970s by Tolefson, et al. (1980:1-2) indicated that McKeachie (1979) and Palmer, Carlines, and Romer (1978) found no significant correlation between grading practice and the overall rating of an instructor.

10. Instructor age--The element of instructor age was also listed as a concern because there seems to be a general question about how well older instructors are able to relate to students. This may have been more of a concern previously than it is now because the age range of students in courses at the two-year postsecondary institutions is increasing. A number of studies have been reported on this element with mixed results. Genova, et al., (1976:29) reported that Bryson (1974) "found a positive but not significant correlation" while Koerin (1980:44) concluded that age apparently did "not correlate with judgments of teaching effectiveness."

11. Instructor experience/rank--Centra (1972:18) reported results indicating that evidence did not support the assumption that student overall ratings of instructors correlate with ranks of instructors. He stated that "differences were not significant." Genova, et al., (1976:29-30) concurred with that assessment as they stated, "The age, experience, and rank of the teacher had been found to be positively correlated to student ratings"; however, the differences were not found to be significant. Stumpf, Freedman, and Aguanno (1979:120) concluded that "external variables [instructor experience included] may have some minor impact on the ratings of instructors, but they do not explain much of the variance in student ratings or faculty performance." Reported results in the literature did not indicate significant correlations between instructor experience and student overall ratings of instructors.

12. Instructor interest in students--Several studies were conducted to determine the extent of this expected relationship. Centra (1972:5) and Tomasco (1980:81) reported a significant difference for this element. Hunter (1982:7) suggested that "as evaluators, they [students] usually are generous toward any teacher who is genuinely interested in their welfare and trying his best to create a learning climate." This would seem to explain why there is a positive relationship between the instructor's interest in students and the student's overall rating of an instructor.

13. Instructor knowledge of subject--The general expectation is that this element would have a positive influence on the student's

overall rating of the instructor. Only one study was identified that dealt with the influence of this element. Haslett (1977:50) concluded that instructor competence is shown to consistently influence student overall ratings of instructors. However, student level of competence seems to have no correlation with the overall rating of the instructor. This would indicate that instructor knowledge is an important element whether or not that knowledge has been transferred to the student.

14. Instructor openness to viewpoints of others--Openness to viewpoints other than one's own would seem to be positively correlated with overall ratings of an instructor. Only one study was found that dealt with openness of an instructor to viewpoints different from the instructor's. Centra (1972:5) reported that there was a significant difference in the correlations between the various levels of openness to ideas of others and the students' overall ratings of instructors.

15. Instructor personality--Instructors with certain personality types could exhibit behaviors that have an effect on student feelings, and students could respond to this effect through either a lower or a higher rating. A study conducted by Murray (1975:68) supported this contention. Four personality types identified in his study, leadership, extroversion, objectivity, and lack of anxiety, accounted for two-thirds of the between-instructors variance in student ratings of instructors. Tomasco (1980:81) presented results that "confirm these assumptions and suggest the teachers with favorable evaluations have specific personality characteristics which students consistently identify."

16. Instructor presentation skills--It is reasonable to expect a positive correlation between presentation skills exhibited and the overall ratings of the instructor exists. Braskamp, Brandenburg, and Ory (1984:47) reported a moderately positive correlation between the level of teaching skills exhibited and the overall ratings of instructors. Genova, et al., (1976:30) and Omaggio (1982:266) reported correlation results from their studies ranging from +.57 to +.91, and Omaggio concluded that "the more effective teacher . . . is one who tries to incorporate such personalized language into the daily lesson plans." Concepts and ideas must be presented so the students can understand them. Because students have been shown to be discerning individuals, it should follow that clear explanations by the instructor would influence the overall rating in a positive manner. A study of the degree of explanation of ideas was also found to have a significant positive correlation of +.68 with the overall ratings of instructors (Miller, 1974:93).

17. Instructor publications--An increased number of publications would tend to provide additional information and experience for use in the classroom. There is a question as to whether higher overall ratings would also occur. The results of studies do not support higher ratings to any extent. The number of publications "may have some minor impact on the rating of instructors, but they do not explain much of the variance in student ratings of faculty performance" (Stumpf, Freedman, and Aguanno, 1979:120).

18. Instructor respect for students-- Centra (1972:5) supported an assumption that respect for students and overall rating of the instructor would have a high positive correlation. He found a significant difference when the instructor respected student's ability enough to expect them to "think for themselves." Tomasco (1980:81) confirmed this assumption as well when he obtained results that indicated a high positive correlation when instructors had "respect for student opinions."

19. Instructor gender--Results of a study by Costin (1971:520) indicated that gender of an instructor had no influence on the student overall ratings of instructors. Subsequent studies by Centra and others (Centra, 1972:18; Elmore and LaPointe, 1975:370; Haslett, 1976:53; and Stumpf, Freedman, and Aguanno, 1979:12) resulted in similar findings. No significant difference was found between overall ratings given to female instructors and those given to male instructors regardless of the gender ratio of students in the course.

20. Instructor-student rapport--Several studies were conducted to determine if a relationship between instructor-student rapport and student overall ratings of instructors could be found. Bantz (1985:207) reviewed the literature reported by Centra (1979), Cohen (1981), Dowell and Neal (1982); and Marsh (1980) and used their results as a basis for concluding that "the results of these studies were highly suggestive." However, results and analyses of her own were quite definite with "the resultant squared multiple coefficient" of .09. This negligible relationship definitely did not support any type

of relationship between instructor-student rapport and student ratings. Haslett's (1977.51) review of studies conducted by Cashin (1974) supported the consistency of the evidence as results indicated some positive correlations with overall ratings of instructors which were not, however, significant. She concluded, "This adds more support to the claim that student evaluations indeed measure and reflect teaching effectiveness and not popularity." Popularity is an indicator of student-instructor rapport, not teaching effectiveness.

21. Organization of materials and presentation--Several researchers have conducted studies to determine if the evidence found to determine the correlation between how well the materials and presentations are organized and student overall ratings of instructors. Bantz (1985:267) reported that one of the factors affecting students' rating of instructors was "organization." Braskamp, Brandenburg, and Ory (1984:43) reported a correlation of +.80, which they termed "fairly high," and, therefore, a factor to consider in student overall ratings of instructors and in diagnosing a low overall instructor rating. Miller (1974:Appendix B) reported a corr on of +.67, which was highly significant (at the .01 level), between organization and planning of class presentations and student overall instructor ratings.

22. Student achievement/grade/performance--A number of studies found positive relationships between the grade given to students and their ratings of instructors. Barr and Krueger (1978:18) indicated a contradiction when he reported a number of highly significant correlations between expected grade and Student Evaluations of

Teaching (SET) ratings but admitted that the "literature presents mixed conclusions" even though not significant "in almost all cases the correlations between grade and teacher rating yields a positive coefficient." In most studies he reviewed, the correlation coefficient is approximately +.20, which was interpreted as significant or not significant depending on the number of subjects in the study. Bausell and Magoon (1972:102) admitted the results of their study differed from most others in that a "significant relationship was found to exist between student grade and rating given the instructor." Braskamp, Brandenburg, and Ory (1984:47) reported a moderately positive correlation between grade and ratings of instructors. Snyder and Clair (1976:81) reported that students who obtained higher grades "rated the instructor as a better teacher overall." Penfield (1978:20) reviewed a number of studies conducted over a long period of time and concluded that "there appears to be a slight positive relationship between expected grade in the course and student overall teacher ratings. This trend seemed to have occurred in the last ten years." Hoffman (1978:291) reported "generally low but statistically significant correlations." Costin (1971:518-519) reviewed a number of studies and found significant relationships even though the coefficient was usually weak, less than .30 in Anikeef (1953), Caffrey (1969), Echandia (1964), Elliot (1950), Rayder (1968), Rubenstein and Mitchell (1970), Russell and Bendig (1953), Spencer (1968). Stewart and Malpaso (1963), Treffinger and Feldhusen (1970), Walker (1969), and Weaver (1960).

Other studies indicated a tendency for almost no influence by the grade received by the student. Aleamoni (1984:115) reported a none to weak positive correlation between grades received and overall instructor ratings. Garverick and Carter (1962:218) reviewed the results of a number of studies and concluded. "Research on this subject has not settled the issue. . . . some bias in the direction of expected grade was found." Frey (1973:85) reported in a rebuttal that "there was no evidence of a strong positive relationship between final exam grades and the [students'] ratings."

Costin, Greenough, and Menges (1971:518-519) conducted a review of studies and also found no relationship between student grades and student ratings of instructors. They observed no relationship in the following studies: Bendig (1953), Blum (1936), Cohen and Humphreys (1960), Eckert (1950), Guthie (1949 and 1954), Heilman and Armentraut (1936), Hudelson (1951), Remmers (1928, 1930, 1939, and 1960), Russell (1951), and Voeks and French (1953). In a more recent study, Blackburn and Lawrence (1986:272) concluded, "Scores are not related to the grade that the student expects to receive or does get."

The previous studies related the actual grades received to the student ratings of instructors. One group of researchers was interested not in the actual grade but in the effect of a student receiving a grade different than that expected. Tollefson, et al. (1980:1-2) reported mixed results after reviewing a number of studies, but a statistically significant correlation was found when a grade lower than expected was given to the student.

The element (grades given to students) has probably been studied more than any other element to determine its effect on a student's overall rating of an instructor. The results of the studies have been varied and inconclusive; however, there seems to be support for a tendency toward a positive correlation between the student's achievement or actual or expected grade and the student's overall rating of the instructor. There is also support for a negative correlation between achievement or grade and the student overall instructor rating when the student's achievement or grade was less than expected.

23. Student gender--The gender of the student making the overall ratings of instructors seems to have little influence on the ratings according to the literature. Costin (1971:520) reviewed a number of pre-1970 studies and reported no significant influence of gender of the student or the gender of the instructor on overall instructor ratings. These included Bendix (1953), Caffrey (1969), Downie (1952), Elliot (1950), Heitman and Armentrout (1936), Lovell and Haner (1955), and Remmers (1936). In only one study (Bendix. 1952) was there a tendency toward increased overall rating of female instructors by female students, and this tendency was not significant.

Elmore and LaPointe (1975:370) and Haslett (1976:53) reported no significant difference between overall ratings of instructors from students of the same or opposite sex. When Elmore and LaPointe examined individual items, they found that in only one item, "showed an interest in students," was there a significant difference in the ratings--female students rated female instructors higher, and male

students rated male instructors higher. Barr and Krueger (1978:22) reported that no influence of student's gender was found in the SET results. When student ratings were compared for the instructor of the same or opposite gender of the student, there were conflicting reports of correlations. According to Aleamoni (1984:115), there did not appear to be any significant difference in student ratings of instructors of the same or opposite gender of the student.

24. Subject area--There does not seem to be a correlation between subject area and student's overall rating of the instructor. Only one study was identified that addressed the question of correlation between subject area and the overall rating of the instructor. In this study, the results "were not significant" (Centra, 1972:18).

Administration of Student Rating Instruments

Procedures used in administering the student rating instrument could influence ratings made by students and the usefulness of results themselves. For this reason, it is generally agreed that instructor influence should be eliminated from procedures to the extent possible. Several factors were examined for this study. They were: (1) anonymity of students, (2) presence of the instructor, (3) systematic nature of procedures, (4) timing of administration, (5) type of instrument, and (6) voluntariness of instructor.

There appears to be a general feeling that people should be accountable for their actions. Rating courses and instructors are

actions of students, so it can be expected that they identify themselves when completing the rating instrument. It is also believed that fear of instructor retaliation will result in inflated ratings if students need to identify themselves. This results in a dilemma. Centra (1980:44) reported results of two studies conducted to determine the extent and direction of the influence of having or not having students identify their ratings. He reported that Stone, Rabinowitz, and Steel (1977) concluded, "Although students who identify themselves are expected to be far more generous in their ratings . . . evidence does not totally support this expectation." He also reported on a companion study conducted by the same researchers during the same year after which they concluded that expected higher ratings were found when students signed the form. Schrader (1986:3-4) reported that only 5 percent of the students indicated they would have rated the instructor differently had the student's name been required. The general conclusion reached as a result of reviewing reasons for their answer was that students were interested in providing accurate data to help instructors improve. It is possible that some students may rate an instructor higher because they feel reprisal for lower ratings from the instructor in future courses, recommendations, etc. It seems that most students, however, did not have that fear.

The extent to which an instructor's presence influences student overall ratings of the instructor has been studied, and there seems to be some level of influence. Instructor intimidation was suggested as a reason for inflated rating levels that resulted. Miller

(1974:29) reported results of a study conducted at the University of Kentucky in which he concluded, "Student ratings were statistically higher--significantly so--when the instructor was present." This would support recommendations that someone other than the instructor should administer the rating instrument and that the instructor should not be in the same room while students are completing the rating instrument.

In order for student rating instruments to be used with maximum effectiveness, the instruments should be administered and collected in a responsive and systematic manner (O'Hanlon and Mortensen, 1980:669). Some conditions to be addressed are when in the semester the instrument is administered, instructions to the student for completing the instrument, detail and procedures for administration and collection of the instruments, and time available for completion of the instrument. For data to be useful in identifying the individual's professional growth goals and evaluating progress toward meeting those goals, student ratings on similar elements is also necessary.

While open-ended questions need to be a part of the evaluation (O'Hanlon and Mortensen, 1986:665), they would probably not provide the instructor with sufficient numbers of students indicating the same concerns or levels of concerns on which to base the growth program. In addition, an educator's interpretation of the remarks may not be the same as the meaning intended by the student. This difference potential makes this type of questionnaire less desirable.

Another factor is concern for practicality with this type of instrument when large numbers of students are involved. Most colleges

collect data for evaluating instructors from students; and because evaluations are collected from all students in many or all courses, "it has become common to use standard or semistandard rating forms" (O'Hanlon and Mortensen, 1980:664).

The timing of the administration of the rating instrument has been a concern of a number of researchers as well. It was recommended that ratings be based on sufficient instructor contact to provide the student with a sound basis for making judgments. It would seem that by midsemester, sufficient time has elapsed to enable the student to do accurate ratings. Aleamoni (1978:296) reported the results of two studies by Miller (1971) and Centra (1973) in which the same conclusion was reached. "No significant differences were found between the mid-semester and end of semester student ratings of instructors." These support the recommendation that instruments be administered at some time between midsemester and the end of the semester.

The procedure for selecting courses for administration of rating instruments was also of interest. To what extent can the instructor bias the results by volunteering or not volunteering courses for administration of these student rating instruments has been a question. Voluntariness could be expected to positively influence the ratings given the instructor as only those courses that were expected to produce high ratings would be volunteered. A study conducted by Cashin and Perrin (1983:595) provided results which did not support this basis of influence while they candidly admitted that some differences occurred. They concluded that "none of the differences was of

practical significance." There will probably be no effect on the ratings if the instructor volunteers to have students in courses complete the ratings or if a supervisor of the instructor or other administrative person directs to have students in courses taught by the instructor complete the rating instrument.

Use of Student Ratings in Identifying Individual Professional Growth Goals

Widespread agreement was found that the most important purpose of evaluation is to provide data that will enable the individual instructor to identify professional growth goals. The instructor has the "major responsibility for the identification of learning objectives" (goals) for the development program (McLean, 1986:6). In the process of identifying these goals, she emphatically states that the instructor must receive feedback on performance. This feedback is provided by the student ratings data on each of the various elements, not just the overall instructor rating alone. The importance of student ratings and improvement of student achievement is illustrated by a study reported by Aleamoni (1984:140-141), "When the student ratings were used to identify goals and activities completed in accordance with the goals, they not only received higher ratings at the end of the year; but their students also scored higher on achievement tests." Altshuler and Richter (1985:59) emphasized that "teachers need to know how they are perceived and valued" in order to develop their goals. The student ratings are an "indication of their teaching success . . . the results to shape their subsequent pedological behavior" (Bausell

and Magoon, 1972:1013). Biehler (1984:41) also emphasized that instructors should "take seriously the opinion of students" when developing their goals for professional growth. Instructors interested in improving their instructional skill identified goals to assist them in determining the growth to be pursued. Braskamp, Brandenburg, and Ory (1984:20) emphasized that in order to improve instruction, the instructors need to "specify goals and receive feedback about their progress towards achieving those goals." They (1984:24) also reminded educational leaders and staff development specialists that it is important that student course and instructor characteristics [elements] also be taken into account when information is interpreted for assessing teaching competence. They (1984:26) then reiterated, "Evaluation of professional development [growth] and improvement of instruction are inseparable."

Miller (1974:4) indicated that this is also an important consideration because these elements are "dependent on local issues." Types of students, types of programs, and types of courses are unique to each institution. Experience with the extent of influences of each of the elements is important when using the student ratings as the basis for identifying the individual's professional growth goals. Murray (1983:138) also emphasized the importance of the local considerations in "improving the diagnostic and remedial value of student instructional ratings."

The more known about local college issues, the more realistic goals will be. This should lead to increased student learning as a

result of the instructor participation in the growth program. Instructors continue participating in a growth program that results in increased student achievement and increased levels of student ratings because they see a payback for the time and effort invested. Student ratings data can then be used to help instructors determine where their strengths and weaknesses lie (Cohen, 1980:323). Harrell (1980:5) supported this idea with almost identical words regarding faculty strengths and weaknesses. He further emphasized the importance of the student ratings in professional growth as he states, they become the "principal basis for faculty selection of an activity or group of activities for faculty development."

Use of student ratings cannot be construed as the solution to all teaching problems. They only indicate what students perceive to be the instructor's strengths and particular weaknesses related to less than effective student learning (Hunter, 1982:7). The strengths can then be further developed and the weaknesses addressed in the professional growth program.

Summary

In summary, review of the literature regarding elements indicates that potential biasing elements have been the subjects of many studies and articles. Conflicting results have been reported. Therefore, it is difficult, if not impossible, to state that an element will or will not affect the student ratings of instructors.

Even when significant correlations were found between elements and the students' overall ratings of instructors, in many instances an explanation supported a corresponding relationship rather than a biasing or cause-effect relationship. For several elements (e.g., feedback and grading practices), it appeared that it was not the element itself but rather how the element was presented to students that caused the influence. This supported the need for delving into the how of an element; i.e., being more diagnostic oriented.

Variations in definitions, procedures, etc., also make it somewhat difficult to predict the extent of an element's influence on student overall ratings of instructors in a particular situation. The reviewed literature supported the need for studies in which the influence of each element on student overall ratings of instructors are addressed at the local postsecondary institution.

A number of elements were identified in the literature as having a significant correlation or a generally positive trend with the students overall ratings of instructors. The following were included: (1) explicit explanation of grading practice, (2) good objectives and content agreement, (3) good organization of instructional materials and presentations, (4) good actual and expected grade agreement, (5) exhibited instructor interest in the student, (6) exhibited instructor openness to views of others, (7) effective instructor presentations, (8) compatible instructor personality, and (9) exhibited instructor respect for students.

The element (class size) appeared to have a negative influence on the overall ratings of instructors. However, even though it may influence the overall ratings of instructors, the significant difference occurs only when comparing instructors teaching courses (or sections of courses) having considerable differences in the number of students. In most institutions, great differences are exceptions, not the rule.

Several results supported the possibility that instructors could manipulate an element over a short time period as was illustrated by the Doctor Fox Effect (Naftulin, Ware, and Donnally, 1973:634). However, most results indicated the majority of students were not influenced to any great extent by short-term efforts. Most student judgments seem to be based on the long-term effects of the element.

Results of the potential biasing effect of the twenty-four elements included in this section as reported in the literature were not sufficiently conclusive to transport their effects to student ratings at other colleges. Findings in the literature did, however, support the use of student ratings as an important component of the data base on which instructor professional growth goals could be developed. The results also supported further study of the biasing influences of elements on student ratings of instructors at individual colleges. Adjusting student ratings in accordance with known biasing effects of elements will then be possible. This will enable the college to obtain data having increased validity for decisions regarding instructor growth goals.

CHAPTER 3

PROCEDURES AND METHODOLOGY

The purpose of this study was to refine a part of the instructional assessment procedures at LTC. This was accomplished by obtaining and analyzing data for course, instructor, and student elements to determine their relative relationships to student overall ratings of instructors. Equally important, this study also determined the biasing effects of particular course, instructor, and student elements; student demographics; and college course and program classifications on student overall ratings of instructors. The data were student ratings of particular instructional elements and student overall ratings of instructors in courses taught during the 1986-87 fall semester at the two-year postsecondary institution, Lakeshore Technical Institute, now named Lakeshore Technical College. The Student Assessment of Instruction (see Appendix H) instrument was used for obtaining data.

The study was designed to address the relationship of the various course, instructor, and student elements on students' overall assessment of instructors for selected courses in occupational programs. Included in this chapter are the following three sections: (1) Research Questions and Hypotheses, (2) Procedures for Collecting the Data, and (3) Procedures for Treating the Data.

Research Questions and Hypotheses

Research Questions

This study was undertaken to answer the research questiors included in Chapter 1. The research questions were:

1. Is there a relationship between student overall ratings of instructors and student ratings of elements in the three major groups (course, instructor, and student) in the assessment of instruction at LTC? If so, what is the nature of the relationship?

2. Is there a relationship between student overall ratings of instructors and student ratings of particular items within each of the three major element groups, student demographics, or place of the course in college academic programming?

Research Hypotheses

These questions were rewritten so that statistical test data analyses might provide answers directly. The research questions were rephrased into the following statistical research null hypotheses:

H(01): Differences in student overall ratings of instructors are related to different ratings that students give to the elements, as an aggregated measure in the rating instrument, that pertain to the (a) course, (b) instructor, and (c) student. The aggregated measure for each element is the composite of the separate items pertaining to the indicated elements.

H(02): Differences in the student overall ratings of instructors are related to the ratings students give to each of the items on the rating instrument that pertain to the first element in research question one (the course).

H(03): Differences in the student overall ratings of instructors are related to the ratings students give to each of the items on the rating instrument that pertain to the second element in research question one (the instructor).

H(04): Differences in the student overall ratings of instructors are related to the ratings students give to each of the items on the rating instrument that pertain to the third element in research question one (the student).

H(05): There is a significant difference between the overall ratings of instructors by students in courses having one function and by students in courses having another.

H(06): There is a significant difference between the overall ratings of instructors by students in one course level and by students in another.

H(07): There is a significant difference between the overall ratings of instructors by students in one age group and by students in another.

H(08): There is a significant difference between the overall ratings of instructors by students of one sex and by those of the other.

H(09): There is a significant difference between the overall ratings of instructors by students from one division and by students from another.

H(10): There is a significant difference between the overall ratings of instructors by students expecting one grade in the course and by students expecting another.

H(11): There is a significant difference between the overall ratings of instructors by students exerting one level of out-of-class preparation and by students exerting another level.

H(12): There is a significant difference between the overall ratings of instructors by students feeling the course had one level of difficulty and by students feeling the course had another level.

These null hypotheses were tested at the .05 level of significance using a two-tailed test. Multiple Regression Analysis and One-Way Analysis of Variance statistical techniques were used to test the hypotheses.

Procedures for Collecting the Data

Population and Sample Used in the Study

The college offers fifty associate degree and vocational diploma programs. Approximately 800 students were enrolled in these programs during the fall semester of 1986-87. In order to develop a sample of this population, students in eighteen programs were selected for the study according to the following criteria:

1. Student ratings of the instructors of both selected courses in the program could be obtained. The college does not require student assessments in all courses offered.

2. Students were in a program designed to be completed on a full-time basis in one or two years. Students in programs designed to be completed on a part-time basis in five years were not included.

3. Students were in a program that included both a general education course and an occupational-specific course during the 1986-87 fall semester. A number of programs did not include a general education course during the fall semester. Students in these programs were not included in the study.

The population consisted of 806 students enrolled in the first year of full-time occupational associate degree or vocational diploma programs having both an occupational-specific and a general education course offered during the fall semester of the 1986-87 school year. From this population, a sample was drawn by using all students in the first occupational-specific course and the first general education course listed in each occupational program selected for inclusion in the study. Student ratings for the second course listed in the program sequence file were substituted if ratings could not be obtained for the first course in each function group. Both the first course and the substitute course included the same students. If student ratings could not be obtained from either the first course or the substitute course in both function groups, students from the particular program were excluded from the study. Most programs had one or only several

occupational-specific courses and one general education course offered during the fall semester. The sample included 262 students enrolled in eighteen programs selected for inclusion in the study (see Appendix G). This number represented 33 percent of the students enrolled in first or second semester courses of the first year of full-time occupational programs during the 1986-87 fall semester.

Of the possible 524 (262 students each completing ratings in two courses) instruments, 499 completed instruments were obtained (see Table 3.1). Of this number, 457 (87 percent) were usable. Specific ratings or information needed for the study was missing on forty-two instruments. Students were not told beforehand when the instrument was to be administered. Student absences on the date scheduled for administration of the assessment instrument were judged to be normal by the instructors. No pattern of missing ratings or supplemental information on the assessment instrument was observed that could be attributed to gender of student, course function, or program level. Therefore, it was concluded that there was no difference between those students not present or not completing the entire instrument and those students present and completing the entire instrument. Because of anonymity used in administering the instrument and missing supplemental information on some assessment intruments, the demographics of some students could not be determined.

Instrument Used in the Study

The Student Assessment of Instruction instrument (see Appendix E) developed by members of an LTI quality circle group during the

1984-85 and 1985-86 school years was used for collecting data. The development of the instrument was not a part of the MARP herein reported. The Student Assessment of Instruction instrument consisted of three groups of items. These items represented particular (1) course elements, (2) instructor elements, and (3) student elements. One item requiring an overall assessment of the instructor was also included. In addition, information on program, course function and level, and student age and gender was requested. The student's name was not requested.

Table 3.1

Number of Students and Instruments Used in the Study

Item	Number
Number of students enrolled in eighteen programs included in the study	262
Number of completed assessment instruments expected (number of students enrolled times two courses per student)	524
Number of completed assessment instruments received	499
Number of usable assessment instruments received	457
Percent sample students in sample of total students (262 ÷ 806 x 100)	33
Percent usable replies $\frac{\text{number of usable instruments}}{2}$ ÷ number of students enrolled x 100 ($\frac{499}{2}$ ÷ 262 x 100)	87

Each item had five choices with gradations similar to a Likert scale except that each of the choices was labeled with "A" being the most positive. The choices varied as were appropriate for the item. The student was to select the one that most agreed with the opinion of the student. The student recorded each choice on the instrument.

The validity of the instrument was addressed during its development in 1984-86. This was accomplished by comparing the items included to those items included on other commercially available forms and to those included in a number of research studies. The instrument was also submitted to the entire instructional staff of approximately 120 instructors, managers, and specialists for reactions and comments. Staff members were informed that the instrument for collecting data was to be used in identifying goals for instructor professional growth and that they were to react to it and make suggestions accordingly. The circle reviewed the staff comments and suggestions and made decisions regarding the addition or deletion of items and modifications in wording as necessary to improve the wording of each item after each of the three administrations.

The reliability of the instrument was addressed by administering the instrument to students in selected courses at the end of the summer session and then again at the end of the first and second semester of the 1985-86 school year. Revisions were made, based on instructor and student written comments, after each administration. A revised instrument was used for each succeeding term. The sample of courses selected included day and evening courses, lecture and

laboratory courses, single-instructor-taught and team-taugnt courses, and occupational and general education courses.

When the Student Assessment of Instruction instrument was first administered, students were requested to select the one choice that best fit their feelings regarding the item and to further clarify the choice through the inclusion of a written comment, if desired. In addition, students were to include comments about the wording, choices, and/or difficulties encountered in selecting a choice for each item. Item choices and comments were reviewed by circle members and modifications made after each administration. Approximately 400 students were involved in this process.

The actual reliability of the assessment instrument was determined to obtain a measure of the consistency of student responses in this study. The reliability test used was the Equal Spearman-Brown Reliability component of the Split Model (SPSS Inc., 1986:860). This reliability test was selected because the instrument contained thirty items used in the study, fifteen in each half; item number one was not used because the courses were required. The test yielded a reliability coefficient of +0.82.

Administration of the Instrument

Instructions for administering the assessment instrument were developed (see Appendix H). These detailed directions were to be followed by each of the four division assistants in administering the instrument. Information on the importance and use of the data obtained was also provided to the students.

The instrument was scheduled to be administered at the beginning of the class period. The class period selected by the instructor was convenient and interfered least with other instructional activities. The instrument was administered in selected courses between the thirteenth and seventeenth week of the semester.

The instrument was also administered to students in a number of courses not selected to be a part of the study. This was done because either the instructor desired student assessments in additional courses or sections of a course than the one(s) included in the study or desired student assessments in courses because the instructor had not taught a course or section of a course included in the study. Although the data for these additional courses or sections of courses were collected, tabulated, analyzed, and returned to instructors for use in discussions with associate administrators, the data were not included in the study.

Students responded on a duplicated copy of a preliminary Scantron Corporation printed machine-scorable instrument. This change in the procedure was required because modifications during the development of the paste-up resulted in a delay in the actual printing of the instrument. Therefore, commercially printed copies did not arrive until after the scheduled administrations of the instrument. This delay and use of duplicated copies necessitated a transfer of student responses to printed instruments by research office staff, once they arrived. An edit check was performed to ensure accuracy of the transfer.

The instrument was administered to students enrolled in general education and occupational courses in eighteen programs. These programs were:

1. Administrative Assistant--Information Processing.
2. Administrative Assisstant--Secretarial.
3. Associate Degree Nursing.
4. Child Care Services.
5. Court and Conference Reporting.
6. Data Processing.
7. Dispensing Optician.
8. Electrical Power Engineering Technician.
9. Electromechanical Technology.
10. Electronics Technician.
11. Graphic Arts
12. Marketing.
13. Materials Management.
14. Mechanical Design Technician.
15 Office Assistant.
16. Pharmacy Technical Aide.
17. Plastics Technician.
18. Word Processing Specialist.

Of the twenty-four courses selected for the study, eight were classified as general education function and sixteen as occupational-specific function. Because a number of courses were classified as the same function for more than one program, less than thirty-six courses

were selected. In some cases, students were in separate sections of a course according to the particular program. In others, students from more than one program were in the same section of a course. The courses included in the study are listed in Table 3.2. The selected courses in each program are listed in Appendix G.

Enrollment data indicated an enrollment of 262 students in the first semester of the eighteen programs. For various reasons, not all students were enrolled in both selected courses. Only instruments completed by students that indicated programs selected for inclusion in the study were used. Students from other programs were in course sections and completed the instruments following the same directions as the students in the study. Their instruments were eliminated from the study. A total of 499 instruments were collected from students in the study.

Variables Used in the Study

A number of variables were identified as important in this study. The independent variables used in the study were the following course, instructor, and student elements; student demographics; and college course and program classifications. The data was obtained from student ratings of items or supplemental information provided by the student on the instrument as requested.

Course Element Variables.

1. Assignments-objective agreement level (Item 10).
2. Bias level (Item 14).

Table 3.2

Courses Included in the Study

General Education Courses	Occupational-Specific Courses
801-190, Business and Professional Speech	307-303, Art Activities
801-356, Communications	620-140, Basic Electricity
801-353, Communications Basic	101-331, Clerical Accounting
801-366, Communications Graphics I	107-120, Data Processing Concepts
801-155, Communications Office I	606-105, Dimensions and Working Drawings
801-151, Communication Skills I	605-105, Direct Current Fundamentals
801-110, Economics	536-322, Drug Classification
809-164, Human Growth and Development	105-383, Electronic Word Processing
	106-164, Information Processing Concepts
	619-110, Introduction to Plastics
	209-305, Lithography Theory
	106-168, Machine Shorthand I
	104-102, Marketing Principles
	510-110, Nursing I
	516-104, Ophthalmic Optics
	194-178, Overview of Marketing

3. Evaluation-objective agreement level (Item 11).
4. Information usability level (Item 7).
5. Instructional materials usability level (Item 13).
6. Planning/organizational level (Item 8).
7. Subject matter-objectives agreement level (Item 9).
8. Text value level (Item 12).

Instructor Element Variables.

1. Class session organization level (Item 20).
2. Comments on assignments level (Item 27).
3. Course related skills demonstration level (Item 18).
4. Enthusiasm level (Item 19).
5. Explanation of general course information (Item 15).
6. Interest in student learning level (Item 28).
7. Material explanation level (Item 17).
8. Practical application of course level (Item 29).
9. Problem solving/thinking encouragement level (Item 22).
10. Promptness of assignments return level (Item 26).
11. Respect for student level (Item 30).
12. Speech appropriateness level (Item 23).
13. Student participation encouragement level (Item 21).
    Subject knowledge level (Item 16).
15. Teaching aid use (Item 25).
16. Written communications clarity level (Item 24).

Student Element Variables.

1. Difficulty level (Item 4).
2. Expected grade (Item 6).
3. Opinion of course--initial level (Item 2).
4. Opinion of course--present level (Item 3).
5. Expected grade (Item 6).

Student Demographic Variables.

1. Student age (supplemental information provided by the student on the assessment instrument).
2. Student gender (supplemental information provided by the student on the assessment instrument).

College Course and Program Classification Variables.

1. Course function (supplemental information provided by the student on the assessment instrument).
2. Course level (supplemental information provided by the student on the assessment instrument).
3. Instructional division (supplemental information provided by the student on the assessment instrument).

The course, instructor, and student variables were used in answering research question one. The student element, student demographics, and college course and program classification variables were used in answering research question two. The instructional administrators believed that the course and instructor element variables were not appropriate for answering research question two.

The dependent variable used was the student overall rating of the instructor (Item 31). This dependent variable was used to answer both research questions one and two.

Procedures for Treating the Data

The Student Assessment of Instruction instrument, completed by each student, had thirty-one items including thirty course, instructor, and student element items and one overall student assessment of the instructor item. Additional supplemental information blanks were provided for course number, course function and level, program designation, student age, and student gender. The data for items representing eight course elements, sixteen instructor elements, and five student elements and supplemental information included on the assessment instrument were used in the study. One item (my reason for taking the course) was not included in the study because all courses included in the study were required for a degree or diploma.

Creating the Data File

The first step in tabulating and computer processing data was the development of a software program that would capture student data. LTC instructional computer specialist, Frederick Crook, developed the program with assistance from staff at the Scantron Corporation office in California. Using the developed software program, the data entry terminal was able to capture the student ratings and supplemental information and load them on an IBM PC disk in a machine language format.

The next step was to upload the data from the IBM PC disk to the Data General computer. The LTC computer specialist developed a program to (1) upload the data into assigned files, (2) change the machine language format to an alpha-numeric format, and (3) enable entry into a file to permit editing (i.e., correct obvious errors in supplemental information, correct omissions, etc.). This program was then used to upload data from the IBM PC disk and to edit the data in the files.

Because of storage capacity, limitations of the IBM PC disk, the size of the sample, and the number of bits of information to be captured on each instrument, the LTC computer specialist developed a software program able to upload data from a number of IBM PC disks and combine or group files after being uploaded. This was then done so that various files could be combined; and for each independent variable, values determined and analyses completed.

Conducting the Statistical Analyses

The data were submitted to the SPSS^X Multiple Regression Analysis (SPSS Inc., 1986:663-686) to answer the first research question, "Is there a relationship between student overall ratings of instructors and student ratings of items in the three major element groups (course, instructor, and student) in the assessment of instruction at LTC? If so, what is the nature of the relationship?" A second multiple regression analysis was made to determine the relationship of the student ratings of each course element with student overall ratings of the instructors. A third multiple regression

analysis was made to determine the relationship of student ratings of each instructor element with student overall ratings of instructors. A fourth multiple regression analysis was made to determine the relationship of student ratings of each student element with student overall ratings of instructors. The significance was tested at the .05 level using a two-tailed test.

The constant (k) and correlation coefficient (ß) for each element were determined. The multiple regression analysis test computations were conducted until the .05 level of significance was met for each group. The multiple regression equation for determining the value of Item 31 (Q31) from the values found for each of the significant elements was then developed.

$$X_{Q31} = k + \beta_i X_i + \ldots + \beta_j X_j$$

where X_{Q31} = student overall instructor rating

k = constant

ß = regression coefficient for element

X = student rating

i; j = elements found to have a significant relationship with the Q31 value

The independent variables used for answering this question were levels of a student's rating on course items, instructor items, and student items on the student assessment instrument. Each had a possible student rating of one through five. The independent variables are listed below.

Course Element Variables.

1. Assignments-objective agreement.
2. Bias.
3. Evaluation-objective agreement.
4. Information usability.
5. Instructional materials usability.
6. Planning/organization.
7. Subject matter-objectives agreement.
8. Text value.

Instructor Element Variables.

1. Class session organization.
2. Comments on assignments.
3. Course related skills demonstration.
4. Enthusiasm.
5. Explanation of general course information.
6. Interest in student learning.
7. Material explanation.
8. Practical application of course.
9. Problem solving/thinking encouragement.
10. Promptness of assignments return.
11. Respect for student.
12. Speech appropriateness.
13. Student participation encouragement.
14. Subject knowledge.

15. Teaching aid use.

16. Written communications clarity.

Student Element Variables.

1. Difficulty.

2. Expected grade.

3. Opinion of course--initial.

4. Opinion of course--present.

The data were submitted to the One-Way Analysis of Variance (ANOVA) (SPSS Inc., 1986:465-474) to answer the second question, "Is there a relationship between student overall ratings of instructors and student ratings of particular items within each of the three major element groups, student demographics, or place of the course in college academic programming?" The data were tabulated and, where appropriate, means and standard deviations calculated using the LTC Data General computer and the Statistical Package for the Social Sciences^{X} (SPSS^{X}) software package for each of the supplemental data items and course, instructor, and student elements. The F ratio was obtained for the groups within the variable to determine if the student rating of the instructor (Q31) means for the various groups were significantly different.

The groups selected for each of the independent variables included the following:

Student Demographic Variables.

1. Age (sixteen to twenty-two, twenty-three to twenty-nine, thirty plus years of age).

2. Gender (female, male).

College Course and Program Classification Variables.

1. Course function (occupational, general education).

2. Course and program level (associate degree, vocational diploma).

3. Instructional division (Business and Marketing, Health Occupations, Home Economics, Trade and Industry).

Student Elements.

1. Expected grade (A, B, C, I, don't know).

2. Expression of course difficulty (very difficult, difficult, average, easy, and very easy).

3. Opinion of course--initial (highly positive, positive, neutral, negative, very negative).

4. Opinion of course--present (highly positive, positive, neutral, negative, very negative).

5. Out-of-class preparation (fifteen plus hours per week, ten to fifteen hours per week, five to ten hours per week, one to five hours per week, zero hours per week).

CHAPTER 4

PRESENTATION OF THE RESULTS

This chapter includes a presentation of the results. Chapter Four includes the following four sections: (1) Tabulations, Means, and Standard Deviations of Student Ratings, (2) Determinations of Relationships Between Items and Student Overall Ratings of Instructors, (3) Correlations Between Ratings of Items and Student Overall Ratings of Instructors, and (4) Comparison of Student Overall Ratings of Instructors by Groups.

Tabulations, Means, and Standard Deviations of Student Ratings

Student ratings as recorded on the assessment instrument were tabulated, and the mean and standard deviation of their ratings were calculated for those items pertinent to each of the major elements of interest in this study. The mean and standard deviation for each item are included in Table 4.1 and Appendix I. Item number one (reason for taking the course) was not included in the study because all students in the programs selected were enrolled in required courses in their specific program.

Means of student ratings for the items as indicated in Table 4.1 ranged from a high of 4.79 to a low of 2.64. Means of ten items were greater than 4.50. Means of twenty-two items were greater

than 4.00. Only the mean for one item, Q5 (weekly out-of-class preparation), was less than 3.00.

Table 4.1

Ranking of Instrument Items by Means of Student Ratings

Rank[1]	Item[2]	Mean[3]	Standard Deviation
1	Q16, instructor knew subject	4.79	0.43
2	Q14, course free from bias	4.75	0.61
3	Q15 instructor explanation of written course information	4.69	0.78
4	Q19, instructor showed enthusiasm	4.66	0.61
5	Q30, instructor showed respect	4.66	0.67
6	Q10, assignment agreement with course objectives	4.63	0.64
7	Q11, evaluation agreement with course objectives	4.60	0.66
8	Q26, timely return of assignments	4.57	0.73
9	Q18, instructor demonstrated skills	4.52	0.70
10	Q9, subject matter agreement with objectives	4.51	0.68
11	Q21, instructor encouraged student participation	4.48	0.81
12	Q22, instructor encouraged thinking	4.43	0.73
13	Q20, instructor organized classes/labs	4.40	0.78
14	Q17, instructor explained material clearly	4.35	0.75
15	Q24, instructor communicated in writing	4.33	0.90

Table 4.1 Continued

Rank[1]	Item[2]	Mean[3]	Standard Deviation
16	Q28, instructor interested in my learning	4.28	0.85
17	Q23, instructor spoke in a way to help me learn	4.27	0.90
18	Q7, information regarding procedures was usable	4.20	0.74
19	Q25, instructor use of AVs	4.17	1.00
20	Q27, instructor comments regarding my assignments	4.11	1.02
21	Q29, instructor application of course to life or work	4.06	0.99
22	Q8, course planning and organization	3.99	0.83
23	Q12, textbook(s) value in understanding course	3.98	1.02
24	Q3, present opinion of course	3.93	0.85
25	Q6, expected grade	3.82	1.13
26	Q2, initial opinion of course	3.64	0.94
27	Q13, instructor material(s) value in understanding course	3.57	1.38
28	Q4, course difficulty	3.32	0.84
29	Q5, weekly out-of-class preparation	2.64	0.90

[1]Rank with 1 being highest

[2]Item wording shortened for table; the full text is included in Appendix F

[3]Mean is based on a 5-point scale with 5 being most positive

Standard deviations for student ratings of items ranged from a high of 1.38 to a low of 0.43. Thirteen had values between 0.60 and 0.79. Only five had values greater than 1.00.

Two items having the greatest means, Q16 (the instructor knew the subject well--4.79), and Q14 (course content and materials were free from bias--4.75), also had the smallest standard deviations, 0.43 and 0.61 respectively. The item Q31 (student overall rating of the instructor) had a mean of 4.15 and a standard deviation of 0.73 (see Appendix I). This mean was similar to the mean for the item ranked number twenty of twenty-nine items included in the study.

Determination of Relationships Between Items and Student Overall Ratings of Instructors

Data were submitted to the SPSS^X multiple regression analysis. This analysis was used to determine if there was a significant difference between the proportion of variance in the student overall ratings of instructors explained by student ratings to any particular course, instructor, or student item and that explained by student ratings to any other particular course, instructor, or student item. The level of significance selected was the .05 level with a two-tailed test. The null hypothesis developed was as follows:

Null Hypothesis H(01): There is no significant difference between the proportion of variance in the student overall instructor ratings explained by student ratings of one of the course, instructor, or student elements as compared to each of the others.

H(01): $u(2) = u(3) = u(4) = \ldots = u(30)$.

Results of the multiple regression analysis are included in Table 4.2. The calculated F was 114.03, which was significant at less than the .0001 level. Therefore, the null hypothesis was rejected, and the opposite established. There is a significant difference between the proportion of variance in the student overall ratings of instructors explained by student ratings of one of the course, instructor, or student items as compared to each of the others.

Further analysis revealed that student ratings to five items explained 95 percent of the variance in student overall ratings of instructors. These five items were Q23 (instructor spoke in a way that helped me learn), Q8 (the course was well planned and organized), Q22 (the instructor encouraged thinking, problem solving, and decision making), Q17 (the instructor explained materials clearly), and Q28 (the instructor demonstrated an interest in my learning).

A regression formula was developed to determine the expected value (X) of item Q31 (student overall ratings of the instructor) if student ratings of significant course, instructor, and student items were known. The "β" coefficients are included in Table 4.2. The regression formula developed was as follows:

$$X_{Q31} = 0.64 + 0.17X_{Q23} + 0.26X_{Q8} + 0.16X_{Q22} + 0.14X_{Q17} + 0.10X_{Q28}.$$

Data were submitted to the multiple regression analysis to determine the significance of differences between the proportion of variance in student overall ratings of instructors explained by student ratings of any particular student item as compared to any other student

Table 4.2

Determination of Significant Student Ratings of Course, Instructor, and Student Items That Explain Student Overall Ratings of Instructors

Analysis of Variance

	Degrees of Freedom	Sum of Squares	Mean Squares
Regression	5	144.03	28.81
Residual	493	124.55	0.25

F = 114.03*

Probability < 0.0001 level

*F is significant

Significance of Items From All Elements Covered

Item[1]	Constant	ß	t
Q23, instructor spoke in a way to help me learn	--	0.17	3.94
Q8, course planning and organization	--	0.26	7.54
Q22, instructor encouraged thinking	--	0.16	4.25
Q17, instructor explained material clearly	--	0.14	2.98
Q28, instructor interested in my learning	--	0.10	2.86
k, constant	0.64	--	3.89

$p < 0.05$ level with two-tailed test reached

[1]Item wording has been shortened for table; the full text is included in Appendix F

item. The level of significance selected was the .05 level with a two-tailed test. The null hypothesis developed was as follows:

Null Hypothesis H(02): There is no significant difference between the proportion of variance in the student overall ratings of instructors explained by student ratings of one of the student elements as compared to each of the other student elements.

H(02): $u(2) = u(3) = u(4) = u(5) = u(6)$.

Results of the multiple regression analysis are included in Table 4.3. The calculated F was 141.80. which was significant at less than the .0001 level. Therefore, the null hypothesis H(02) was rejected and the opposite established. There is a significant difference between the proportion of variance in the student overall ratings of instructors explained by student ratings of one of the student elements as compared to each of the other student elements.

Further analysis revealed that student ratings to one student item explained 95 percent of the variance in student overall ratings of instructors. That student item was Q3 (my opinion of the course at present is).

A regression formula was developed to determine the expected value of Q31 (student overall rating of the instructor) if student ratings of significant student items were known. The "ß" coefficient is included in Table 4.3. The regression formula developed was the following:

$$X_{Q31} = 2.56 + 0.41X_{Q3}.$$

Table 4.3

Determination of Significant Student Elements Contributing to the Student Overall Ratings of Instructors

Analysis of Variance

	Degrees of Freedom	Sum of Squares	Mean Squares
Regression	1	59.62	59.62
Residual	4.97	208.96	0.42

F = 141.80*

Probability < 0.0001 level

*F is significant

Significance of Items From Student Elements Alone

Item[1]	Constant	ß	t
Q3, opinion of course--present	--	0.41	11.91
k, constant	2.56	--	18.68

p < 0.05 level with two-tailed test reached

[1]Item wording has been shortened for table; the full text is included in Appendix F

Data were submitted to the multiple regression analysis to determine the significance of differences between the proportion of variance in student overall ratings of instructors explained by student ratings of any particular course item as compared to any other course item. The level of significance selected was the .05 level with a two-tailed test. The null hypothesis developed was as follows:

Null Hypothesis H(03): There is no significant difference between the proportion of variance in the student overall ratings of instructors explained by student ratings of one of the course elements as compared to each of the other course elements.

H(03): $u(7) = u(8) = \ldots = u(14)$.

Results of the multiple regression analysis are included in Table 4.4. The calculated F was 106.34, which was significant at less than the .0001 level. Therefore, the null hypothesis H(03) was rejected and the opposite established. There is a significant difference between the proportion of variance in the student overall ratings of instructors explained by student ratings of one of the course elements as compared to each of the other course elements.

Further analysis revealed that student ratings to three course items explained 95 percent of the variance in student overall ratings of instructors. These course items were Q8 (the course was well planned and organized), Q9 (subject matter presented in the classroom agreed with the course objectives), and Q13 (instructional materials/packets purchased in the bookstore or distributed in class were of what value in helping me understand the course).

A regression formula was developed to determine the expected value (X) of item Q31 (the student overall ratings of the instructor) if the student ratings of significant course items were known. The "ß" coefficients are included in Table 4.4. The regression formula developed was the following:

$$X_{Q31} = 1.52 + 0.45X_{Q8} + 0.14X_{Q9} + 0.05X_{Q13}.$$

Table 4.4

Determination of Significant Course Elements Contributing to the Student Overall Ratings of Instructors

Analysis of Variance

	Degrees of Freedom	Sum of Squares	Mean Squares
Regression	3	105.26	35.09
Residual	495	163.33	0.33

F = 106.34*

Probability < 0.0001 level

*F is significant

Significance of Items From Course Elements Alone

Item[1]	Constant	ß	t
Q9, course planning and organization	--	0.45	12.03
Q8, subject matter agreement with objectives	--	0.14	3.16
Q13, instructional materials' value in understanding course	--	0.05	2.79
k, constant	1.52	--	8.53

p < 0.05 level with two-tailed test reached

[1]Item wording has been shortened for table; the full text is included in Appendix F

Data were submitted to the multiple regression analysis to determine the significance of the difference between the proportion of variance in student overall ratings of instructors explained by student

ratings of any particular instructor element as compared to any other instructor element. The level of significance selected was the .05 level with a two-tailed test. The null hypothesis developed was as follows:

Null Hypothesis H(04): There is no significant difference between the proportion of variance in the student overall ratings of instructors explained by student ratings of one of the instructor elements as compared to each of the other instructor elements.

H(04): $u(15) = u(16) = u(17) = \ldots = u(30)$.

Results of the multiple regression analysis are included in Table 4.5. The calculated F was 81.45, which was significant at the .0001 level. Therefore, the null hypothesis H(04) was rejected and the opposite established. There is a significant difference between the proportion of variance in the student overall ratings of instructors explained by student ratings of one of the instructor elements as compared to each of the other instructor elements.

Further analysis revealed that student ratings to six instructor items explained 95 percent of the variance in student overall ratings of instructors. These instructor items were Q23 (the instructor spoke in a way that helped me learn), Q22 (the instructor encouraged thinking, problem solving, and decision making), Q17 (the instructor explained material clearly), Q24 (the instructor communicated clearly in writing on the chalkboard, papers, and transparencies), Q28 (the instructor demonstrated interest in my learning), and Q16 (the instructor knew the subject well).

Table 4.5

Determination of Significant Instructor Elements Contributing to the Student Overall Ratings of Instructors

Analysis of Variance

	Degrees of Freedom	Sum of Squares	Mean Squares
Regression	6	133.84	22.31
Residual	4.92	134.75	0.27

F = 81.45*

Probability < 0.0001 level

*F is significant

Significance of Items From Instructor Elements Alone

Item[1]	Constant	ß	t
Q23, instructor spoke in a way to help me learn	--	0.19	4.15
Q22, instructor encouraged thinking	--	0.15	3.74
Q17, instructor explained material clearly	--	0.17	3.52
Q24, instructor explained course information	--	0.11	3.11
Q28, instructor interested in my learning	--	0.11	2.94
Q16, instructor knew subject	--	0.15	2.33
k, constant	0.29	--	1.05

p < 0.05 level with two-tailed test reached

[1]Item wording has been shortened for table; the full text is included in Appendix F

A regression formula was developed to determine the expected value (X) of item Q31 (the student overall ratings of the instructor) if student ratings of significant instructor items were known. The "ß" coefficients are included in Table 4.5. The regression formula developed was the following:

$$X_{Q31} = 0.29 + 0.19X_{Q23} + 0.15X_{Q22} + 0.17X_{Q17} + 0.11X_{Q24} + 0.11X_{Q28} + 0.15X_{Q16}.$$

Correlations Between Ratings of Items and Student Overall Ratings of Instructors

The Pearson r correlations between student ratings of selected course, instructor, and student elements and student overall ratings of instructors were calculated. The ranking of correlations is indicated in Table 4.6. Correlations ranged from a high of +0.636 to a low of -0.089.

There were two items that had correlations of over 0.60. They were Q23 (the instructor spoke in a way that helped me learn) and Q8 (the course was well planned and rganized). Fourteen items had correlations between 0.40 and 0.60. Nine items had correlations between 0.20 and 0.40. Only one item, Q4 (course difficulty), had a negative correlation, which was a very negligible -0.089.

Previous sections included those items that explained significant proportions of the student overall ratings of instructors. Correlations of the remainder of the items are included in Table 4.6 so they can be examined. Examination of the correlations of several items

will enable them to be used in developing and ranking goals in an effort to raise student rating levels.

Table 4.6

Ranking of Correlations of Student Ratings of Particular Course, Instructor, and Student Items With Student Overall Ratings of Instructors

Rank[1]	Items[2]	Pearson r
1	Q23, instructor spoke in a way to help me learn	.636
2	Q8, course planning and organization	.606
3	Q17, instructor explained material clearly	.593
4	Q24, course difficulty	.538
5	Q28, instructor interested in my learning	.525
6	Q22, instructor encouraged learning	.510
7	Q19, instructor showed enthusiasm	.500
8	Q21, instructor encouraged student participation	.483
9	Q20, instructor organized classes/labs	.480
10	Q3, present opinion of course	.471
11	Q29, instructor application of course to life or work	.459
12	Q25, instructor use of AVs	.454
13	Q18, instructor demonstrated skills	.450
14	Q9, subject matter agreement with objectives	.429
15	Q30, instructor showed respect	.403
16	Q16, instructor knew subject	.400

Table 4.6 (Continued)

Rank[1]	Items[2]	Pearson r
17	Q17, information regarding procedures was usable	.390
18	Q26, timely return of assignments	.376
19	Q10, assignment agreement with objectives	.362
20	Q27, instructor comments regarding my assignments	.345
21	Q11, evaluations agreement with objectives	.340
22	Q15, instructor explanation of written course information	.337
23	Q13, instructional materials' value in understanding course	.272
24	Q12, textbook(s) value in understanding course	.267
25	Q6, expected grade	.209
26	Q14, course free from bias	.144
27	Q2, initial opinion of course	.041
28	Q5, weekly out-of-class preparation	.031
29	Q4, course difficulty	-.089

[1]Rank of one had the highest positive correlation

[2]Item wording shortened for the table; the full text is included in Appendix F

Comparison of Student Overall Ratings of Instructors by Groups

Data were submitted to SPSS^X Scheffe' One-Way Analysis of Variance (ANOVA) to determine if there was a significant difference among/between student overall ratings of instructors by students in various groupings. The .05 level of significance was selected with a two-tailed test. The groups established for this part of the study were (1) function of course, (2) level of course, (3) instructional division, (4) age of student, (5) expected grade, (6) expression of course difficulty, (7) student opinion of course--initial, (8) student opinion of course--present, (9) student out-of-class preparation, and (10) sex of student.

ANOVA results are presented in the following sections. The means were based on a five-point scale. A "five" on the scale was considered more positive than a "one" on the scale.

Course Function (General Education vs. Occupational-Specific)

Two of the four course functions were studied. The reason for this selection was that both functions of courses existed in all associate degree and vocational diploma programs offered at LTC. The two functions of courses selected were (1) general education and (2) occupational-specific.

The null hypothesis was developed. The null hypothesis was tested at the .05 level using a two-tailed test. The hypothesis developed was as follows:

Null Hypothesis H(05): There is no significant difference between student overall ratings of instructors from students enrolled in a general education course and from those enrolled in an occupational-specific course.

H(05): u (general education) = u (occupational-specific).

Table 4.7

Comparison of Means of Student Ratings by Course Function

Function of Course	Count	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean
Occupational-Specific	267	4.10	0.77	0.05	4.00 to 4.19
General Education	190	4.23	0.75	0.06	4.12 to 4.33
Total	457	4.15	0.77	0.04	4.08 to 4.22

Analysis of Variance

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F Ratio
Between Groups	1	1.85	1.85	3.15
Within Groups	455	266.74	0.59	--
Total	456	268.58	--	--

Critical $F_{.05} = 3.31$*

*F ratio is not significant

There were 457 usable instruments collected from students in this grouping. Analysis indicated that 190 (42 percent) ratings were from students enrolled in a general education course and 267 (58 percent) ratings were from students enrolled in an occupational-specific course. Means and standard deviations were calculated and found to be 4.23 $\pm$ 0.75 for the ratings from students enrolled in a general education course and 4.10 $\pm$ 0.77 for ratings from students enrolled in an occupational-specific course (see Table 4.7). Ratings in both groups were similar and relatively consistent.

Analysis of variance calculations yielded a F ratio of 3.15 (see Table 4.7). The critical $F_{.05}$ ratio for a two-tailed test with 456 degrees of freedom is 3.81. The calculated F ratio was less than the critical F ratio. Therefore, the null hypothesis H(05) was not rejected. There was no significant difference between student overall instructor ratings from students enrolled in a general education course and from those enrolled in an occupational-specific course.

Course and Program Level

Two levels of courses and programs are offered in full-time occupational programs at LTC. The two levels established were (1) associate degree and (2) vocational diploma. Courses in one level of program were not included as courses in another level of program.

The null hypothesis was developed. The null hypothesis was tested at the .05 level of significance using a two-tailed test. The hypothesis developed was as follows:

Null Hypothesis H(06): There is no significant difference between student overall ratings of instructors from students enrolled in an associate degree-level course and from those enrolled in a vocational diploma-level course.

H(06): u (associate degree) = u (vocational diploma).

Table 4.8

Comparison of Means of Student Ratings
by Course and Program Level

Level of Course	Count	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean
Associate Degree	302	4.15	0.70	0.04	4.07 to 4.23
Vocational Diploma	155	4.15	0.88	0.07	4.01 to 4.30
Total	457	4.15	0.77	0.04	4.08 to 4.22

Analysis of Variance

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F Ratio
Between Groups	1	0.00	0.00	0.01
Within Groups	455	268.58	0.59	--
Total	456	268.58	--	--

Critical $F_{.05} = 3.8$*

*F ratio is not significant

There were 457 usable instruments collected from students in this grouping. There were 302 (66 percent) ratings from students enrolled in associate degree-level courses and 155 (34 percent) responses from students enrolled in vocational diploma-level courses. Means and standard deviations were calculated and found to be 4.15 $\pm$ 0.70 for overall ratings of instructors from students enrolled in associate degree-level courses and 4.15 $\pm$ 0.88 for ratings from students enrolled in vocational diploma-level courses (see Table 4.8). Responses were almost identical with both being equal to the composite mean with consistency slightly better for the associate degree group.

Analysis of variance calculations yielded a F ratio of 0.01 (see Table 4.8). The critical $F_{.05}$ ratio for a two-tailed test with 456 degrees of freedom was 3.81. The calculated F ratio was less than the critical $F_{.05}$ ratio. The null hypothesis H(06) was not rejected. There is no significant difference between student overall instructor ratings from students enrolled in an associate degree-level course and from those enrolled in a vocational diploma-level course.

Instructional Division

Students involved in the study were grouped according to instructional division. The study included students in four instructional divisions at LTC. These divisions were (1) Business and Marketing, (2) Health Occupations, (3) Home Economics, and (4) Trade and Industry.

The null hypothesis was developed. The null hypothesis was tested at the .05 level of significance with a two-tailed test. The hypothesis developed was as follows:

Null Hypothesis H(07): There is no significant difference between student overall ratings of instructors from students in the various divisions.

H(07): $u(i) = u(j)$; where $i \neq j$; i, j = Business and Marketing, Health Occupations, Home Economics, or Trade and Industry.

There were 441 usable instruments collected from students in this grouping. There were 203 (46 percent) from the Business and Marketing Division, 73 (17 percent) from the Health Occupations Division, 42 (10 percent) from the Home Economics Division, and 123 (28 percent) from the Trade and Industry Division. The data were tabulated, and calculations made and are included in Table 4.9.

Means and standard deviations were calculated for each division. Division means of ratings ranged from a high of 4.50 to a low of 4.01, with a composite mean of 4.15. Division means from highest to lowest were Home Economics--4.50, Business and Marketing--4.16, Health Occupations--4.07, and Trade and Industry--4.01 . While all means were in the 4.00 to 4.50 range, there was a considerable difference between the lowest three means and the highest mean.

Analysis of variance calculations yielded a F ratio of 4.64 (see Table 4.9). The critical $F_{.05}$ ratio for a two-tailed test with 440 degrees of freedom was 3.97. The calculated F ratio was greater than the critical $F_{.05}$ ratio. Therefore, the null hypothesis H(07) was

Table 4.9

Comparison of Means of Student Ratings
by Instructional Division

Division	Count	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean
Business and Marketing	203	4.16	0.73	0.05	4.06 to 4.26
Health Occupations	73	4.07	0.89	0.10	3.86 to 4.28
Home Economics	42	4.50[1]	0.59	0.09	4.31 to 4.69
Trade and Industry	123	4.01	0.76	0.07	3.87 to 4.14
Total	441	4.13	0.77	0.04	4.06 to 4.21

Analysis of Variance

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F Ratio
Between Groups	3	8.00	2.67	4.64
Within Groups	437	251.11	0.57	--
Total	440	259.11	--	--

Critical $F_{.05} = 3.97$*

*F ratio is significant

[1]Significantly higher than the Health Occupations and Trade and Industry divisions

rejected and the opposite accepted. There is a significant difference between student overall ratings of instructors from students in two or more divisions. Student overall ratings of instructors from students in the Home Economics Division were significantly higher than ratings from students in the Trade and Industry and Health Occupations Divisions.

Student Age

Students involved in the study were grouped according to age. Three age groups were established. These included (1) sixteen to twenty-two years, (2) twenty-three to twenty-nine years, and (3) over twenty-nine years of age.

The null hypothesis was developed. The null hypothesis was tested at the .05 level of significance with a two-tailed test. The hypothesis developed was as follows:

Null Hypothesis H(08): There is no significant difference between student overall ratings of instructors from students in the various age groups.

H(08): $u(i) = u(j)$; where $i \neq j$; i, j = eighteen to twenty-two years, twenty-three to twenty-nine years, or over twenty-nine years.

There were 457 usable instruments collected from students in this grouping. There were 251 (55 percent) from the sixteen to twenty-two age group, 102 (22 percent) from the twenty-three to twenty-nine age group, and 104 (23 percent) from the over twenty-nine age group. Data were tabulated, and calculations made and included in Table 4.10.

Table 4.10

Comparison of Means of Student Ratings by Student Age

Age of Student	Count	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean
(Years of Age)					
16 to 22	251	4.12	0.79	0.05	4.02 to 4.22
23 to 29	102	4.06	0.73	0.07	3.91 to 4.20
Over 29	104	4.32	0.74	0.07	4.17 to 4.46
Total	457	4.15	0.77	0.04	4.08 to 4.22

Analysis of Variance

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F Ratio
Between Groups	2	3.99	2.00	3.42
Within Groups	454	264.59	0.58	--
Total	456	268.58	--	--

Critical $F_{.05} = 3.47$*

*F Ratio is not significant

Means and standard deviations were calculated for each age group. Group means ranged from a high of 4.32 to a low of 4.06, with a composite mean of 4.15. Means from highest to lowest were over twenty-nine years age group--4.32, sixteen to twenty-two years age group--4.12, and twenty-three to twenty-nine years age group--4.06. Students

in the over twenty-nine years age group rated instructors somewhat higher than students in the other two age groups.

Analysis of variance calculations yielded a F ratio of 3.42 (see Table 4.10). The critical F ratio for a two-tailed test with 456 degrees of freedom was 3.47. The calculated F ratio was 3.42. The null hypothesis H(08) was not rejected. There is no significant difference between student overall instructor ratings from students in the various age groups.

Student Expected Grade

Students involved in the study were grouped according to the grade they expected to receive. Five groups of expected grade were established. These included A, B, C, I, and Don't Know.

The null hypothesis was developed. The null hypothesis was tested at the .05 level of significance with a two-tailed test. The hypothesis developed was as follows:

Null Hypothesis H(09): There is no significant difference between student overall ratings of instructors from students included in the various expected grade groups.

H(09): $u(i) = u(j)$; where $i \neq j$; i, j = A, B, C, I, or Don't Know.

There were 454 usable instruments collected from students in this grouping. There were 139 (31 percent) collected from the "A" group, 173 (38 percent) collected from the "B" group, 98 (22 percent) collected from the "C" group, 7 (2 percent) collected from the "I"

group, and 32 (7 percent) collected from the "Don't Know" group. Data were tabulated, and calculations made and included in Table 4.11.

Table 4.11

Comparison of Means of Student Ratings
by Student Expected Grade

Expected Grade	Count	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean
Don't Know	32	3.89	0.81	0.13	3.62 to 4.16
I	7	3.71	0.95	0.35	2.83 to 4.59
C	98	3.93	0.77	0.08	3.77 to 4.08
B	173	4.19	0.76	0.06	4.08 to 4.30
A	139	4.36[1]	0.68	0.06	4.25 to 4.47
Total	454	4.15	0.77	0.04	4.08 to 4.22

Analysis of Variance

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F Ratio
Between Groups	4	14.99	3.75	6.73
Within Groups	449	250.22	0.56	--
Total	453	265.21	--	--

Critical $F_{.05} = 4.37$*

*F ratio is significant

[1]Significantly higher than the "C" and the "Don't Know" groups

Means and standard deviations were calculated for each group. Group means ranged from a high of 4.36 to a low of 3.71 with a composite mean of 4.15. Means from highest to lowest were "A" group--4.36, "B" group--4.19, "C" group--3.93, "Don't Know" group--3.89, and "I" group--3.71. The means were progressively lower from the "A" group through the "I" group with the mean of the "Don't Know" group approximately the same as that of the "C" group.

Analysis of variance calculations yielded a F ratio of 6.73 (see Table 4.11). The critical $F_{.05}$ ratio for a two-tailed test with 453 degrees of freedom was 4.37. The null hypothesis H(09) was rejected and the opposite accepted. There is a significant difference between student overall ratings of instructors from students in two or more of the expected grade groups. Student overall ratings of instructors from students indicating an "A" grade were significantly higher than ratings from those indicating a "C" grade or "Don't Know."

Student Expression of Course Difficulty

The students involved in the study were grouped according to their expressed difficulty level of the course. Five difficulty levels were established. These included (1) very difficult, (2) difficult, (3) average, (4) easy, and (5) very easy.

The null hypothesis was developed. The null hypothesis was tested at the .05 level of significance with a two-tailed test. The hypothesis developed was as follows:

Null Hypothesis H(10): There is no significant difference between student overall ratings of instructors from students in the various expression of course difficulty groups.

H(10): u (i) = u (j); where $i \neq j$; i, j = very difficult, difficult, average, easy, or very easy.

There were 457 usable instruments collected from students in this grouping. There were 18 (4 percent) collected in the "very easy" group, 31 (7 percent) collected in the "easy" group, 222 (49 percent) collected in the "average" group, 157 (34 percent) collected in the "difficult" group, and 29 (6 percent) collected in the "very difficult" group. The data were tabulated, and calculations made and included in Table 4.12.

Means and standard deviations were calculated for each group. Group means ranged from a low of 3.79 to a high of 4.23 with a composite mean being 4.15. Means from highest to lowest were average--4.23, easy--4.16, very easy--4.11, difficult--4.10, and very difficult--3.79. Ratings from students in the average difficulty group were the highest.

Analysis of variance calculations yielded a F ratio of 2.43 (see Table 4.12). The critical $F_{.05}$ ratio for a two-tailed test with 456 degrees of freedom was 4.37. The null hypothesis H(10) was not rejected. There is no significant difference between student overall ratings of instructors from students in the various expression of course difficulty groups.

Table 4.12

Comparison of Means of Student Ratings
by Expressed Difficulty

Difficulty	Count	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean
Very Easy	18	4.11	0.83	0.20	3.70 to 4.53
Easy	31	4.16	0.58	0.10	3.95 to 4.38
Average	222	4.23	0.70	0.05	4.14 to 4.33
Difficult	157	4.10	0.78	0.06	3.98 to 4.23
Very Difficult	29	3.79	1.11	0.21	3.37 to 4.22
Total	457	4.15	0.77	0.04	4.08 to 4.22

Analysis of Variance

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F Ratio
Between Groups	4	5.66	1.42	2.43
Within Groups	452	262.92	0.58	--
Total	456	268.58	--	--

Critical $F_{.05} = 4.37$*

*F ratio is not significant

Student Opinion of Course--Initial

Students involved in the study were grouped according to student's initial opinion of the course. Five opinion levels were

established. They were (1) highly negative, (2) negative, (3) no opinion, (4) positive, and (5) highly positive.

The null hypothesis was developed. The null hypothesis was tested at the .05 level of significance using a two-tailed test. The hypothesis developed was as follows:

Null Hypothesis H(11): There is no significant difference between student overall ratings of instructors from students in the various student initial opinion of the course groups.

H(11): u (i) = u (j); where i ≠ j; i, j = highly negative, negative, no opinion, positive, or highly positive.

There were 456 usable instruments collected from students in this grouping. There were 10 (2 percent) ratings from the "highly negative" group, 43 (9 percent) from the "negative" group, 121 (27 percent) from the "no opinion" group, 205 (45 percent) from the "positive" group, and 77 (17 percent) from the "highly positive" group. The tabulations and calculations are included in Table 4.13.

Means and standard deviations were calculated for each group. Group means ranged from a high of 4.26 to a low of 3.99 with a composite mean of 4.15. The means from highest to lowest were negative--4.25, highly positive--4.22, highly negative--4.20, positive--4.20, and neutral--3.99.

Analysis of variance calculations yielded a F ratio of 1.85 (see Table 4.13). The critical $F_{.05}$ ratio for a two-tailed test with 455 degrees of freedom was 4.37. The null hypothesis H(11) was not rejected. There is no significant difference between the student

overall ratings of instructors from students in the various student initial opinion of the course groups.

Table 4.13

Comparison of Means of Student Ratings by Initial Opinion

Opinion	Count	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean
Highly Negative	10	4.20	0.63	0.20	3.75 to 4.65
Negative	43	4.26	0.69	0.11	4.04 to 4.47
Neutral	121	3.99	0.80	0.07	3.85 to 4.14
Positive	205	4.20	0.73	0.05	4.10 to 4.30
Highly Positive	77	4.22	0.85	0.10	4.03 to 4.41
Total	456	4.15	0.77	0.04	4.08 to 4.22

Analysis of Variance

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F Ratio
Between Groups	4	4.34	1.09	1.85
Within Groups	451	264.22	0.59	--
Total	455	268.56	--	--

Critical $F_{.05} = 4.73$*

*F ratio is not significant

Student Opinion of Course--Present

Students involved in the study were grouped according to student's present opinion of the course. Five opinion levels were established. They were: (1) highly negative, (2) negative, (3) no opinion, (4) positive, and (5) highly positive.

The null hypothesis was developed. The null hypothesis was tested at the .05 level of significance using a two-tailed test. The hypothesis developed was as follows:

Null Hypothesis H(12): There is no significant difference between the student overall ratings of instructors from students in the various student present opinion of course groups.

H(12): $u(i) = u(j)$; where $i \neq j$; i, j = highly negative, negative, no opinion, positive, or highly positive.

There were 456 usable instruments collected from students in this grouping. There were 4 (1 percent) collected from the "highly negative" group, 33 (7 percent) from the "negative" group, 50 (11 percent) from the "no opinion" group, 268 (59 percent) from the "positive" group, and 101 (22 percent) from the "highly positive" group. The data were tabulated, and calculations made and included in Table 4.14.

Means and standard deviations were calculated for each group. Means ranged from a high of 4.61 to a low of 2.75. Means were progressively lower as the opinion was lowered from highly positive (4.61) to highly negative (2.75). This difference in means was very large as compared to differences in the other groupings included in the study.

Table 4.14

Comparison of Means of Student Ratings by Present Opinion

Opinion	Count	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean
Highly Negative	4	2.75	1.71	0.85	0.03 to 5.47
Negative	33	3.24	0.83	0.14	2.95 to 3.54
Neutral	50	3.68	0.74	0.10	3.47 to 3.89
Positive	268	4.19[1]	0.65	0.04	4.12 to 4.27
Highly Positive	101	4.61[2]	0.55	0.54	4.51 to 4.72
Total	456	4.15	0.77	0.04	4.08 to 4.22

Analysis of Variance

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F Ratio
Between Groups	4	68.32	17.08	38.60
Within Groups	451	199.54	0.44	--
Total	455	267.86	--	--

Critical $F_{.05} = 4.37$*

*F ratio is significant

[1]Significantly higher than means of the "Highly Negative", "Negative," and "Neutral" groups

[2]Significantly higher than means of all other groups

Analysis of variance calculations yielded a F ratio of 38.60 (see Table 4.14). The critical $F_{.05}$ for a two-tailed test with 455 degrees of freedom was 4.37. The null hypothesis H(12) was rejected and the opposite accepted. There is a significant difference between the student overall ratings of instructors from students in the various student present opinion of course groups. The mean of ratings from students in the "highly positive" opinion group was significantly higher than the means of ratings from students in all other opinion groups. The mean of ratings from students in the "positive" opinion group was significantly higher than the means of ratings from students in the "neutral," "negative," or "highly negative" opinion of the course groups.

Student Out-of-Class Preparation

Students involved in the study were grouped according to the student's out-of-class preparation in hours per week. Five levels of preparation were established: (1) zero hours, (2) one to five hours, (3) five to ten hours, (4) ten to fifteen hours, and (5) over fifteen hours.

The null hypothesis was developed. The null hypothesis was tested at the .05 level of significance using a two-tailed test. The hypothesis developed was as follows:

Null Hypothesis H(13): There is no significant difference between the student overall instructor ratings from students in the various out-of-class preparation groups.

H(13): u (i) = u (j); where i ≠ j; i, j = 0, 1-5, 5-10, 10-15, or over 15 hours per week.

Table 4.15

Comparison of Means of Student Ratings by Preparation Time

Preparation Time	Count	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean
(Hours per Week)					
0	15	3.93	0.80	0.21	3.49 to 4.38
1 to 5	229	4.14	0.76	0.05	4.05 to 4.24
5 to 10	146	4.20	0.72	0.06	4.09 to 4.32
10 to 15	48	4.02	0.96	0.14	3.74 to 4.30
Over 15	19	4.37	0.68	0.16	4.04 to 4.70
Total	457	4.15	0.77	0.04	4.08 to 4.22

Analysis of Variance

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F Ratio
Between Groups	4	2.76	0.69	1.16
Within Groups	452	265.82	0.59	--
Total	456	268.58	--	--

Critical $F_{.05} = 4.37$*

*F ratio is not significant

There were 457 usable instruments collected from students in this grouping. There were 15 (3 percent) collected from the "zero hours per week" group, 229 (50 percent) from the 'one to five hours per week" group, 146 (32 percent) from the "five to ten hours per week" group, 48 (11 percent) from the "ten to fifteen hours per week" group, and 19 (4 percent) from the "over fifteen hours per week" group. The data were tabulated, and calculations made and included in Table 4.15

Means and standard deviations were calculated for each group. Means ranged from a high of 4.37 to a low of 3.93 with a composite mean of 4.15. Means were lowered as out-of-class preparation was reduced, except for the "ten to fifteen hours per week" group. The mean for this group was between the means of the "five to ten hours per week" group and the "zero hours per week" group.

Analysis of variance calculations yielded a F ratio of 1.16 (see Table 4.15). The critical $F_{.05}$ for a two-tailed test with 456 degrees of freedom was 4.37. The null hypothesis H(13) was not rejected. There is no significant difference between the student overall ratings of instructors from students in the various out-of-class preparation groups.

Student Gender

Students involved in the study were grouped according to gender of the student, female or male.

The null hypothesis was developed. The null hypothesis was tested at the .05 level of significance with a two-tailed test. The hypothesis developed was as follows:

Null Hypothesis H(14): There is no significant difference between student overall ratings of instructors from female students and ratings from male students.

H(14): u (females) = u (males).

Table 4.16

Comparison of Means of Student Ratings by Student Gender

Sex	Count	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean
Male	153	4.04	0.76	0.64	3.92 to 4.16
Female	303	4.21	0.76	0.44	4.12 to 4.30
Total	456	4.15	0.76	0.04	4.08 to 4.22

Analysis of Variance

Source	Degrees of Freedom	Sum of Squares	Mean Squares	F Ratio
Between Groups	1	3.01	3.01	5.17
Within Groups	454	264.25	0.58	--
Total	455	267.26	--	--

Critical $F_{.05} = 3.81$*

*F ratio is significant

There were 456 usable instruments collected from students in this grouping. There were 303 (66 percent) ratings from the "female

student" group and 153 (34 percent) ratings from the "male student" group. The data were tabulated, and calculations made and included in Table 4.16.

The mean of the ratings from female students was 4.21. The mean of the ratings from male students was 4.04. The standard deviation for both groups was an identical 0.76, indicating similar consistency in the ratings from both groups.

Analysis of variance calculations yielded a F ratio of 5.17 (see Table 4.16). The critical $F_{.05}$ ratio for a two-tailed test with 455 degrees of freedom was 3.81. The null hypothesis (H14) was rejected and the opposite accepted. There is a significant difference between student overall ratings of instructors from female students and ratings from male students. The overall ratings of instructors from female students are significantly higher than those from male students.

CHAPTER 5

SUMMARY, INTERPRETATION, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to refine a part of the instructional assessment procedures at LTC. This was accomplished by obtaining and analyzing data for course, instructor, and student elements to determine their relative relationships to student overall ratings of instructors. Equally important, this study also determined the biasing effects of particular course, instructor, and student elements; student demographics; and college course and program classifications on student overall ratings of instructors. This is important in providing information necessary to enable LTC staff to make adjustments and interpret the data in a comparable manner regardless of course setting. Adjustments made in interpreting ratings are prerequisite to making decisions about development and ranking of goals for an instructor's individual professional growth plan. Chapter Five includes the following five sections: (1) Overview, (2) Interpretation of Results, (3) Applications of Findings to Future Instructor Assessments, (4) Conclusions, and (5) Recommendations.

Overview

There has been in recent years a considerable increase in the number of postsecondary two-year educational institutions implementing instructor professional growth programs that emphasize growth of the

individual. This has resulted from an increased emphasis on accountability and a reduction in nonstructured courses of professional growth. These programs are becoming more dependent on assessments to determine strengths and weaknesses of the individual. Development and ranking of goals to be included in the instructor's professional growth program are based on interpretations of data adjusted as a result of the determination of significant course, instructor, and student elements; student demographics; or institutional course and program classifications.

Although three types of instructional assessment are used, peer and supervisor assessments appear to have had rather limited usage. The student type of instructional assessment has become the dominant assessment used as the basis for identifying, developing, and ranking goals in instructor growth programs. Its acceptance and use by both administrative and instructional staff are increasing.

There are both philosophical and practical reasons for the continued increase in use of student ratings of elements. Philosophically, it can be concluded that the students are most affected by the instructor and that the instructor has the most contact with them for a substantial period of time. One practical reason is that a significant positive correlation between student achievement and ratings given to the instructor seems to exist. Other practical reasons include availability of computerized data entry terminals and ease in development of college-specific assessment instruments to assist in assessment and analysis of data. Literature supports the importance of using

locally-oriented, diagnostic-type assessment instruments to gain insights into the instructor's teaching performance. Literature also indicates a need to localize results and to use those results in instructor growth program decisions if an acceptable and effective program is to be achieved.

The LTC Student Assessment of Course and Instructor instrument was designed in accordance with the suggestions made in the literature. It is diagnostic in nature. It also contains items within course, instructor, and student elements suggested to have an effect on student overall ratings of instructors and, thereby, student achievement. This study was an attempt to determine biasing influences of student ratings of particular elements, student demographics, and course and program classifications on student overall ratings of instructors at the local level and appropriate adjustments to be made to localize the ratings for the particular course and students. This was considered necessary if interpretations of data were to serve as the basis for any development and ranking of goals for inclusion in the instructor's professional growth program.

Results of this study should provide the college with data and analyses to facilitate adjustments to data before making interpreations and decisions regarding instructor goals. Use of ratings appropriately adjusted in accordance with significant elements, student demographics, and institutional course and program classifications will enable decisions to be based on specific instructional assignments. This will make data appropriate for decisions about instructor growth regardless

of differences in these elements, demographics, or classifications. The growth program will then have a greater chance to be successful.

To illustrate this adjustment, the following example is used. Assume that overall ratings of instructors from the female students were found to be significantly higher than those from male students. The ratings for an instructor having a large proportion of females would then have to be adjusted downward by a factor to make these ratings comparable; or for those instructors having a large proportion of males, the rating would be adjusted upward by a factor to make these ratings comparable to data obtained in other courses. The instructional administrative staff would then have to make the decision to adjust the rating value upward for instructors teaching mostly male students or downward for those teaching female students.

The determination of amount of adjustment necessary would be made for each group found to be significant in the study. The amount of adjustment to be made would be communicated to all instructional staff. This would enable each person reviewing student ratings data analysis to make similar adjustments and thereby have a common base for interpretations.

A number of studies included in Chapter Two indicated that student ratings of instructors have high correlations with student achievement. A high ranking would be given to goals based on elements having a significant relationship with the overall ratings of instructors. Therefore, indirectly, a high priority is placed on goals that will probably contribute most toward increasing student achievement.

Another example is also presented here. Assume that the item (course was planned and organized) was found to have a high positive correlation with the student overall ratings of instructors, and that the item (assignments agreed with course objectives) was found to have a low correlation with the student overall ratings of instructors. The instructor receiving low ratings from students on both items would address both when developing growth goals. However, because of the higher correlation and level of significance with the student overall ratings of instructors, the goal developed to improve the planning and organization of the course would be given a higher priority in the instructor's professional growth plan.

In setting priorities for goals and activities for an instructor's individual professional growth program, both the administrator and instructor would need to know the course, instructor, and student items that had significant relationships with the student overall ratings of instructors by ranking and selecting goals based on correlations. Instructors will be including those that have the greatest potential for improving student overall ratings of instructors and student achievement.

Interpretation of Results

Relationships of Ratings of Items With Student Overall Ratings of Instructors

Research Question 1: Is there a relationship between student overall ratings of instructors and student ratings of items in the

three major element groups (course, instructor, and student) in the assessment of instruction at LTC? If so, what is the nature of the relationship?

The composite mean (4.15) of the overall ratings of instructors item was above average (see Table 4.1). This speaks well of LTC instructors included in the study. Courses were selected according to occupational program and not by instructor criteria. Therefore, the mean would probably have been similar if all the instructors had been included. The high mean value indicates that relatively high caliber instructors currently teach at the college.

Results indicated that the items within instructor elements were given high ratings by students. The item (instructor knew subject) received the highest rating (see Table 4.1). It was indicated previously that subject area competence was given the highest weight during the hiring process. Student ratings supported use of that criterion in the hiring of instructors and also its emphasis during the previous instructor professional growth plans.

Student ratings of instructor knowledge of subject seemed to be independent of other items. Ratings of instructor's level of knowledge had correlations with other items that ranged from none (-.023) to low (+.455) (see Appendix J). The standard deviation of only 0.43 indicated that students seemed to judge instructor knowledge level quite uniformly.

Analysis of the data (see Table 4.2) indicated that student ratings to only five items (instructor spoke in a way that helped me learn; course was well planned and organized; instructor encouraged

thinking, problem solving, and decision making; instructor explained materials clearly; and instructor demonstrated interest in my learning) were found to have a significant relationship with the student overall ratings of instructors. Therefore research question one is answered as follows: There is a significant difference between the relationships of the student ratings of various elements with the student overall ratings of instructors. This is based on analysis indicating that ratings to only five of the twenty-nine items included in the study had a significant relationship.

Ratings for no student-related item (for example, out-of-class preparation) were found to have a significant relationship with the student overall ratings of instructors when all items were analyzed. When items within the student-related item grouping were analyzed separately, only one (opinion of the course--present) was found to have a significant relationship with student overall ratings of instructors. Therefore, indications are that student-related elements have very little relationship with student overall ratings of instructors.

Relationship of Items, Characteristics, and Classifications on Student Overall Ratings of Instructors

Research Question 2: Is there a relationship between student overall ratings of instructors and student ratings of particular items within each of the three major element groups, student demographics, or place of the course in college academic programming?

The biasing effect of particular elements (course, instructor, and student), student demographics, and course and program classifications on student ratings of instructors has been the subject of

numerous research studies reported in the literature. Results of these studies were varied and inconclusive and, therefore, not transportable to other institutions. The results of this study provided an answer to the question that was applicable to the college. Significant differences were found in overall ratings of instructors from students in the following groups: instructional division of course, grade expected by student, student's present opinion of course, and sex of student. The extent of biasing influence of each of these groups and groups of other elements, student demographics, and course and program classifications is further discussed in this section.

Course Function. There was no significant difference between the overall ratings of instructors from those students in the general education courses and from those students in occupational-specific courses (see Table 4.7). Instructional managers speculated that courses in these two functions would probably yield the most diverse student ratings. Results did not support this. Although the mean for overall ratings of instructors from students in general education courses was slightly higher than the mean from ratings of students in occupational courses, the difference was not significant.

One caution needs to be made at this point in the interpretation of results. Only 71 percent of the number of students who completed the instrument for an occupational course completed the instrument for a general education course. The rest of the students received advanced standing for the general education course, completed

the course early, dropped the course, or for some other reason did not complete the instrument.

Results indicated that overall ratings of instructors from students in general education courses tended to be slightly higher than ra ngs in the occupational-specific courses. This difference was not atistically significant; therefore, this fact is not to be considered when adjusting student ratings of instructors. This classification will not be included in selecting and ranking goals for the instructor's individual professional growth program.

Course and Program Level. There was no significant difference between the overall ratings of instructors from students in the associate degree-level courses and the ratings from students in the vocational diploma-level courses (see Table 4.8). The means were identical. This element is not to be considered when adjusting student ratings of instructors and will not be a factor to be used in selecting and ranking goals for the instructor's individual professional growth program.

Instructional Division. Overall ratings of instructors from students in the Home Economics Division were substantially higher than those ratings from students in the three other divisions (see Table 4.9) Ratings from students in the Home Economics Division were significantly higher than ratings from students in the Health Occupations Division and the Trade and Industry Division. The ratings from students in this group will require an adjustment to make them comparable

with ratings from students in other instructional divisions. Ratings from students in the Home Economics Division programs will need to be adjusted downward to enable decisions regarding ranking of goals to be based on comparable information.

Student Age. Over one-half of the students in the study were in the sixteen to twenty-two years age group (see Table 4.10). One-fourth were in each of the other age groups, twenty-three to twenty-nine years and over twenty-nine years age groups. Some slight differences were observed among the groups. Ratings from students in the over twenty-nine years age group had a considerably but not significantly higher mean than ratings from students in the other two groups. Therefore, adjustments for age group need not be made in student overall ratings of instructors.

Student Expected Grade. Approximately 30 percent of the students responding expected an "A" grade, 40 percent a "B" grade, and 20 percent a "C" grade (see Table 4.11). Only 9 percent expected an "I" grade or were unsure of their grade. There was a significant difference in these overall ratings of instructors from students in particular expected grade groups. Students expecting an "A" grade rated the instructor significantly higher than those expecting a "C" grade or those who did not know. The small percentage expecting an "I" grade made it difficult to interpret that relationship with the overall ratings of instructors. Therefore, adjustments in overall ratings of instructors would need to be made in an upward direction if a

preponderance of students in the course were expecting a "C" grade or were in a "Don't Know" status when the assessment form was administered. The adjustment would need to be made before interpretations of ratings were used in developing and ranking goals for the instructor's professional growth program.

Student Expression of Course Difficulty. Approximately 50 percent of the students indicated that courses were of "average difficulty," and 35 percent indicated that courses were "difficult" (see Table 4.12). Remaining ratings were about evenly distributed among the other three categories. Responses from the "average difficulty" group of students tended to have higher overall instructor ratings. The overall ratings of instructors were progressively lower on each side of the "average difficulty" level.

Differences in student overall ratings of instructors among the difficulty levels were not significant. Therefore, no adjustments need to be made in the ratings before interpretation of student overall ratings of instructors for this grouping.

Student Opinion of Course--Initial. Approximately 25 percent of the students indicated "no opinion," and 45 percent indicated a "positive opinion" of the course before students enrolled (see Table 4.13). Slightly less than 20 percent indicated a "highly positive" rating. This indicated a substantial skew in the number of ratings toward the "positive opinion." Differences in student overall ratings of instructors among the particular groups indicated that initial

opinion of course was not a significant biasing influence. Therefore, no adjustments need to be made in the ratings before interpretation of student overall ratings of instructors for this grouping.

Student Opinion of Course--Present. Slightly more than 80 percent of the ratings in this group were "positive" or "highly positive" (see Table 4.14). This indicates that a large proportion of the students believed courses were meeting their needs. Slightly more than 10 percent had "no opinion" or were neutral about the course. Only 8 percent indicated a "negative" feeling about the courses they were taking.

The large range of means from 4.61 to 2.75 (see Table 4.14) indicated the direct correlation between present opinion of the course and the overall ratings of instructors with the mean of ratings from the "highly negative" opinion student group being the lowest. The high F ratio (38.60) indicated a significant difference in overall ratings of instructors from students in the various present opinion level groups. Ratings from two groups, "highly positive" and "positive," were significantly higher than those from groups having lower present opinions of the course. Ratings of present opinion of the course are definitely to be considered in adjusting student ratings of instructors before their interpretation. They are also to be used when ranking goals for the instructor's professional growth program if the mean of the opinion ratings is not at or above the expected level for the instructor.

Student Out-of-Class Preparation. One-half of the students indicated an out-of-class preparation in the range of "one to five" hours per week, and one-third indicated theirs to be in the range of "five to ten" hours per week (see Table 4.15). Other ratings were distributed among the three other groups. One factor that would potentially be a concern in interpreting this item is that courses having a variety of levels and credits were involved in the study.

Overall ratings of instructors tended to be more positive as the student put in more out-of-class preparation time. However, differences between ratings from students in the various groups were not significant. Therefore, no adjustments need to be made for this element when interpreting the overall ratings of instructors. Out-of-class preparation need not be taken into consideration when ranking goals to be developed in the instructor's professional growth program.

Student Gender. There were twice as many female students as male students in the study (see Table 4.16). The overall ratings of instructors from female students were somewhat higher than ratings of male students. Consistency of ratings from both groups was the same as a standard deviation of .76 was obtained for both. The mean (4.21) of ratings from female students was found to be significantly higher than the mean (4.04) of ratings from male students. An adjustment to the overall ratings of instructors needs to be made for the gender of students whenever there is a preponderance of one gender in the course. The adjustment would be downward if there were substantially more females than males in the course and upward if there were substantially

more males than females in the course. Consideration of gender of student would not be included in developing and ranking goals for the instructor's professional growth program.

Applications of Findings to Future Instructor Assessments

The findings have useful applications to future interpretations of student assessments of instructors. Results indicated that biasing influences of particular elements, student demographics, and course and program classifications did exist. There is no reason to believe that they will not continue to exist. Therefore, the following direct applications of the findings are suggested.

Female students rated instructors significantly higher than did male students. Therefore, adjustments to the ratings need to be made whenever substantial gender imbalance exists. The adjustment would be downward if there were substantially more females than males in the course and upward if there were substantially more males than females in the course.

Students indicating "positive" and "highly positive" present opinions of the course rated instructors significantly higher than those indicating lower opinion levels. Therefore, an adjustment needs to be made to the ratings whenever the opinion levels are substantially different from those normally expressed for courses offered by the college. The adjustment would be downward if there was a substantially higher opinion and upward if there was a substantially lower opinion.

Students expecting an "A" grade rated instructors significantly higher than those expecting a "C" grade and those anticipating no particular grade. Therefore, an adjustment needs to be made to the ratings whenever the distribution of expected grade is substantially different from the distribution normal for the college. The adjustment would be downward whenever there is a substantially larger proportion of students expecting an "A" grade and upward whenever there is a substantially larger portion of students expecting a "C" grade or anticipating no particular grade.

Students in the Home Economics Division rated instructors significantly higher than students in other instructional divisions. Therefore, adjustment needs to be made to the ratings whenever the composition of students in the course from each instructional division is substantially different from the actual proportion of the college student body from each division. The adjustment would be downward if there was a higher than actual proportion of students from the Home Economics Division in the course and upward if there was a lower than actual proportion from the Home Economics Division.

Use of student ratings of items within course and instructor elements as a basis for developing goals for the instructor's professional growth plan is an important emphasis in LIFE. The process for using the ratings is as follows. First, items for which student ratings are substantially lower than desired (4.0) are identified. Second, identified items are separated into two groups--those items found to have a significant relationship with overall ratings of

instructors in this study and those that did not. Third, all items are ranked with the item having the highest correlation ("ß") with the overall ratings of instructors given a rank of number one. Fourth, the instructor and administrator select items for use in developing goals. Those selected include all the significant relationship items and additional not significant ones that are reasonable for the effort to be expended. The additional items are selected according to their rank. And last, goals are developed based on the selected items for inclusion in the instructor's professional growth program.

Conclusions

The major conclusions reached as a result of this study were as follows:

1. There was strong support at LTC for the use of formal student ratings as a reasonable and reliable way of measuring the level of instructor performance and for collecting assessment data for use in developing and ranking goals for the individual instructor professional growth program.

2. Students tended to rate course and instructor elements and instructor overall performance in a consistent and discriminating way.

3. Student gender influenced ratings; overall ratings of instructors by female students were significantly higher than those by male students.

4. Overall ratings of instructors by students in the various instructional divisions were significantly different. Ratings by

students in the Home Economics Division were significantly higher than ratings by students in other divisions.

5. Differences in overall student ratings of instructors were not explained evenly by responses to the items in the course, instructor, and student elements included in the study; relatively few show a significant capability in this respect.

6. Student ratings of the course element item (course planning and organization) tended to explain differences in the student overall ratings of instructors.

7. Student ratings of instructor element items (instructor spoke in a way to help me learn, instructor encouraged thinking, instructor explained material clearly, and instructor interested in my learning) also had significant relationships with student overall ratings of instructors.

8. In the student element group, student ratings of two items (expected grade and present opinion of course) were important; both were significantly related to student overall ratings of instructors.

9. In contrast, student ratings of the student element items (initial opinion of course, out-of-class effort, and difficulty) showed them to be not important; they were not significantly related to student overall ratings of instructors.

10. None of the other twenty-four items in the course, instructor, and student elements was important; none provided significant explanations of differences in student overall ratings of instructors.

11. Age of student was not an important factor; it was not significantly related to student overall ratings of instructors.

12. Nor were institutional classifications of course function and course level found to be important; neither was significantly related to student overall ratings of instructors.

Recommendations

Recommendations for Use of Results

The following recommendations were developed from the results of the study:

1. The college should continue to use student ratings of course, instructor, and student elements and overall ratings of instructors to provide data for developing and ranking goals for the instructor's professional growth program.

2. The college should be encouraged to continue use of the Student Assessment of Instruction instrument to obtain student ratings of course, instructor, and student elements and student overall ratings of instructors.

3. The college staff should make an appropriate adjustment to student ratings whenever there is an atypical distribution of students in a course in terms of students' expectation of grades, expressions of difficulty, and/or present opinions of course, or the presence of disbalanced ratios of female to male students, as well as the instructional divisions in the course.

4. A task force should be organized to determine the extent of the adjustment to be made when each of the foregoing conditions is found. It should communicate the adjustment levels throughout the college so similar interpretations will result when the same set of student ratings prevail.

5. Highest weight should be given to the student ratings to the five items (course planning and organization, instructor spoke in a way to help me learn, instructor encouraged thinking, instructor explained material clearly, and instructor interested in my learning) in the instructor element group found in the study to be important influencing factors during the development and ranking of primary goals for the instructor's professional growth program proceeds.

6. Development and ranking of secondary goals related to items found in the study not to be important influencing factors for the instructor's professional growth program should be based on comparisons of correlations ("ß") between student ratings of items and overall ratings of the instructor. Only those elements represented by items having adjusted student rating means substantially lower than 4.0 need be considered.

7. Additional studies should be conducted using additional occupational programs at the college to further validate the results of this study.

8. Additional studies should be conducted using subsequent courses in the sequence of courses in each occupational program to further validate the results of this study.

9. Periodic studies should be conducted to monitor the validity of the relationships and biasing effects of the various elements, student demographics, and institutional course and program classifications on student ratings as additional occupational programs emerge and as the student body makeup changes.

Plans for Diffusion and Implementation

The writer has plans to present this study's results and recommendations to the following agencies and groups:

1. The Lakeshore Technical College Board of Education. Members will be informed of results of the study to obtain necessary support to continue use of the Student Assessment of Instruction instrument to collect data for use in decisions regarding development of goals for instructor professional growth programs.

2. The Lakeshore Technical College faculty and management staff. They are to be informed of results so that they might support the use of the Student Assessment of Instruction instrument for collecting data, making adjustments before interpreting the data, and using interpretations to identify goals for the instructor's professional growth program.

3. The Wisconsin Vocational, Technical and Adult Education Administrators--Research, Planning, and Development Committee. This committee is composed of research representatives from each of the sixteen districts and state board staff members. Committee members are interested in research methodology and also have the responsibility for

disseminating results of research studies conducted in one district or by state staff members to staff members in the respective districts.

4. The Wisconsin Vocational, Technical and Adult Education Administrators--Instructional Services Committee. This committee is composed of instructional representatives from each of the sixteen districts and state board staff members. Committee members are interested in information related to the betterment of instruction. Results of this study will be helpful to committee members in identifying instructor growth goals at their respective colleges.

5. The instructional administrators of various secondary and postsecondary schools throughout the state of Wisconsin. Results will be incorporated into the LIFE program and disseminated to various administrators at instructional and faculty evaluation meetings.

6. The Wisconsin Board of Vocational, Technical and Adult Education sponsored Evaluation Conference participants. Participants attend to learn new techniques or outcomes obtained through use of evaluation in the district for evaluating district programs, services, and staff.

7. The readers of professional journals, periodicals, and local newspapers. Results and recommendations of this study will be summarized and submitted for publication in the following journals, periodicals, and newspapers.

a. Wisconsin Educational Research Association Newsletter. This is a state association of researchers in educational institutions at all levels. Articles provide an opportunity to share research

methodology and results. Members will be able to share results with instructional managers at their respective educational institutions and with students in teacher training and educational administration programs.

b. The Wisconsin Vocational Educator. This periodical is published by the Vocational Studies Center--University of Wisconsin-Madison for the purpose of disseminating information and results of studies that have potential benefit to vocational educators in its service area.

c. Community and Junior College Journal. This is the professional journal of the American Association of Community and Junior Colleges. Articles in it provide an opportunity to share the results of the study with research and instructional managers in two-year colleges.

d. The Driftwood. This is a publication distributed by the college to LTC staff and secondary school administrators in the area. Articles in this publication describe to all staff members types of activities being conducted at the college.

e. Manitowoc-Herald-Times and The Sheboygan Press. These are official LTC newspapers. Publication in these newspapers will provide ar opportunity to publicize LTC efforts to provide a relevant basis for instructor professional growth programs designed to increase instructional performance levels.

This study was designed to obtain and analyze data to determine (1) the biasing influences of student ratings on particular items

included in course, instructor, and student elements; student demographics; and college course and program classifications on student overall ratings of instructors and (2) the relationships among student ratings of particular course, instructor, and student elements on the student overall ratings of instructors. Results can be useful in enabling instructional staff members to make appropriate adjustments before interpreting student rating data for instructors teaching courses in a variety of settings. It is anticipated that results of this study will have a positive effect on the acceptance of instructor assessment data collected through the use of the Student Assessment of Instruction instrument. It should also have a positive effect on acceptance and use of assessment data in developing, ranking, and selecting goals for an instructor's professional growth program.

BIBLIOGRAPHY

Aleomonie, Lawrence M. "The Usefulness of Student Evaluations in Improving College Teaching." Instructional Science, Volume 7, pages 95-105, July 197[illegible]

Aleomonie, Lawrence M. "Student Ratings of Instruction." Handbook for Teacher Evaluation, 4th Printing. Editor Jason Millman. Beverly Hills: Sage Publications, 1984.

Altschuler, Thelma C., and Suzanne L. Richter. "Maintaining Faculty Vitality." New Directions for Community Colleges: Maintaining Institutional Vitality. San Francisco: Jossey-Bass, 1985.

Andrews, Hans A. Evaluating for Excellence. Stillwater: New Forum Press Inc., 1985.

Asche, F. Marion, and Daniel E. Vogler. Assessing Employer Satisfaction With Vocational Education Graduates. Columbus: National Center for Research in Vocational Education, Ohio State University, 1980.

Aubrecht, Judith D. Are Student Ratings of Teacher Effectiveness Valid. Idea Paper Number 2. Manhattan: Center for Faculty Evaluation and Development in Higher Education, Kansas State University, 1979.

Aubrecht, Judith D. Reliability, Validity, and Generalizability of Student Ratings of Instruction. Idea Paper Number 6. Manhattan: Center for Faculty Development in Higher Education, Kansas State University, 1981.

Bantz, Martha L., and Joseph Lee Rodgers. "Dimensions Underlying Student Ratings of Instruction: A Multidimensional Scaling Analysis." American Educational Research Journal, Volume 22, pages 267-272, Summer 1985.

Barr, Ronald E., and Thomas J. Krueger. "Student [illegible]uation of Teacher Performance in Multisection Graphics Course." Journal of Industrial Teacher Education, Volume 15, pages 17-26, Spring 1978.

Bausell, R. Barker, and Jon Magoon. "Expected Grade in a Course, Grade Point Average, and Student Ratings of the Course and the Instructor." Educational and Psychological Measurement, Volume 32, pages 1013-1023, 1972.

Beard, Ruth, and James Hartley. Teaching and Learning in Higher Education, 4th Edition. Philadelphia: Harper and Row, 1984.

Bender, Louis W., and Maureen D. Lukenbi l. "Human Resource Development: Let's Begin With Ourselves." Community and Junior College Journal, Volume 55, pages 16-18, October 1984.

Berquist, William H., and Steven R. Phillips. A Handbook for Faculty Development. Washington: Council for Advancement of Small Colleges, 1975.

Biehler, Robert F. Psychology Applied to Teaching, 3rd Edition. Boston: Houghton Mifflin, 1978. Quoted in James S. Whitley, "Are Student Evaluations Constructive Criticism." Community and Junior College Journal, Volume 54, pages 41-42, April 1984.

Bishop, Leslie J. Staff Development and Instructional Improvement: Plans and Procedures. Boston: Allyn and Bacon Inc., 1976.

Blackburn, Robert T., and Janet H. Lawrence. "Aging and the Quality of Faculty Job Performance." Review of Education Research, Volume 56, pages 265-290, Fall 1986.

Bolton, Dale L. Selection and Evaluation of Teachers. Berkeley: McCutchan Publishing Corporation, 1973.

Braskamp, Larry A., Dale C. Brandenburg, and John C. Ory. Evaluating Teaching Effectiveness. Beverly Hills: Sage Publications Inc., 1984.

Carter, John F. Instructional Design for Distance Training. ERIC ED 217 214, 1982.

Cashin, William E. and Bruce M. Perrin. "Do College Teachers Who Voluntarily Have Courses Evaluated Receive Higher Student Ratings." Journal of Educational Psychology, Volume 75, pages 595-602, 1983.

Centra, John A. "What Instructors Learn From Students: Student and Faculty Ratings of Instruction." ERIC ED 065 033, 1972.

Centra, John A. Two Studies on the Utility of Student Ratings for Instructional Improvement. Princeton: Educational Testing Service, 1972.

Centra, John A. Faculty Development Practices in United States Colleges and Universities. Princeton: Educational Testing Service, November 1976.

Centra, John A. "The How and Why of Evaluating Teaching" In His New Directions for Higher Education: Renewing and Evaluating Teaching. San Francisco: Jossey-Bass Inc., 1977.

Centra, John A. Determining Faculty Effectiveness. San Francisco: Jossey-Bass Inc., 1980.

Cohen, Peter A. "Effectiveness of Student Rating Feedback for Improving College Instruction: A Meta-Analysis of Findings." Research in Higher Education, Volume 13, pages 321-341, 1980.

Cohen, Peter A. "Student Ratings of Instruction and Student Achievement: A Meta-Analyses of Multisection Validity Studies." Review of Educational Research, Volume 51, pages 281-309, Fall 1981.

Costin, Frank, William T. Greenough, and Robert J. Menges. "Student Ratings of College Teaching: Reliability, Validity, and Usefulness." Review of Education Research, Volume 41, pages 511-535, 1971

Cranton, Patricia A., and Ronald A. Smith. "A New Look at the Effect of Course Characteristics on Student Ratings of Instruction." American Educational Research Journal, Volume 23, pages 117-128, Spring 1986.

Cremin, Lawrence A. Traditions of American Education. New York: Basic Books, 1977.

Cross, K. Patricia. "New Roles for College Teachers." Community College Frontiers, pages 8-12, Winter 1977.

Davey, Kathleen B., and Roger G. Sell. "Instructional Evaluation for Developmental/Improvement: Fact or Fiction. Based on a Case Study of Faculty Practices?" ERIC ED 260 603, 1985.

Dowell, David A., and James A. Neal. "A Selective Review of the Validity of Student Ratings of Teaching." Journal of Higher Education, Volume 53, pages 51-62, 1982.

Ebel, H. C., and Howard Berg. "Student Evaluations in Physical Education: Role of Course Type and Grade Expectation." Physical Educator, Volume 33, pages 13-17, May 1976.

Eble, Kenneth E. The Aims of College Teaching. San Francisco: Jossey-Bass Publishers, 1983.

Elmore, Patricia B., and Karen A. LaPointe. "Effects of Teacher Sex and Student Sex on the Evaluation of College Instructors." Journal of Educational Psychology, Volume 56, page 386, 1974.

Elmore, Patricia B., and Karen A. LaPointe. "Effect of Teacher Sex, Student Sex, and Teacher Warmth on the Evaluation of College Instructors." Journal of Educational Psychology, Volume 67, pages 368-374, 1975.

Everett, Michael D. "The Impact of Student Evaluations of Teachers on the Quality of Education." Liberal Education, Volume 67, pages 327-335, Winter 1981.

Feldman, K. A. "Consistency and Variability Among College Students in Rating Their Teachers and Courses: A Review and Analysis." Research in Higher Education, Volume 6, pages 223-274, 1977.

Feldman, Kenneth A. "Course Characteristics and College Students' Ratings of Their Teachers: What We Know and What We Don't." Research in Higher Education, Volume 9, pages 199-242, 1978.

Fincher, Cameron. "The Purpose and Functions of Faculty Evaluation." ERIC ED 240 887, 1983.

Frey, Peter W. "Student Ratings of Teaching: Validity of Several Factors." Science, Volume 182, pages 83-85, 1973.

Gaff, Jerry G. Toward Faculty Renewal. San Francisco: Jossey-Bass Publishers, 1975.

Garman, Noreen B. "The Clinical Approach to Supervision." Association for Supervision and Curriculum Development, 1982. Supervision of Teaching. 1982 Yearbook.

Gaverick, Charles M. and Harold D. Carter. "Instructor Ratings and Expected Grades." California Journal of Educational Research, Volume 1, pages 218-221, 1962.

Genova, William, Marjorie Mardoff, Robert Chin, and George Thomas. Mutual Benefit: Evaluation of Faculty and Administrators in Higher Education. Cambridge: Ballinger, 1976.

Gogan, Catherine. "Evaluating Institutions, Programs, and Faculty: An Overview." Canadian Vocational Association Journal, Volume 21, pages 9-12, November 1985.

Goldschmid, Marcel L. "The Evaluation and Improvement of Teaching in Higher Education." Higher Education, Volume 7, pages 221-245, May 1978.

Griffin, Gary A. "Introduction: The Work of Staff Development" In National Society for the Study of Education, Staff Development, Eighty-Second Yearbook. Chicago: University of Chicago Press, 1983.

Gross, Ruth B., and Arnold C. Small. "A Survey of Faculty Opinions About Student Evaluations of Instructors." Teaching of Psychology, Volume 6, pages 216-219, December 1979.

Guskey, Thomas R., and John Q. Easton. "The Characteristics of Effective Teachers in Urban Community Colleges." Community/Junior College Quarterly of Research and Practices, Volume 7, pages 265-274, 1983.

Guskey, Thomas R. "Staff Development and the Process of Teacher Change." Educational Researcher, Volume 15, pages 5-12, May 1986.

Hammons, James O., Terry H. Smith Wallace, and Gordon Watts. Staff Development in the Community College: A Handbook. Topical Paper Number 66. Los Angeles: ERIC Clearinghouse for Junior Colleges, University of California, June 1978.

Harrell, Robert A. "Conceptual Framework for Faculty Evaluation and Faculty Development System at Jackson State College." Faculty Development and Evaluation in Higher Education, Volume 6, pages 1-7, Summer 1980.

Harrell, Robert A. Manual of Procedures for Faculty Evaluation and Faculty Development System. Jackson: Jackson State Community College, 1980-81.

Haslett, Betty J. "Student Knowledgeability, Student Sex, Class Size, and Class Level: Their Interactions and Influences on Student Ratings of Instruction." Research in Higher Education, Volume 5, pages 39-65, 1976.

Haslett, Betty J. "The Influences of Student Knowledgeability on Student Ratings of Instruction." Communication Education, Volume 26, pages 44-51, January 1977.

Heath, Douglas. "The Successful Teachers: Who and Why." Independent School, Volume 41, pages 33-36, May 1982.

Hendrickson, Robert M. "Faculty Issues in the Eighties." Phi Delta Kappan, pages 338-341, January 1982.

Hoffman, R. Gene. "Variables Affecting University Student Ratings of Instructor Behavior." American Educational Research Journal, Volume 15, pages 287-299, Spring 1978.

Hunter, John O. "Applying John Dewey: Evaluation and the Art of Teaching." Community College Review, Volume 9, pages 3-8, Spring 1982.

Johnson, Glenn Ross. "Faculty Evaluation." The Journal of Staff, Program, and Organization Development, Volume 2, pages 90-92, Winter 1984.

Jones, Lewis L., and Andrew E. Hayes. "How Valid Are Surveys of Teachers' Needs?" Educational Leadership, Volume 37, pages 1-7, 1980.

Kallison, James M. Jr. "Effects of Lesson Organization on Achievement." American Educational Research Journal, Volume 23, pages 337-347, Summer 1986.

Koerin, Beverly B. "Teaching Effectiveness and Faculty Development Programs: A Review." Journal of Genetic Education, Volume 32, pages 40-51, Spring 1980.

Ladwig, Dennis J. "Determining the Effectiveness and Evaluating the Implementation Process of a Quality/Performance Circles System to Assist in Institutional Decision Making and Problem Solving at Lakeshore Technical Institute." Major Applied Research Paper. Nova University, 1983.

Lakeshore Technical Institute. North-Central Self-Study. Cleveland, WI: Lakeshore VTAE District, December 1980.

Lanier, Judith E., and Sally Glassberg. "Relating Research in Classroom Teaching to In-Service Education." Journal of Research and Development in Education, Volume 14, pages 22-33, Winter 1983.

Lawrence, Gordon. "A Synthesis of Research on the Effectiveness of Staff Development Programs." ERIC ED 211 499, 1980.

Lein, Charles D., and C. Mike Merz. "Student Evaluations: What Are They Really Telling Us." Collegiate News and Views.

Licata, Christine M. "Post-Tenure Faculty Evaluation: Threat or Opportunity." Executive Summary. ASME-ERIC Higher Education Report 1, Association for the Study of Higher Education, 1986.

Lichty, Richard W., David A. Vose, and Jerrold M. Peterson. "The Economic Effects of Grade Inflation on Instructor Evaluation: An Alternative Interpretation." Journal of Economic Education, Volume 10, pages 3-11, Fall 1978.

Manns, Edith Kelly, and Biorgio J. Vericella. "Faculty Development in Allied Health: State of the Art." Journal of Allied Health, Volume 14, pages 267-277, August 1985.

Marsh, Herbert W. Students' Evaluations of Instructional Effectiveness: Relationship to Student, Course, and Instructor Characteristics. ERIC ED 155 217, March 1978.

Marsh, Herbert W. "The Influence of Student, Course, and Instructor Characteristics in Evaluation of University Teaching." American Educational Research Journal, Volume 17, pages 219-237, Summer 1980.

Marsh, Herbert W. "Factors Affecting Students' Evaluations of the Same Course Taught by the Same Instructor on Different Occasions." American Educational Research Journal, Volume 19, pages 485-497, Winter 1982.

Marsh, Herbert W., and Dennis Hocevas. "The Factorial Invariance of Student Evaluations of College Teaching." American Educational Research Journal, Volume 21, pages 341-366, Summer 1984.

McGown, Wayne F. Management Review: District Organization. Madison: Department of Administration, State of Wisconsin, 1980.

McKeachie, Wilbert J. "The Role of Faculty Evaluation in Enhancing College Teaching." National Forum, Volume 63, pages 37-39, Spring 1983.

McLaughlin, Milbrey W., and David D. Marsh. "Staff Development and School Change." Teachers College Record, Volume 80, pages 69-93, 1978.

McLean, Ruth W. "A Two-Tiered Staff Development Model for Continuing Education Teachers." Community Services Catalyst, Volume 16, pages 4-7, Spring 1986.

Miller, Darwin J., and James L. Ratcliff. "Analysis of Professional Development." Community/Junior College Journal, Volume 10, pages 317-343, 1986.

Miller, Richard I. Evaluating Faculty Performance. San Francisco: Jossey-Bass Publishers, 1974.

Millman, Jason. Handbook of Teacher Evaluation, 4th Printing. Beverly Hills: Sage Publications, 1984.

Murray, Harry G. "Predicting Student Ratings of College Teaching From Peer Ratings of Personality Types." Teaching of Psychology, Volume 2, pages 66-69, 1975.

Murray, Harry G. "Low-Inference Classroom Teaching Behaviors and Student Ratings of College Teaching Effectiveness." Journal of Educational Psychology, Volume 75, pages 138-149, 1983.

Naftulin, Donald H., John E. Ware, and Frank A. Donnelly. "The Doctor Fox Lecture: A Paradigm of Education Seduction." Journal of Medical Education, Volume 48, pages 630-635, 1973.

O'Hanlon, James, and Lynn Mortensen. "Making Teacher Evaluation Work." Journal Of Higher Education, Volume 51, pages 664-672, November/December 1980.

Omaggio, Alice C. "The Relationship Between Personalized Classroom Talk and Teacher Effectiveness Ratings: Some Research Results." Foreign Language Annals, Volume 14, pages 255-269, September 1982.

Pedras, Melvin J. "A Planning Model for the Design and Implementation of a Staff Development Program for Community College Part-time Faculty." Community/Junior College Quarterly, Volume 9, pages 71-77, 1985.

Pellino, Glenn R., Alice L. Boberg, and Colman O'Connell. Planning and Evaluating Professional Growth Programs for Faculty. Ann Arbor: Center for the study of Higher Education, University of Michigan, July 1981.

Penfield, Douglas A. "Student Ratings of College Teaching: Rating the Utility of Rating Forms." The Journal of Educational Research, Volume 72, pages 19-22, September-October 1978.

Rabalais, Michael J., and J. David Durham. "Student Evaluation as a Component of Systematic Instruction." The Journal of Staff, Program, and Organizational Development, Volume 2, pages 102-105, Winter 1984.

Richardson, Richard C., and William R. Rhodes. "Effective Strategic Planning: Balancing Demands for Quality and Fiscal Realities." Renewing the American Community College, Ed. William L. Deegan, Dale Tillery, and Associates. San Francisco: Jossey-Bass, 1985.

Rodriguez, Sam, and Kathy Johnstone. "Staff Development Through a Collegial Support Group Model." Improving Teaching. 1986 ASCD Yearbook. Alexandria: Association for Supervision and Curriculum Development, 1986.

Ross, Doris, and Lester Solomon. Evaluating Teachers: With Lessons From Georgia's Performance-Based Certification Program. Denver: Education Commission of the States, July 1985.

Rouche, John E. "Preface" In Hans Andrews' Evaluating for Excellence. Stillwater: New Forum Press Inc., 1985.

Rouche, John E., and George A. Baker. "The Success Connection: Toward Equality With Excellence." Community and Junior College Journal, Volume 55, pages 18-22, April 1985.

Schrader, Marvin A. "Student Evaluation of Course and Instructor Pilot Study Results." An Unpublished Report to the Lakeshore Technical Institute Quest for Quality Circle, January 1986.

Snyder, C. R., and Mark Clair. "Effects of Expected and Obtained Grades on Teacher Evaluation and Attribution of Performance." Journal of Educational Psychology, Volume 68, pages 75-82, 1976.

Sparks, Georgea Mohlman. "The Effectiveness of Alternative Training Activities in Changing Practices." American Educational Research Journal, Volume 23, pages 217-226, Summer 1986.

Sprinthall, Norman A. and Lois Thies-Sprinthall. "The Teacher as an Adult Learner: A Cognitive Development View." National Society of the Study of Education. Staff Development, Eighty-Second Yearbook. Chicago: University of Chicago Press, 1983.

SPSS Inc. SPSS^X Users Guide. New York: McGraw-Hill, 1986.

Stephens, Doris T. "Motivating Students in Correspondence Courses." Continuum, Volume 43, page 3, March 1979.

Stiggins, Richard J., and Nancy J. Bridgeford. Performance Assessment for Teacher Development. Portland: Center for Performance Assessment, Northwest Regional Educational Laboratory, January 1984.

Stumpf, Stephen A., Richard D. Freedman, and Joseph C. Aguanno. "A Path Analysis of Factors Often Found to Be Related to Student Ratings of Teaching Effectiveness." Research in Higher Education, Volume 11, pages 111-123, 1979.

Tollefson, Nona, et al. "The Influence of Selected Student and Class Characteristics on Teacher Effectiveness Ratings." ERIC ED 195 563, 1980.

Tom, Alan R. "Response to Guskey." Educational Researcher, Volume 15, pages 12-15, December 1986.

Tomasco, Anthony T. "Student Perceptions of Instructional and Personality Characteristics of Faculty: A Canonical Analysis." Teaching of Psychology, Volume 7, pages 79-82, April 1980.

Valderde, Leonard A. "The Self-Evolving Supervisor." Supervision of Teaching, 1982 Yearbook. Alexandria: Association for Supervision and Curriculum Development, 1982.

von Glahn, Betty. "Four Organizations Publish NWREL Teacher Evaluation Guide." Review of Teacher Evaluation: Five Keys to Growth, by Daniel Duke and Richard Stiggins. Northwest Report, September 1986, pages 1, 3, and 4.

Washton, Nathan S. "College Faculty Development for Teacher Effectiveness in Professional Schools of Health Sciences." ERIC ED 242 275, 1983.

White, Rudolph A. "Some Added Support Justifying Administrative Use of Student Evaluations of Teachers." The Journal of Economic Education, Volume 7, pages 120-124, 1976.

Whitley, James S. "Are Student Evaluations Constructive Criticism." Community and Junior College Journal, Volume 54, pages 41-42, April 1984.

Wildman, Terry M., and Jerry A. Niles. "Essentials of Professional Growth." Educational Leadership, pages 4-10, February 1987.

Wilson, Richard C., et al. College Professors and Their Impact on Students. New York: John Wiley and Sons Publishers, 1975.

Wisconsin. Chapter 38, 1975.

APPENDIX A

VOCATIONAL, TECHNICAL AND ADULT EDUCATION MISSION

NOTE: Chapter 38 is from the 1975 Wisconsin Statutes as affected by chapters 29, 273, 300 and 418, laws of 1977. This copy is subject to change prior to publication in the 1977 statutes.

CHAPTER 38

VOCATIONAL, TECHNICAL AND ADULT EDUCATION

38.001 Mission. The board shall be responsible for the initiation, development, maintenance and supervision of programs with specific occupational orientations below the baccalaureate level, including terminal associate degrees, training of apprentices and adult education below the professional level.

History: 1971 c. 100, 125, 211.

38.01 Definitions. In this chapter:

(1) "Board" means the board of vocational, technical and adult education.

(2) "District" means a vocational, technical and adult education district established under this chapter.

(3) "District board" means the district board in charge of the vocational, technical and adult education schools of a district.

(4) "School district" means a school district operating high school grades.

(5) "School board" means the school board in charge of the public schools of a school district.

(6) "School year" means the time commencing with July 1 and ending with the next succeeding June 30.

(7) "Associate degree program" means a 2-year, post-high school program in an area designated and approved by the board for which the course requirements are established by the board.

(8) "Collegiate transfer program" means a state-wide, full-time program, designated and approved by the board, in which the credits earned may be transferable to a 4-year institution of higher education.

(9) "Vocational diploma program" means a one- or 2-year, full-time program in an area designated and approved by the board for which the course requirements are established by the board.

(10) "Vocational-adult program" means a part-time vocationally oriented program established by a district board which is approved by the state director under procedures established by the board.

History: 1971 c. 154, 211; 1975 c. 39.

38.02 Establishment. There is established under this chapter a system of vocational, technical and adult education to foster and maintain instruction in courses approved by the board in part-time and full-time day or evening classes. Every person at least the age specified in s. 118.15 (1) (b) who can profit thereby is eligible to receive instruction under this chapter and rules established by the board.

History: 1971 c. 154.

38.04 Board of vocational, technical and adult education; powers and duties. (1) GENERAL. The board shall determine the organization, plans, scope and development of vocational, technical and adult education. For state aid, credit determination and other purposes, the board shall establish criteria for the establishment of district schools and shall classify and name the district schools.

(2) DIRECTOR. The board shall appoint a director, outside the classified service, to serve at its pleasure.

(3) STAFF. The board shall appoint such staff as is necessary under the classified service. Three positions in addition to the director shall be filled outside the classified service.

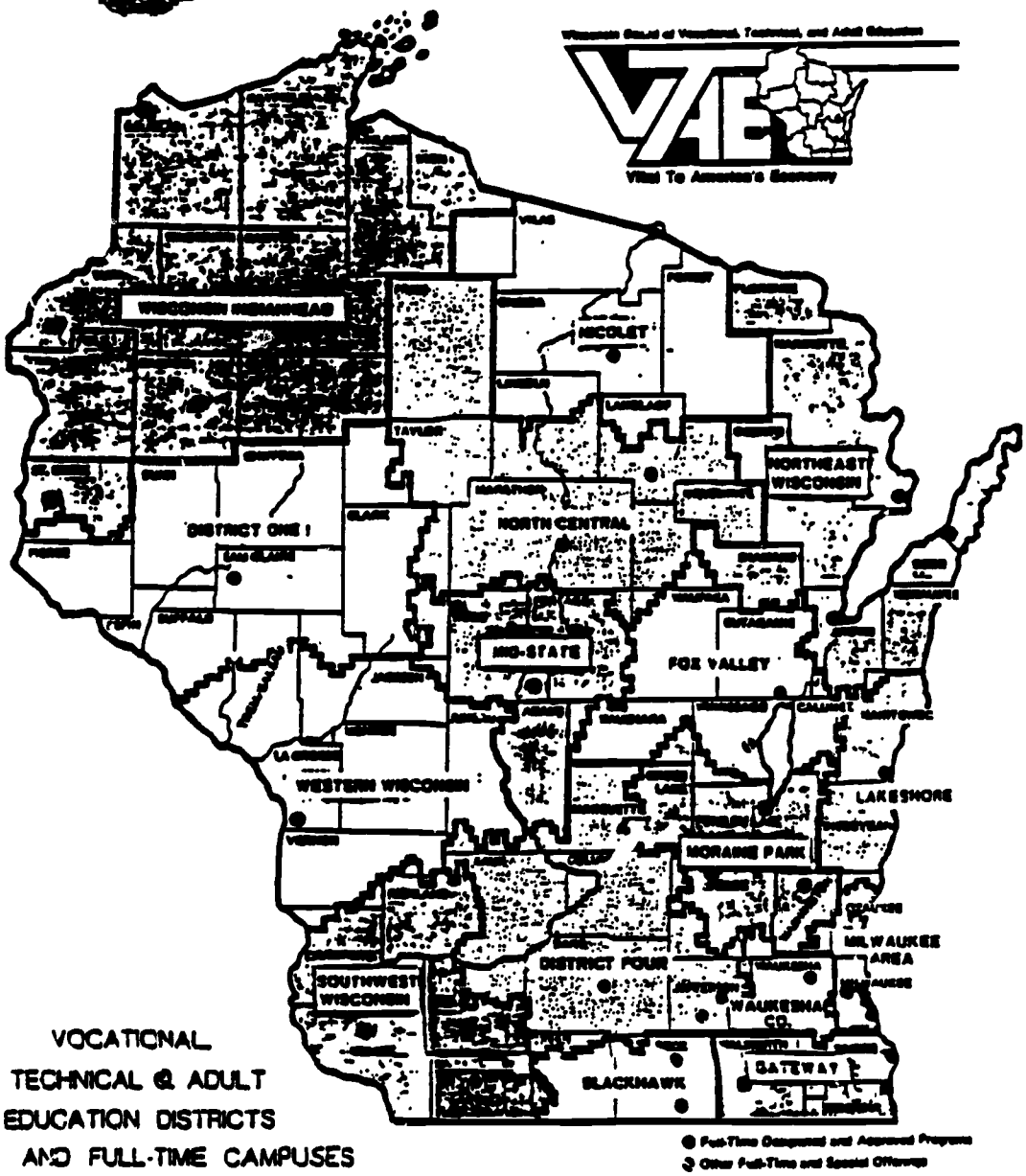
(4) TEACHER AND COURSE REQUIREMENTS. (a) The qualifications of educational personnel and the courses of study for each program offered in district schools shall be approved by the

APPENDIX B

WISCONSIN VOCATIONAL, TECHNICAL AND ADULT EDUCATION DISTRICTS

State of Wisconsin

BOARD OF VOCATIONAL, TECHNICAL & ADULT EDUCATION



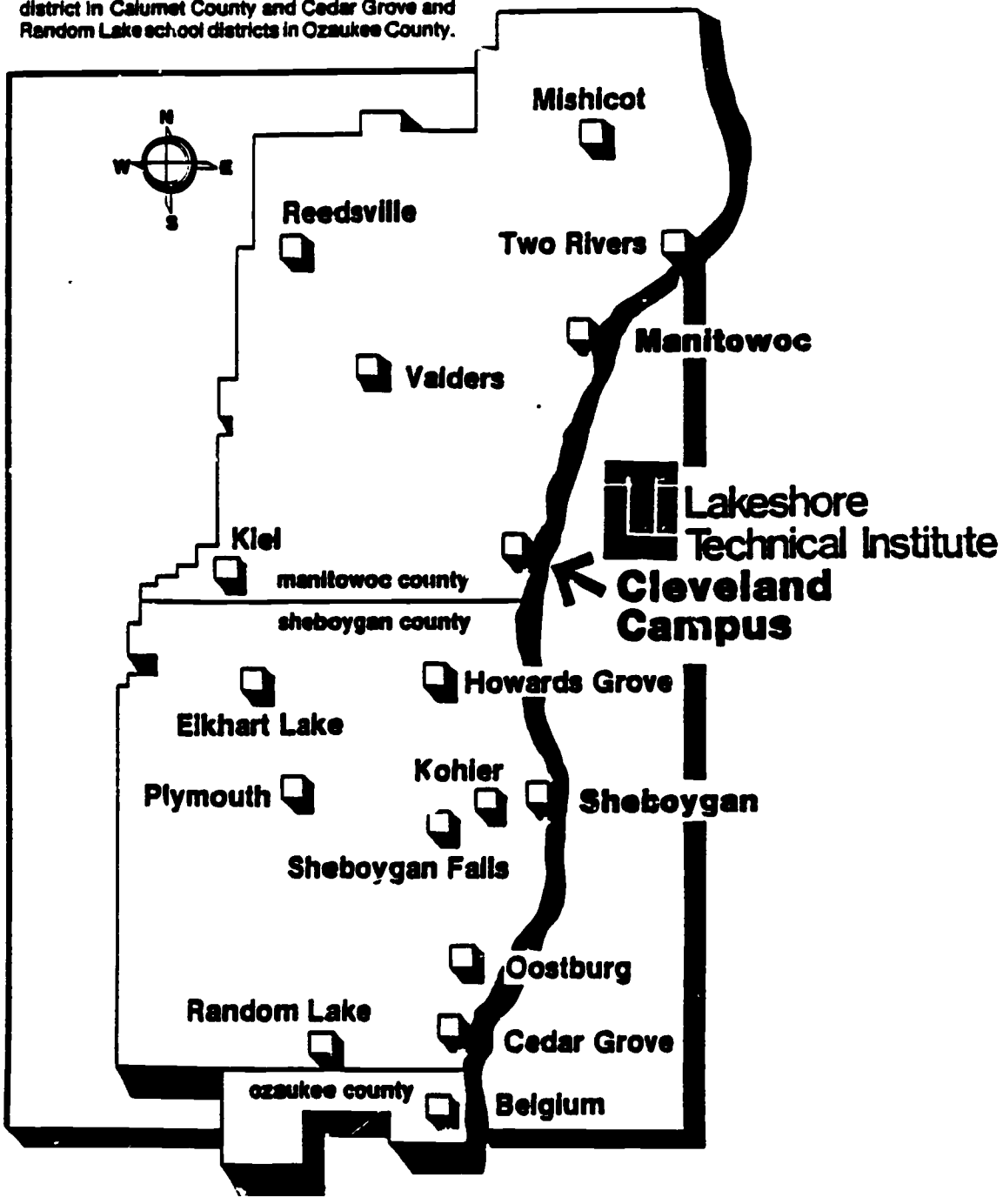
VOCATIONAL, TECHNICAL & ADULT EDUCATION DISTRICTS AND FULL-TIME CAMPUSES

APPENDIX C

LAKESHORE VOCATIONAL, TECHNICAL AND ADULT EDUCATION DISTRICT

Lakeshore VTAE District

Manitowoc County less the portion of the Chilton, Brillion, and Denmark school districts; Sheboygan County less the portion of the New Holstein school district; plus the portion of the Kiel school district in Calumet County and Cedar Grove and Random Lake school districts in Ozaukee County.



APPENDIX D

WISCONSIN ADMINISTRATIVE CODE CERTIFICATION REQUIREMENTS

Group Identification	Education	Occupational Experience 63.	Professional Experience 64.
Instructional Staff	50. Curriculum or Course Construction 2 cr. 51. Philosophy of VTAE in Wisconsin 2 cr. 52. Teaching Methods 2 cr. 53. Educational Psychology 2 cr. 54. Educational Evaluation 2 cr. 55. Guidance and Counseling 2 cr. 56. Bachelors Degree or Equivalent 57. Major Required of Academic Subject Teachers 30 cr. 60. Human/Intergroup Relations 2 cr.	Academic subject teachers - 12 months in any field except education Occupational subject teachers - 24 months as fully qualified worker in each instructional area	2 years
Supervisors-Coordinators	50. Curriculum or Course Construction 2 cr. 51. Philosophy of VTAE in Wisconsin 2 cr. 52. Teaching Methods 2 cr. 53. Educational Psychology 2 cr. 54. Educational Evaluation 2 cr. 55. Guidance and Counseling 2 cr. 56. Bachelors Degree or Equivalent 57. Major Required of Academic Subject Teachers 30 cr. 58. Supervision or Coordination 2 cr. 59. 12 Credits in Professional Education in Addition to the Above Requirements 61. Masters Degree or Equivalent 60. Human/Intergroup Relations 2 cr.	Academic subject teachers - 12 months in any field except education Occupational subject teachers - 24 months as fully qualified worker in each certified area	2 years
Administrators	50. Curriculum or Course Construction 2 cr. 51. Philosophy of VTAE in Wisconsin 2 cr. 52. Teaching Methods 2 cr. 53. Educational Psychology 2 cr. 54. Educational Evaluation 2 cr. 55. Guidance and Counseling 2 cr. 56. Bachelors Degree or Equivalent 57. Major Required of Academic Subject Teachers 30 cr. 60. 15 Credits of Professional Education Appropriate to the Administrative Position 61. Masters Degree or Equivalent 60. Human/Intergroup Relations 2 cr.	Academic subject teachers - 12 months in any field except education Occupational subject teachers - 24 months as fully qualified worker in each certification area	2 years
Counselors	51. Philosophy of VTAE in Wisconsin 2 cr. 62. Masters Degree in Guidance and Counseling or equivalent, i.e., bachelor degree plus 30 semester credits in counseling and guidance including the practicum experience	24 months outside field of education	2 years
Librarians	51. Philosophy of VTAE in Wisconsin 2 cr. 67. Masters Degree in Library Science or a bachelors degree including 30 semester credits in library science	12 months in any field except education or library management in an educational institution	2 years
Instructional Media, Audio-Visual, and Curriculum Specialists	50. Curriculum or Course Construction 2 cr. 51. Philosophy of VTAE in Wisconsin 52. Teaching Methods 2 cr. 53. Educational Psychology 2 cr. 54. Educational Evaluation 2 cr. 55. Guidance and Counseling 2 cr. 62. Graduate or undergraduate degree with major emphasis in A-V ed., instructional media or curriculum 60. Human/Intergroup Relations 2 cr.	12 months in any field except education	2 years
Renewal Requirements	The certificate will be renewed if the applicant for renewal has documented evidence of continued professional growth. Minimum evidence shall be 6 approved semester credits or 2 months of appropriate occupational experience or other professional activity delineated by the district in a plan of such activities.		
General	Five-year certificates are granted to personnel meeting requirements who are employed full time (50 percent or more as determined by each district) in state designated programs of a district.		

Rev. 3/81

APPENDIX E

STUDENT ASSESSMENT OF INSTRUCTION FORM

Lakeshore Technical Institute

STUDENT ASSESSMENT OF INSTRUCTION

INSTRUCTOR:

COURSE NUMBER

EXAMPLE: ● ○ ○ ○ ○
ERASE COMPLETELY TO CHANGE YOUR ANSWER
KEEP YOUR COMMENTS TO THE LEFT OF THE LINE INDICATED.

YEAR | TERM | MY AGE | SEX | PROGRAM

Your assistance will help LTI continue to provide quality instruction. Darken the one choice which most closely agrees with your opinion about each item. Also, if you desire, include any comment you think important about the item. The instructor will be given the completed assessment form to review.

1. My reason for taking this course is:
A. program requisite/preparation course B. program requirement C. program elective D. exploration/interest E. other
Comments

2. My opinion of the course before it started was:
A. highly positive B. positive C. no opinion D. negative E. highly negative
Comments

3. My opinion of the course at present is:
A. highly positive B. positive C. no opinion D. negative E. highly negative
Comments

4. I found this course to be:
A. very difficult B. difficult C. average D. easy E. very easy
Comments

5. My weekly out-of-class preparation for this course has averaged:
A. over 15 hours B. 10-15 hours C. 5-10 hours D. 1-5 hours E. 0 hours
Comments

6. The grade I expect to receive in this course is:
A. A B. B C. C D. I-Incomplete E. don't know
Comments

7. Information regarding course procedures, expectations, and outcome (grading, attendance, syllabus, outline, and objectives) distributed in writing at the start of the course was:
A. very usable B. usable C. limited D. very limited E. not provided
Comments

8. The course was well planned and organized.
A. highly agree B. agree C. neutral D. disagree E. highly disagree
Comments

9. Subject matter presented in the classroom agreed with the course objectives:
A. consistently B. usually C. sometimes D. seldom E. never
Comments

10. Assignments agreed with course objectives:
A. consistently B. usually C. sometimes D. seldom E. never
Comments

11. Exams/evaluations agreed with course objectives:
A. consistently B. usually C. sometimes D. seldom E. never/none given
Comments

12. The required text(s) was were of what value in helping me understand the course content?
A. very valuable B. moderately valuable C. somewhat valuable D. of little value E. no value or none required
Comments

13. Instructional materials/packets (not text) purchased in the bookstore or distributed in class were of what value in helping me understand the course content?
A. very valuable B. moderately valuable C. somewhat valuable D. of little value E. no value or none required
Comments

14. Course content and materials were free from bias (sex, race, national origin, color, age, creed, and handicap):
A. consistently B. usually C. sometimes D. seldom E. never
Comments

DO NOT WRITE BEYOND THIS LINE

FEED THIS DIRECTION

SCANTRON FORM NO 22477-LTI

15. The instructor explained written course information, goals of the course, attendance policy, and grading system:
A. thoroughly; during first week B. thoroughly; after first week
C. somewhat; during first week D. somewhat; after first week E. never
Comments _____

	CONSISTENTLY	USUALLY	SOMETIMES	SELDOM	NEVER
16. The instructor knew the subject well. Comments _____					
17. The instructor explained material clearly. Comments _____					
18. The instructor demonstrated course-related skills well. Comments _____					
19. The instructor showed enthusiasm for the subject. Comments _____					
20. The instructor organized classes/labs for effective use of time. Comments _____					
21. The instructor encouraged student participation in class or lab activities. Comments _____					
22. The instructor encouraged thinking, problem solving, and decision making. Comments _____					
23. The instructor spoke in a way that helped me learn. Comments _____					
24. The instructor communicated clearly in writing on the chalkboard, papers, and transparencies. Comments _____					
25. The instructor made appropriate use of teaching aids (chalkboard, films, models, slides, transparencies, video tapes, etc.) Comments _____					
26. The instructor graded and returned assignments, exams and quizzes within a reasonable time. Comments _____					
27. The instructor provided comments on my completed assignments. Comments _____					
28. The instructor demonstrated interest in my learning. Comments _____					
29. The instructor helped me apply course information to life or work. Comments _____					
30. The instructor treated me with respect. Comments _____					

DO NOT WRITE BEYOND THIS LINE

FEED THIS DIRECTION

31. My overall rating of the instructor is:
A. superior B. above average C. average D. below average E. poor
Comments _____ (A) (B) (C) (D) (E)

32. (A) (B) C D E

33. (A) (B) (C) (D) E

34. A (B) C D E

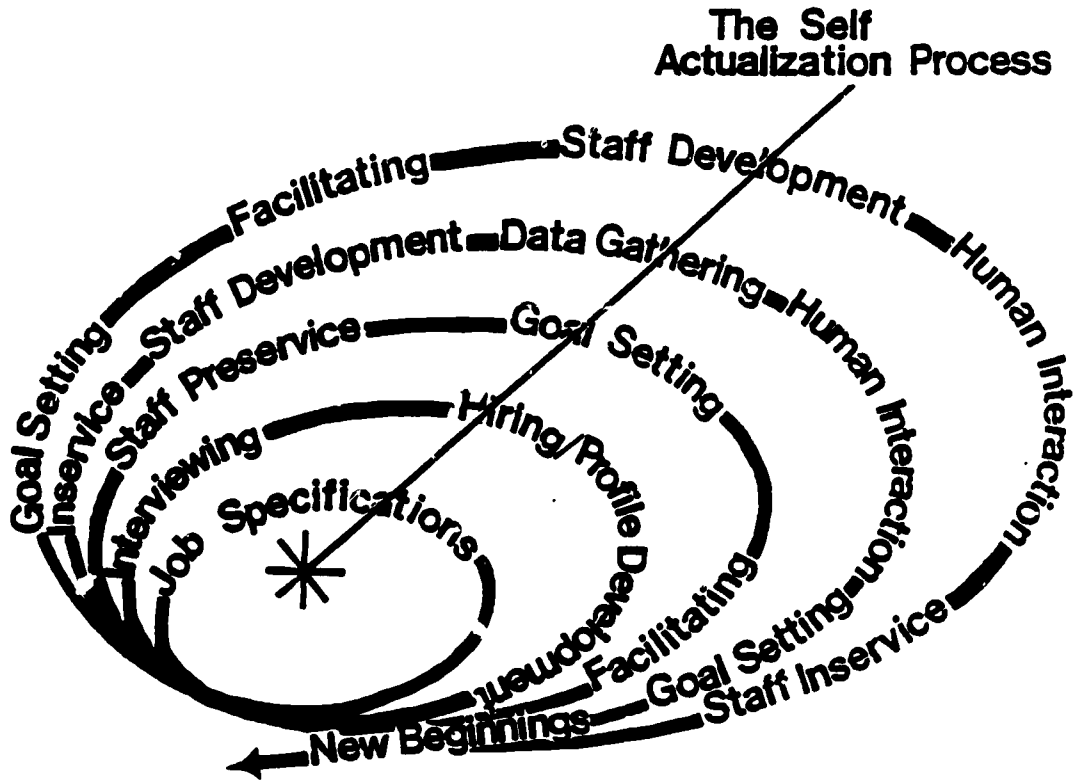
DO NOT WRITE BEYOND THIS LINE

35. What did you like most about this course/instructor?
_____
_____

36. What improvements do you suggest for the course/instructor?
_____

APPENDIX F

LIFELONG INVESTMENT FOR EXCELLENCE SPIRAL



LIFELONG INVESTMENT FOR EXCELLENCE

APPENDIX G

PROGRAMS, COURSES, AND NUMBER OF STUDENTS INCLUDED IN THE STUDY BY DIVISION

ASSOCIATE DEGREE PROGRAMS

Business and Marketing Division

Program	Number of Students	Occupational Course	General Education Course
Administrative Assistant--Information Processing	18	Information Processing Concepts	Office Communications I
Administrative Assistant--Secretarial	14	Information Processing Concepts	Office Communications I
Court and Conference Reporting	7	Machine Shorthand I	Office Communications I
Data Processing	9	Data Processing Concepts	Communication Skills I
Marketing	26	Marketing Principles	Business and Professional Speech
Materials Management	14	Overview of Management	Communication Skills I

Health Occupations Division

Associate Degree Nursing	10	Nursing I	Human Growth and Development
Dispensing Optician	21	Ophthalmic Optics	Communication Skills I

Trade and Industry Division

Electrical Power Engineering Technician	10	DC Fundamentals	Economics

Trade and Industry Division (continued)

Program	Number of Students	Occupational Course	General Education Course
Electromechanical Technology	13	Basic Electricity	Communication Skills I
Electronics Technician	10	DC Fundamentals	Communication Skills I
Mechanical Design Technician	10	Dimensions and Working Drawings	Communication Skills I
Plastics Technician	11	Introduction to Plastics	Communication Skills I

VOCATIONAL DIPLOMA PROGRAMS

Business and Marketing Division

Office Assistant	18	Clerical Accounting	Communications
Word Processing Specialist	11	Electronic Word Processing	Communications

Health Occupations Division

Pharmacy Technical Aide	16	Drug Classification	Basic Communications

Home Economics Division

Child Care Services	26	Art Activities	Basic Communications

Trade and Industry Division

Graphic Arts	18	Lithography Theory	Graphic Communications I

APPENDIX H

INSTRUCTIONS FOR ADMINISTERING THE STUDENT ASSESSMENT OF INSTRUCTION INSTRUMENT

1. Tell students that the purpose of the responses is to provide information to the instructor for use in improving the course organization and content delivery. It will take approximately 15 minutes to complete the form.

2. Tell students to use a pencil to complete the form.

3. Tell students to complete the following information at the top of the form:

   a. Instructor Name: Write in the instructor's name.

   b. Course Number: Write the number across the top, and darken the digits below each part of the written number.

   c. Year: Darken "87" (as indicated).

   d. Term: Darken "1" for fall, "2" for spring, "3" for summer, or as designated.

   e. Age: Write the student's age across the top, and darken the digits below each of the written numbers.

   f. Sex: Darken either "F" or "M."

   g. Program: Write the number across the top (get the number from Program Identification for Use), and darken the digits below each part of the written number.

4. Tell students to completely darken the rectangle with the letter of the choice that agrees with their opinion for numbers 1 through 31.

5. Collect the forms when students have completed them.

6. Check the form to make sure rectangle spaces have been completely filled in.

7. Send the completed forms to Marv Schrader.

Thank you for your assistance in this assessment.

APPENDIX I

MEANS AND STANDARD DEVIATIONS OF STUDENT RATINGS OF ITEMS 2 THROUGH 31 ON STUDENT ASSESSMENT OF INSTRUCTION INSTRUMENT

	Item	Mean	Standard Deviation
1	Not used in study.	--	--
2	My opinion of the course before it started was:	3.64	.94
3	My opinion of the course at present is:	3.93	.85
4	I found this course to be (difficulty):	3.32	.84
5	My weekly out-of-class preparation for this course has averaged:	2.64	.90
6	The grade I expect to receive in this course is:	3.82	1.13
7	Information regarding course procedures, expectations, and outcomes distributed in writing at the start of the course was:	4.20	.74
8	The course was well planned and organized:	3.99	.83
9	Subject matter presented in the classroom agreed with the course objectives:	4.51	.68
10	Assignments agreed with course objectives:	4.63	.64
11	Exams/evaluations agreed with course objectives:	4.60	.66
12	The required text(s) was/were of what value in helping me understand the course?	3.98	1.02
13	Instructional materials/packets purchased in the bookstore or distributed in class were of what value in helping me understand the course content?	3.56	1.38
14	Course content and materials were free from bias:	4.75	.61

	Item	Mean	Standard Deviation
15	The instructor explained written course information, goals of course, attendance policy, and grading policy:	4.69	.78
16	The instructor knew the subject well.	4.79	.43
17	The instructor explained material clearly.	4.73	.75
18	The instructor demonstrated course-related skills well.	4.52	.70
19	The instructor showed enthusiasm for the subject.	4.66	.61
20	The instructor organized classes/labs for effective use of time.	4.40	.78
21	The instructor encouraged student participation in class or lab activities.	4.48	.81
22	The instructor encouraged thinking, problem solving, and decision making.	4.23	.73
23	The instructor spoke in a way that helped me learn.	4.27	.90
24	The instructor communicated clearly in writing on the chalkboard, papers, and transparencies.	4.33	.90
25	The instructor made appropriate use of teaching aids.	4.17	1.00
26	The instructor graded and returned assignments, exams, and quizzes within a reasonable time.	4.57	.73
27	The instructor provided comments on my completed assignments.	4.11	1.20
28	The instructor demonstrated interest in my learning.	4.28	.83
29	The instructor helped me apply course information to life or work.	4.06	.99

	Item	Mean	Standard Deviation
30	The instructor treated me with respect.	4.66	.67
31	My overall rating of the instructor is:	4.15	.73

APPENDIX J

CORRELATIONS OF STUDENT RATINGS OF ITEMS WITH

STUDENT OVERALL INSTRUCTOR RATINGS

	Item	Correlation
1	Not used in study.	--
2	My opinion of the course before it started was:	.041
3	My opinion of the course at present is:	.471
4	I found this course to be (difficulty):	-.089
5	My weekly out-of-class preparation for this course has averaged:	.031
6	The grade I expect to receive in this course is:	.209
7	Information regarding course procedures, expectations, and outcomes distributed in writing at the start of the course was:	.390
8	The course was well planned and organized:	.606
9	Subject matter presented in the classroom agreed with the course objectives:	.429
10	Assignments agreed with course objectives:	.362
11	Exams/evaluations agreed with course objectives:	.340
12	The required text(s) was/were of what value in helping me understand the course?	.267
13	Instructional materials/packets purchased in the bookstore or distributed in class were of what value in helping me understand the course content?	.272
14	Course content and materials were free from bias:	.144
15	The instructor explained written course information, goals of course, attendance policy, and grading policy:	.337
16	The instructor knew the subject well.	.397
17	The instructor explained material clearly.	.593

	Item	Correlation
18	The instructor demonstrated course-related skills well.	.450
19	The instructor showed enthusiasm for the subject.	.500
20	The instructor organized classes/labs for effective use of time.	.480
21	The instructor encouraged student participation in class or lab activities.	.483
22	The instructor encouraged thinking, problem solving, and decision making.	.510
23	The instructor spoke in a way that helped me learn.	.636
24	The instructor communicated clearly in writing on the chalkboard, papers, and transparencies.	.538
25	The instructor made appropriate use of teaching aids.	.454
26	The instructor graded and returned assignments, exams, and quizzes within a reasonable time.	.376
27	The instructor provided comments on my completed assignments.	.345
28	The instructor demonstrated interest in my learning.	.525
29	The instructor helped me apply course information to life or work.	.459
30	The instructor treated me with respect.	.403
31	My overall rating of the instructor is:	

BIOGRAPHICAL SKETCH

Marvin A. Schrader was born in Medford, Wisconsin, and soon after moved to Dorchester, Wisconsin. He graduated from the Dorchester High School in May of 1954. The farm background led him to enroll in the Agriculture Education program at the University of Wisconsin-River Falls graduating with a baccalaureate degree having majors in Agriculture Education and Chemistry Education in 1958.

After graduation, he accepted a contract to teach secondary education at Fairchild High School, Fairchild, Wisconsin. While there, he taught the subjects of agriculture, biology, chemistry, driver education, and physics. He also served as assistant basketball coach.

In 1961, he received a National Science Foundation (NSF) grant to attend a science education program at the University of North Dakota. During the year following the grant, he worked as a laboratory assistant in the National Science Foundation Education program while continuing studies for a degree. He received the Master of Science Teaching degree (a degree unique to the University of North Dakota) with majors in Chemistry and Physics and a minor in Biology.

Upon receiving the master's degree, he accepted a chemistry teaching position at Lincoln High School in Manitowoc, Wisconsin. While teaching, he became interested in new approaches and techniques in the teaching field. Interested in the area of questioning techniques, he assisted Dr. Norris Sanders in the development work for the book, Classroom Questions, What Kinds (Harper and Row, 1966). While

teaching at Lincoln High School, he was also awarded two National Science Foundation summer grants to (1) become acquainted with the philosophy and mechanics of teaching the CHEM Bond Approach high school chemistry course and (2) develop laboratory materials for the CHEM Bond Approach course. He also received a National Defense Education Act (NDEA) summer grant to study research in education.

He, with four other staff members from the Manitowoc Public School System, wrote a curriculum development proposal and received a federal grant to fund a Cooperative Educational Service Agency (CESA) #10 Curriculum Development Center for a four-year period. He then served in the capacity of mathematics and science curriculum consultant at the center with responsibilities for assisting kindergarten through grade twelve parochial and public school teachers in the incorporation of the new mathematics and science approaches into their curriculum and objectives and questioning techniques into their teaching. This was accomplished through workshop involvement and consultation with individual teachers.

After the project ended, he began employment as the first curriculum specialist for the Lakeshore Vocational, Technical and Adult Education District (LTI). In this capacity, he introduced and assisted in implementing the curriculum development techniques utilized in previous years in the kindergarten through grade twelve level to the postsecondary level vocational, technical, and adult education instructional staff. The position responsibilities involved both curriculum

development and staff development activities. He is currently employed as a research and curriculum specialist at LTC.

Marvin has shared his experience and knowledge with educators and noneducators in a number of ways. A number of workshops emphasizing measurable objectives and questioning techniques have been presented at colleges and universities. A sampling includes Gustavus Adolphus College, Mankato State College, and Texas Christian University. He also serves as a University of Wisconsin-Stout adjunct instructor teaching the course "Course Construction."

A number of presentations have been made at regional and state educational group conferences and meetings on the topics of curriculum development, staff development, and teaching techniques. He has also authored or coauthored a number of papers and reports on topics ranging from curriculum articulation to providing alternative delivery systems for providing education/training to employees in noneducational institutions.

To increase his competence level, Marvin enrolled in the Educational Specialist--Vocational Education program at University of Wisconsin-Stout in Menomonie, Wisconsin, and was awarded the Educational Specialist degree in 1974. He enrolled in the Nova University Doctor of Education Program in Higher Education in 1981.

Marvin presently holds state of Wisconsin lifetime licenses in secondary education as a teacher of agriculture, biology, and chemistry. He also holds Wisconsin VTAE System five-year certification

as an instructional specialist. These have been awarded on the basis of course work, educational experience, and work experience.

An interest in professional organization participation is illustrated by the life membership he holds in both the American Vocational Association and the National Science Teachers Association. He holds charter memberships in the Lakeshore Vocational Association, a local of the American Vocational Association, and in the Society for the Promotion of Individual Worth in Education and Training and memberships in the American Educational Research Association, Association for Supervision and Curriculum Development, and Wisconsin Vocational Association having also served as a board member. He serves as the Lakeshore VTAE District representative to the Wisconsin Vocational, Technical and Adult Education Administrators Association Research, Planning, and Development Committee and recently completed a four-year sequence as secretary-treasurer, vice chairperson, chairperson, and past chairperson.

Marvin and his wife, Janet, reside just outside the city of Sheboygan, Wisconsin, a city of approximately 50,000 people located along the west shoreline of Lake Michigan. They have three children. Daryl, the oldest, is an actuary for an insurance company. Cynthia is an administrative clerk in the United States Marine Corps at Camp Pendleton. David, the youngest, just graduated from North High School in the Sheboygan Area School District.

SIGNATURE PAGE

I certify that I have read and am willing to sponsor this Major Applied Research Project submitted by Marvin A. Schrader. In my opinion, it conforms to acceptable standards and is fully adequate in scope and quality as a Major Applied Research Project for the degree of Doctor of Education at Nova University.

Sept 17 1988
Date

S. V. Martorana
Sebastian V. Martorana, Ph.D.
MARP Advisor

I certify that I have read and am willing to sponsor this Major Applied Research Project; and in my opinion, it conforms to acceptable standards for a Major Applied Research Project for the degree of Doctor of Education at Nova University.

Sept 2, 1988
Date

Clete Hinton
Clete Hinton, Ed.D.
Local Committee Member

This Major Applied Research Project was submitted to the Central Staff of the Center for Higher Education of Nova University and is acceptable as a partial fulfillment of the requirements for the degree of Doctor of Education.

9/30/88
Date

Philip H. DeTurk, Ed.D.
Central Staff Committee Member