

AN ABSTRACT OF THE THESIS OF

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Abstract approved:

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The major problem examined in this study was that of determining whether or not there is any relationship between student ratings of instruction in the community college university transfer area and the professional teacher-training backgrounds of instructors. In addition, several other factors which may influence ratings and which might interact with instructor professional education background were considered. These included: (1) student grade point average, (2) length of teaching experience, and (3) amount of subject matter, graduate-level preparation of instructors.

To secure student ratings, 15 full-time instructors who were graduates of teacher-training programs and 15 without such training were selected at random at three Oregon Community Colleges. These instructors then administered in their university transfer classes the Student Instructional Report, a rating instrument developed by the Educational Testing Service of Princeton, New Jersey. A total of 1,380 students completed rating instruments.

Independent variables in this study were: (1) professional teacher training, (2) amount of teaching experience, (3) amount of subject-matter, graduate-level preparation, and (4) student grade point average. Dependent variables in the study consisted of the general and sub-scale factors on the Student Instructional Report. These were: (1) Overall Rating, (2) Faculty-Student Interaction, (3) Course Organization and Planning, (4) Communications, (5) Textbooks and Readings, (6) Course Difficulty and Workload, and (7) Examinations. The technique of canonical correlation analysis was used. The level of confidence selected was .05.

The relationship among only one set of variables was found to be statistically significant. Inspection of the coefficients of correlation for variables in this set indicated that the dependent variable of Course Organization and Planning was significantly correlated with the independent variables of professional teacher training and amount of subject-matter, graduate-level preparation. What these results indicate is that professionally prepared instructors tend to receive higher ratings on Course Organization and Planning than do instructors not professionally-trained. Further, instructors with greater amounts of subject-matter preparation tend to receive lower ratings on this dependent variable than do those with lesser amounts of such preparation. Partial correlation coefficients calculated for each of the independent variables also

indicate that they are not redundant and that the relationship of each with the dependent variable is independent of the influence of the other.

The significant findings were that: (1) on course organization and planning, professionally-trained instructors tend to be more highly rated than instructors not so trained, and (2) a great amount of subject-matter, graduate-level preparation tends to have a negative effect on the rating of instructional performance on this sub-scale of both trained and non-trained instructors.

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The Relationship Between Student Ratings and Selected
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In the Community College

by

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THE RELATIONSHIP BETWEEN STUDENT RATINGS AND SELECTED CHARACTERISTICS OF UNIVERSITY TRANSFER INSTRUCTORS IN THE COMMUNITY COLLEGE

Chapter 1

INTRODUCTION

Because of their emphasis upon the teaching function rather than research, community colleges, in recruiting instructional staff, are inclined to hire personnel with professional education training from public school backgrounds rather than those with strictly academic graduate training. Medsker, for example, in a nationwide survey of 3,283 community college instructors, noted that over 64 percent had come directly from secondary or elementary teaching backgrounds (1960, p. 172).

Considering the comprehensive curricula of the community college, which includes developmental and remedial programs for which specialized professional training and experience of instructional staff would seem especially relevant, it might be expected that substantial numbers of those with public school backgrounds would be recruited for these areas, leaving the more traditionally academic university-transfer curricula the domain of those with subject-matter degrees. This does not, however, appear to be the case; a 1969 survey conducted in Oregon community colleges indicated that 51 percent of those teaching in the university-transfer areas came directly

from public school backgrounds (Oregon State University, 1969, p. 28). More recently, Harsha (1978, p. 182), reported that approximately 60 percent of all community college instructors were still recruited from public schools. Given the relatively uniform requirements for certification of public school teachers nationally (Woellner, 1978), it can probably be safely assumed that the graduate degrees of most of these instructors are in education, consisting of an amalgam of professional education and academic course-work, rather than preparation in strictly academic, subject-matter specialties.

These hiring practices appear to be based, at least in part, upon the assumption that former public school teachers, by virtue of their professional education backgrounds and teaching experience, are more effective in the classroom than are those who lack such background.

It is held that junior college instructors who are advanced from the high schools make better junior college teachers than instructors recruited from the universities, because the emphasis in their preparation has been upon teaching rather than upon research (Dolan, 1952, p. 330).

In this study, Dolan concluded that junior college instructors should receive essentially the same professional education training as do secondary teachers. To these basic requirements, he recommended adding courses in junior college curricula and philosophy (Dolan, pp. 329-336).

(Some writers cited in this study use the terms community

college, community-junior college, and junior college interchangeably. Community college is preferred current usage.)

Reflecting a similar perspective, Palinchak, in discussing the preparation of faculty for the community college, observed that:

Faculty must perceive their roles as teachers first and subject-matter specialists second. The traditional academic mind can only serve to subvert the community college, especially from within (1973, p. 261).

While many community college authorities writing on the subject seem to share these views, and although surveys of community college administrators and faculty indicate widespread and long-standing support for this perspective (Garrison, 1941; Kovach, 1973), it appears that there is little or no direct empirical evidence, based upon systematic comparison and evaluation of the actual classroom performance of community college instructors with teacher-training backgrounds and those with strictly academic graduate training, to support these positions. Cohen, Lombardi, and Brawer (1975, pp. 111-132), in their review of literature relating to community college faculty, noted that there are virtually no studies relating to faculty effectiveness; most are surveys reporting demographic, actuarial, or attitudinal data. Some others, such as that conducted by Cohen and Brawer (1969), tended to focus on the relationship of personality to teacher effectiveness rather

than on training effects. The few studies which have dealt with the question appear somewhat inconclusive; these are examined in some detail in Chapter 2, below. It would seem important, therefore, and it was the central purpose of this study, to examine the question of whether or not community college student ratings of instructors indicate any relationship between the quality of instruction provided by teachers with professional training and those lacking such special preparation; and, if such relationship can be observed, to identify those attributes of instructional performance which are so distinguished. Information of this kind could provide useful data for college administrators involved in hiring instructional staff, those concerned with staff development programs and in-service training, and colleges and universities engaged in the preparation and training of community college instructors.

Background of the Problem

Authorities writing on the nature of the modern community college customarily define it as a two-year, comprehensive educational institution designed to serve the diverse post-secondary educational needs of an heterogeneous adult student population (Burnett, 1977, pp. 1-2; Fields, 1962, pp. 63-95; Monroe, 1972, pp. 26-36). Thus, while providing some programs paralleling those offered in the first two years at four-year colleges and universities,

the emphasis in the community college is focused almost exclusively upon the quality of instruction, with scholarly research by faculty being accorded virtually no importance (Garrison, 1967, pp. 16-17; Jencks & Riesman, 1968, p. 493).

Because of the importance ascribed to the teaching function in the community college, its leaders have long urged that most of its teachers require special preparation at the graduate level which would include training in professional education as well as in the subject-matter specialties (Bleyer, 1979, pp. 46-51; Brick, 1963, p. 151; Pugh, 1947, p. 389). This view is lent support by Berelson (1960), who, in commenting on graduate education in general, observed that traditional academic graduate programs, with their emphasis on research, do a poor job of preparing people for college teaching.

The graduate school is not selecting the right students in the first place and then not training them correctly. As to the latter, the program lacks (a) sufficient breadth and (b) sufficient training in teaching (p. 45).

Since at least one of the important functions of the four-year college or university is teaching, it might seem that their needs and those of the community college are identical with respect to the preparation of instructors, but this does not appear to be the case.

The junior college teacher encounters a wider range of student abilities, motivation, interests, and achievement than

is usually found in the lower division of senior colleges and universities with highly selective admissions requirements. . . . The junior college instructor works with many students who require opportunities to repair weak backgrounds; and with those who frequently respond more readily to the practical than to the theoretical (Gleazer, 1964, pp. 3-4).

In discussing the differences between preparation for teaching in four-year colleges and universities and in community colleges, Solomon (1968, p. 125), also focused on the special nature of the community college student population.

Community college student bodies are notably heterogeneous as to age, socioeconomic background, range and type of abilities, educational and vocational goals. This places heavy responsibility upon the teacher who has in his classes some students preparing for professional careers, others who will be skilled workers or tradesmen, some who are in their late teens, others in their forties or fifties, some with really superior verbal ability and achievement, others deficient in these areas.

That community college students do comprise a far more heterogeneous population, particularly in terms of abilities, socioeconomic backgrounds, and academic preparation, than that found in most four-year colleges and universities, has been amply documented by Cross (1968) in The Junior College Student: A Research Description, and Koos (1970) in The Community College Student. Both writers note differences consistent with those described by Gleazer and Solomon, above.

While it might be expected that the differences between student populations in four-year schools and community colleges will become somewhat less pronounced as the former, under the terms of recent civil rights legislation, continue to extend educational opportunities to members of minorities and others who have historically had only limited access to higher education, it seems likely that community colleges will continue to be somewhat distinctive in providing educational services to a highly diversified student population. Because of this, it is probable that community colleges will continue attempting to recruit teachers believed to be best equipped, by virtue of both training and experience, to work most effectively with students representing a variety of abilities, ages, aptitudes, and interests.

Given this imperative, it is not surprising that community colleges have tended to recruit heavily from the ranks of public school teachers. These teachers at least have been trained for, have experience working with, and, because they presumably chose early in their college careers to enter the teaching profession, are probably committed to serving the educational needs of a student population which, with the exception of age differentials and general level of maturation, is analogous to that found in the community college--especially with respect to wide differences in

abilities, socioeconomic backgrounds, aptitudes, and interests. With the exception of the age differences, much of what Solomon and Gleazer said, as noted above, is equally true of secondary school students. It would therefore appear reasonable for community college administrators and others to assume that these teachers are more likely to be successful in the community college classroom than are their strictly academic, subject-matter-trained graduate school counterparts. As noted above, however, this important assumption, with its implications for hiring and recruiting practices, preservice training needs of potential community college instructors, and the in-service, staff development needs of existing community college faculty, remains untested.

Statement of the Problem

The major question addressed in this study was that of determining whether or not there is any relationship between student ratings of instruction in the community college university-transfer area and the professional education backgrounds of instructors. In more specific terms, the questions which were asked were:

1. Is there any relationship between student ratings of instruction and professional teacher-training backgrounds of instructors in the university transfer area?

2. Is there any relationship between student ratings of instruction and the amount of teaching experience of instructors in the university transfer area?
3. Is there any relationship between student ratings of instruction and the amount of graduate-level, subject-matter preparation of instructors in the university transfer area?
4. Is there any relationship between prior college achievement, as reflected in student grade-point-average, of students and their ratings of instructors in the university transfer area?

Theoretical Framework: Definitions and Assumptions

The category of instructors identified as academics consists of individuals with subject-matter master's degrees or above who have never completed a teacher-education program at either the undergraduate or graduate level. Since, however, non-education majors do occasionally take courses in the education area, instructors who have taken any college or university courses relating directly to instructional activities, such as educational psychology, methods and materials (including audio-visual aids), educational tests and measurements, or supervised practice teaching, are specifically excluded from this definition.

But instructors who have taken nine or fewer quarter hours of courses in the history, philosophy, or sociology of education are included on the assumption that such courses would tend to have minimal impact on skills and techniques relating directly to classroom performance.

The category of instructors identified as educationists consists of individuals with master's degrees or above who have completed secondary teacher preparation programs at either the graduate or undergraduate level. As noted earlier (Woellner, 1978), because standards for teacher preparation programs are relatively uniform throughout the nation, it is assumed that these instructors are comparable in terms of their professional education backgrounds.

It is assumed for purposes of this study that basic personality modalities are distributed in a relatively normal fashion across both groups of instructors used in this research. Sorey, for example, tested the hypothesis that "superior teachers, as rated by their students, will score in the socially valued direction on a greater number of the Guilford-Zimmerman traits than will inferior teachers" (cited in Dissertation Abstracts, 1968, p. 4916-A). The hypothesis was not confirmed. Similar results were reported by Lewis (1964) in another study. Isaacson, McKeachie, and Milholland (1963) found that student ratings of instruction correlated significantly only with peer ratings of culture:

"Teaching fellows rated by their peers as artistically sensitive, intellectual, and so on, tend to be the ones rated as effective teachers by their students" (pp. 112-113). In the absence, therefore, of any evidence which would suggest that professionally trained teachers differ significantly from other college or university graduates in the degree to which they are well-adjusted generally, empathic, objective, or well-organized, this assumption seems reasonable.

It is assumed that staff development or in-service training programs have, for the most part, a negligible effect on the in-class professional performance of both educationist and academic instructors. While most community colleges undertake some sort of staff development and in-service training of instructional staff, efforts in these areas tend to be somewhat unsystematic and limited in most institutions, and often fail to identify the training and professional needs of instructional personnel (Hammons, Smith, & Watts, 1978). A national survey of community college presidents and deans regarding the adequacy of their training programs concluded by saying,

the data which [are] available on training supply clearly [suggest] a bleak picture, with a serious national "training gap" reported in the survey from two-year college presidents and deans in every section of the country (American Association of Junior Colleges, 1969, p. 24).

It appears that very few community colleges operate staff training programs designed to provide academic

instructors with intensive and systematic professional training in any way comparable to that received by their educationist colleagues, and the institutions participating in this study do not offer such programs. Therefore, while some in-service programs doubtless serve to acquaint academics with the rudiments of educational philosophy and psychology, course planning techniques, and the use of various instructional media, it would seem doubtful that the relatively few hours typically spent in these activities could be considered the functional equivalent of the extended and intensive professional training received by educationists.

Summary

This chapter has consisted of a brief introduction to the problem considered in this study. It was noted that, although community college authorities are inclined to favor recruiting and hiring instructional staff with professional teacher-training backgrounds on the assumption that such instructors are more effective teachers than are those without professional training, evidence supporting this assumption appears inconclusive. Considering the important implications this question has for hiring, recruiting, and training practices relating to community college instructors, the central purpose of this study was defined as that of determining whether or not community college student

ratings of instructional performance are related to the professional education backgrounds of instructors in the university transfer area.

The specific problems addressed by the study include examining the relationships between student ratings and: (1) professional education backgrounds of instructors, (2) length of teaching experience, (3) student grade point average, and (4) amount of graduate-level, subject-matter preparation of instructors.

The study is limited in its treatment of the problem to two groups of full-time community college instructors: (1) educationists, defined as instructors who had graduated from teacher preparation or certification programs, and (2) academics, defined as instructors who had earned nine or fewer quarter hours of credit in professional education courses of a general nature.

Chapter 2

REVIEW OF LITERATURE

This chapter consists of a review of literature relevant to the major concerns of this study. It is divided into four major sections: (1) formal preparation and training needs of community college instructors in the academic or university-transfer area, (2) evaluation of community college instructors, (3) student achievement and ratings of instructors, and (4) a summary. Materials were selected for inclusion in this chapter to illustrate the need for research of the type here undertaken and to provide both formal justification and rationale for the methods employed in conducting this study.

Formal Preparation and Training Needs of Community College Instructors in the Academic/University-Transfer Area

In a 1940 study undertaken to identify the academic and professional education competencies of instructors teaching in junior colleges and to determine the formal preparation considered desirable for junior college teachers of academic subjects, Garrison (1941), surveyed and analyzed data reported by 716 junior college instructors and 49 administrators from 51 junior colleges in 21 states (p. 135). With respect to formal preparation, Garrison

learned that most junior college instructors had earned master's degrees and that, in terms of professional education courses, "more than 85 percent of the instructors had had almost 22 semester hours of undergraduate work in professional courses and that over 59 percent had more than 16 semester hours in graduate courses" (p. 137). In addition to formal preparation, Garrison's respondents also indicated that 70 percent of the instructors had experience in high school teaching, 22 percent in elementary schools, 16 percent in junior high schools, and 35 percent in colleges and universities (p. 138). These data clearly indicate that most of Garrison's respondents had been trained as elementary or secondary teachers and that most had been recruited from positions in public schools rather than from colleges and universities.

In analyzing the views of those surveyed regarding professional education considered desirable for junior college teachers, Garrison stated,

It was noted that educational psychology, guidance and counseling, methods of teaching in the junior college, college problems, practice teaching, tests and measurements, and philosophy of education were all recommended by a sufficient number of instructors to warrant the assumption that they were probably necessary. Administrative officers in checking a similar list gave preference to the same subjects but indicated that only two of them should be especially organized for junior college instructors, guidance and counseling and the junior college (p. 137).

In view of the fact that most of Garrison's respondents themselves were professionally trained as teachers, there is a strong possibility that their views regarding the importance of such training may reflect biases as much as informed opinion. This renders his assumptions that their recommendations constitute a sufficient basis for asserting the necessity for such training somewhat questionable.

Pursuing a strategy similar to that employed by Garrison, The Committee on Teacher Preparation, appointed in 1941 by President James C. Miller of the American Association of Junior Colleges, surveyed junior college administrators, graduate schools of education, and specialists from the United States Office of Education in an effort to determine what preparation was needed for teaching in the junior college (Pugh, 1947). After analyzing the data collected, the Committee recommended that programs of preparation for junior college teaching include:

- (1) training in guidance and counseling,
- (2) understanding the philosophy and background of the junior college, (3) student teaching and observation in the junior college, (4) experiences underlying the committee assignments and similar faculty services, and (5) emphasis upon the community nature of the junior college. It was agreed that a sound graduate program would include (1) a sound liberal and cultural education, (2) adequate knowledge of subject-matter fields, and (3) professional preparation to fit candidates specifically for the junior college (p. 389).

Again, as in the case of the Garrison study, conclusions regarding the necessity for professional training of junior college teachers were derived from survey data reflecting the opinions of persons professionally involved in junior college education. No reference is made to empirical research, based upon systematic comparisons and evaluations of the classroom performance of junior college teachers, which might provide validation of the claim that professionally trained junior college teachers perform more effectively than those not so trained.

In a survey involving 1,458 junior college teachers in 48 junior colleges in the Midwest and California, Koos (1948), reported that 70.5 percent of those instructors teaching only junior college-level academic subjects had earned 20 or more semester hours in professional education; only 12 percent reported having fewer than 15 semester hours in education (p. 334). In the same article, he noted that the background of most junior college teachers "is high-school teaching, and the work in education reported by junior college teachers is, in the main, that taken to prepare for teaching at the high-school level" (p. 335).

In a later article where he discussed in greater detail the results of this study, Koos stated that

The courses in education included in the preparation of junior-college teachers were, for the most part, the same as those of high school teachers. A few partial tendencies to differences appear,

in cases where the percentages of junior-college teachers who had had courses in Tests and Measurements, Educational Administration, Secondary-School Administration, Curriculum (General), Junior College, and Student Personnel Services in Higher Institutions were appreciably, although not strikingly, larger than the percentages for high-school teachers. However, except for the last two courses named, these have no greater significance for post-high school than for high-school teaching (1950, p. 313).

In this same report, Koos recommended that programs of preparation for teachers in community colleges should include:

Philosophy and place of the junior college
Organizing and administering junior colleges
Junior-college curriculum
Psychology of post- or late adolescence
Student-personnel problems in junior colleges
Methods of teaching in junior colleges
Apprentice, or practice, teaching
(p. 314).

This seems to suggest that he considered the professional education backgrounds of most of the teachers surveyed inadequate, but in an earlier study, he observed that

One is justified in wishing that the program for junior-college teachers would include a better recognition of elements of peculiar significance for teaching at the junior-college level than does the typical program for high-school teachers. At the same time, remonstrance is in order against the attitude of persons steeped in the collegiate tradition who contend that all of this work taken in preparation for high-school teaching is beside the point as preparation for teaching at the next higher level. Complete appraisal would take into account the large extent of overlapping of junior-college and high-

school courses and the nearness of age and interests of the student population at the two levels. Such an appraisal would be certain to find much in common in the preparation in education needed for those two levels (1948, p. 344).

It would appear, therefore, that in describing his preparation program, Koos was most concerned with addressing what he perceived to be the needs of prospective junior college teachers coming from strictly academic backgrounds.

Koos's studies are significant to the purposes of this study for several reasons: (1) his research tends to confirm the earlier study by Garrison which indicated that substantial numbers of university-transfer instructors in the junior colleges were recruited from high school positions, (2) most such instructors were, as a consequence, professionally trained as teachers, (3) while recommending special preparation programs for community college teachers, Koos argued that the professional preparation of former high school teachers was, in large measure, appropriate for those teaching at the junior college level, and (4) while recommending some form of professional preparation for junior college instructors, implying that he believes such preparation will tend to produce more competent instructors, he fails to cite any direct evidence which might tend to support such an assumption.

It might be argued that Koos's judgment regarding the nearness in age of high school and community college

students, while possibly true prior to 1950, no longer holds. It might be argued that recent dramatic increases in the numbers of older community college students require the community college to

adapt its teaching methods and curriculum to the needs of an older generation of students who wish to be treated as adults and who may require from the instructor a great degree of understanding and patience, especially in the matter of long reading assignments and objective examinations (Monroe, p. 187).

If it were true that the age distributions of community college students had changed markedly in the last two decades, this criticism of Koos's position regarding the appropriateness for community college instructors of high school-level teacher preparation might be accurate, but such does not appear to be the case.

In a study published in 1970, Koos reported the results of his more recent research on community college student age characteristics, observing that

the impression gained from the rapidly mounting percentages up to 19 or 20 and the slowly rising percentages after these ages is clearly of a student body predominantly in the last few years of the second decade of life. Only a relatively small proportion, roughly an eighth of first-year students, a fifth of second-year students, and a sixth of students in both years, were reported as older than 20 at the opening of the school year (p. 6).

After discussing similar recent research findings by others, he concluded by saying,

in view of the evidence presented from these several compilations, it seems safe to conclude that typically the ages of no less than two-thirds to four-fifths and even up to nine-tenths or more of the community college student body are within the later years of the second decade of life, meaning by this the ages of 17, 18, 19, and 20 (p. 9).

A more recent study by Sheldon and Grafton (1978), in the large urban community college district of Los Angeles, provides additional support for Koos's argument that the community college population tends to be quite young. These investigators found that, while the mean age for students in the institutions in their district was 27, the median age was approximately 20, the modal age was 19, and students under 25 accounted for 75 percent of those enrolled in credit courses (p. 9).

To use a supermarket analogy, the largest number of customers are 19-year-olds, and they are doing more buying than anyone else. Put slightly more formally, the distribution has an extreme positive skew. There are more 19-year-old students than any other age, and they are carrying more academic units than anyone else (p. 39).

That the findings obtained by Sheldon and Grafton can probably be generalized to community colleges outside of Southern California is indicated by the findings of an unpublished student enrollment survey conducted by Umpqua Community College in Roseburg, Oregon. The Registrar at Umpqua Community College reported that 74.5 percent of the students at that institution enrolled in credit courses in

the transfer and occupational and vocational areas during Fall Term, 1979, were 28 years old or younger, and that 46.7 percent were 20 years old or younger (Snodgrass, 1980). These data are similar to that reported by Sheldon and Grafton, suggesting that a substantial majority of community college students still fall within a relatively youthful age-range.

These data appear to offer some vindication for Koos's earlier view that the professional training needs of community college instructors are quite similar to those of high school teachers, given the nearness in age of the two populations. It should, however, be noted that in his 1970 study Koos also observed that because older students constitute a significant minority of students enrolled in community colleges, their special needs and characteristics require consideration. Dolan essentially echoed Koos where, in a 1952 study, he said,

the writer advocates advancing good secondary school teachers up to the junior college level. The main function of a junior college is teaching, and the secondary school teacher is well prepared for this work. Every certified high school teacher has generally had basic preparation in the field of education. Generally, secondary school teachers have had courses in general and advanced psychology, the history of education, educational sociology, tests and measurements, high school methods, and a year of practice teaching (p. 335).

In this same survey of junior college teachers in Illinois, Dolan noted that approximately 70 percent had previously taught in high schools, with about 14 percent reporting having taught first in a four-year college. In addition, his respondents

placed a high value on the professional education courses they had taken, in this order: elementary educational psychology, practice teaching in high school, special subject methods, guidance, tests and measurements, advanced educational psychology, principles and methods of high school teaching, philosophy of education, psychology of adolescence, and introduction to education (p. 332).

In describing what he considered an adequate program of preparation for junior college instructors, Dolan recommended that

junior college teachers be given the same education courses commonly required of candidates for secondary school teaching, with the addition of audio-visual education, plus these special junior college courses:

- a. The junior college--history, development, function, philosophy of the junior college, organization and administration, with a section on adult education and "cooperations"
- b. Psychology of adolescence--with particular emphasis on late- and post-adolescent years, understanding of human growth and development, and of the problems of the junior college age-group
- c. The junior college curriculum--construction techniques and evaluation procedures
- d. Guidance and counseling--adjusted to the junior college age-group; the understanding of the individual student and his problems (p. 333).

Employing survey methods similar to those in the other studies cited above, Dolan obtained similar data and drew similar conclusions: (1) most community college teachers are recruited from high school teaching positions and are professionally prepared as teachers, (2) a substantial majority of community college teachers believe that professional preparation in education is important, and (3) Dolan, himself arguing that professionally trained teachers perform better than those without such training, concurred with the views of his respondents, recommending that community college teachers should receive essentially the same professional preparation as do high school teachers, with the addition of some specialized courses relating specifically to the junior college.

Utilizing data collected from surveys of junior college administrators working with the Committee on Accreditation of the California State Board of Education, Stone (1958), in discussing the preparation of academic instructors in the junior college, noted that the Committee believed academic instructors to be deficient in professional preparation.

In the professional education sequence, there usually is too little stress on the concept of the junior college as an institution--its place in higher education and its unique role as a community college. Not enough attention is given to the special function of each junior college instructor as an academic and vocational counselor of students. There is a lack

of understanding of the learning process and the unique characteristics of the age level of students attending junior colleges (pp. 368-369).

Proceeding from this, Stone outlined what he considered to be an adequate program of preparation for academic instructors in the junior college:

1. Academic depth as well as breadth in the program which leads to a Master of Arts Degree and to the junior college credential
2. A junior college course which includes the purposes and functions of the junior college with emphasis upon the general education concept of the lower division work of the junior college
3. Student teaching in a junior college which is supervised by a junior college specialist
4. Psychological orientation to the nature of students of junior college age and the techniques for counseling and guiding such students
5. Knowledge of the sociological foundations of education (p. 369).

He then recommended that

a program of professional education which would meet these criteria might include courses in the principles of junior college education; educational psychology; growth and development characteristics of junior college students; curriculum materials and techniques; and student teaching in a junior college (p. 369).

Stone and the Committee on Accreditation of the California State Board of Education seem to have made essentially the same point made by Dolan; they acknowledge that many teachers in the academic area in the community college are professionally trained as teachers, but, like

Dolan, they believed that additional professional preparation, oriented specifically towards the needs of the community college, is necessary. Additionally, Stone seemed to be suggesting that, for those academics lacking any form of professional preparation, the program he outlined should be considered a minimum requirement for teaching in the community college.

Except for its focus on the community college, Stone's program resembles that associated with preparation for teaching at the high school level: (1) educational psychology, (2) curriculum methods and materials, (3) principles of education, (4) human growth and development, and (5) student teaching. Presumably, those already trained as high school teachers would not be required to repeat these courses, or at least not all of them. Implicit in Stone's proposal seems to be the assumption that professionally trained teachers, whether trained for the high school or community college, will tend to perform better as teachers than those not so trained. Thus, relying primarily upon survey data, and making no mention of systematic research dealing directly with teacher performance differentials, Stone repeated essentially the same argument advanced by others cited above--professionally prepared community college academic instructors are more effective teachers than those lacking such backgrounds.

Thornton (1960), in The Community Junior College, after reviewing literature relating to the backgrounds and training needs of community college instructors, recommended a program for teachers of academic subjects similar to that proposed by Stone:

1. A master's degree in a subject field.
2. A teaching minor, amounting to approximately one-fifth of the student's total college credit in a field related to the master's degree major field.
3. Courses in professional education to equal about one semester's total, including
 - a. Educational psychology--junior college student characteristics, principles of learning, guidance, and counseling.
 - b. A course in history, purposes, status, and problems of the junior college.
 - c. Methods and techniques of teaching in the junior college, including evaluation.
 - d. Supervised teaching, or internship, in a junior college (pp. 142-143).

It would seem reasonable to assume that Thornton, like Stone, is here describing what he considered to be the professional preparation needs of those coming directly from traditional academic backgrounds; it seems doubtful that he would require professionally-trained former high school teachers to undergo all of the training he advocates for those without professional backgrounds. More important, however, is the fact that Thornton's program proposal is virtually the same as Stone's and Dolan's; all, except for the course-work relating to the history, philosophy, and

organization of the community college, and their special emphasis upon the community college overall, are essentially the same as professional program requirements for high school teachers. Thus it is unlikely that courses relating to educational psychology, methods and materials, practice teaching (presuming the emphasis here to be on applications of methods and techniques of instruction), tests and measurements, and guidance and counseling, would differ substantially whether focused on the high school or community college level.

Donnelley's recommendations, based upon his survey of 70 community college teachers in Michigan, were similar to those already described above: community college teachers in academic areas should possess a minimum of a master's degree and should have a professional education background in educational psychology, tests and measurements, practice teaching, and guidance and counseling (1961, p. 139).

In a survey of 64 public community college administrators in the 11 western states, Loomis (1965), in his study dealing with the formal preparation of academic instructors in the community college, provided a list of six broadly-defined professional education areas, asking those surveyed "to evaluate each area as being of 'much value,' 'some value,' or 'little or no value.'" They were then asked

whether they recommended the course area for all instructors as 'preservice,' or 'in-service' or 'no'" (p. 82).

Listed in the order of frequency of those judging the course of "much value" the following percentages give some indication of the value administrators attach to these courses: philosophy of community college, 73.5 percent; internship, 70.3 percent; teaching processes, 57.8 percent; psychology of community college student, 50 percent; evaluation of the community college student, 48.4 percent, and; curriculum planning, 37.5 percent. By combining the columns "much value" and "some value". . . the percentages increase to 96.9, 95.3, 87.5, 89.0, and 85.5 percent respectively (p. 82).

Regarding the question of whether such training should be required of instructors, his respondents were

less positive as to whether "all instructors" should be exposed to these courses as preservice or in-service instruction. The "philosophy and functions of community college" course was recommended as "preservice" instruction by 51.5 percent and another 26.6 percent thought it should be "in-service." Only 6.3 percent said "no." Some 15.6 percent did not answer. The 39.1 percent recommending the "internship or field experience" course as "preservice" or even the 15.6 percent saying it should be "in-service," is inconsistent with the rating of confidence it was given as a course area. Those saying "no" amounted to 17.2 percent and 28.1 percent did not reply to this item.

The curriculum planning course, which was rated lowest of the six course areas, was recommended as "preservice" instruction by only 15.6 percent. However, 54.7 percent recommend it as an "in-service" course (p. 83).

What is clear from Loomis's survey is that his respondents were strongly in favor of what might be termed

a fairly typical program of professional education training for community college instructors, either on a preservice or in-service basis, or some combination of both. It is largely on this basis that Loomis concluded that there is a need for professional preparation of academic instructors in the community college (pp. 140-150).

Reporting the results of a survey of State Directors of Certification regarding certification requirements for community college instructors, Burkhart (1967), noted that the greatest demand for community college instructors was likely to continue to be in those seventeen states which require certification or specify requirements for employment but issue no certification.

These states generally require a master's degree as an academic minimum for certification. The trend seems to be toward subject matter degrees, although sometimes this is not clear in the state certification manuals. Also required are some professional education courses, such as educational philosophy and psychology, learning theory, and specific course work in the junior college. Actual or practice teaching experience is also a frequently mentioned requirement (p. 638).

Burkhart based his judgment regarding demand on the fact that these seventeen states, as of 1965-66, enrolled 72 percent of all community college students and employed 63 percent of all community college teaching faculty; and he concluded by recommending that community college instructors undergo professional training similar to that advocated by those discussed above (p. 638).

Gordon and Whitefield (1967), reported the recommendations for professional preparation of community college instructors in a workshop conducted by Eastern Washington State College. Twenty-nine community college instructors from schools in the Pacific Northwest attended, and resource persons and workshop leaders were drawn from among community college administrators and community college curriculum specialists. The group concluded that, in addition to a master's degree, community college instructors needed to be professionally prepared in the areas of: (1) instructional materials and methods, including the use of various media, (2) learning processes and problems, and (3) the characteristics of a heterogeneous student population (p. 38).

Similar conclusions were reached by LaGrandeur in his 1968 dissertation dealing with the preparation of community college instructors in Oregon. Relying on survey data collected in Oregon community colleges, he concluded that, for those instructors without prior teacher training, a program of professional preparation should include: (1) tests and measurements, (2) psychology of learning, (3) teaching methods at the college level, and (4) student teaching (pp. 94-95). And, consistent with results reported earlier in other states and regions, cited above, his survey indicated that slightly over 60 percent of the academic university-transfer instructors teaching in Oregon community

colleges had been recruited from high school teaching positions (p. 110).

In an effort to determine the preservice and inservice needs of Oregon community college instructors, and to secure data relevant to planning a program for the preparation of community college teachers and administrators, the School of Education at Oregon State University surveyed and interviewed presidents and deans of instruction in the Oregon community colleges. Others interviewed "included a sampling of [d]eans and [a]ssociate [d]eans, [d]irectors, [c]oordinators, community college instructors and students" (Oregon State University, 1969, p. 2). Recommendations for the preparation of university-transfer instructors (though not limited to them), included

a command of a range of instructional techniques and familiarity with instructional media; the ability to communicate effectively with students and colleagues; the skill to cope with learning problems of students with widely varying educational capabilities and interests who frequently are in the same classes; an understanding of learning and teaching processes and the ability to motivate students; the technique of individual and group guidance suitable for use in a community college (pp. 6-7).

In the same place, it was recommended that prospective community college teachers serve supervised internships under the direction of well-qualified community college teachers.

Of those administrators and instructors surveyed and interviewed for this study, 49 percent of the administrative personnel had been professionally trained for working at either the elementary or secondary school level, and 51 percent of the transfer instructors had been trained as elementary or secondary school teachers (p. 28).

The procedure employed in this study, chiefly that of collecting the opinions of administrators and instructors, is essentially the same as that utilized in most of the studies discussed above. Considering the fact that approximately 50 percent of those from whom opinions were solicited had prior experience or training at secondary or elementary school levels, it would be reasonable to expect that the views of many of these might reflect subjective biases favoring professional training similar to their own as well as informed professional judgments. Further, just as in the other studies cited, there were no references to systematic investigations which might provide support for the assumption that professional training makes a difference in the actual classroom performance of community college instructors teaching in the transfer area.

More recently, similar conclusions derived from similar data were reached by Kovach (1973), who, in a survey of 29 public community colleges in Michigan, asked chief administrative officers, including business and student personnel administrators, to indicate which degrees and

what kinds of training they considered necessary for community college teachers in the university transfer area: approximately 62 percent of those responding believed that instructors in this area should possess at least a master's degree plus specialized professional training in education; only 36.1 percent felt that subject-matter preparation alone, at the master's level or above, was adequate (p. 31). Finally, echoing Kovach and others cited above, Bleyer (1979), in considering preparation programs for community college teachers, agreed that professional preparation should include training in: (1) community college philosophy, purpose, and history, (2) supervised teacher-training, (3) teaching methods, and (4) educational psychology (p. 49).

Most authorities writing on the subject of preparation for community college instructors in the university-transfer area also argued that a subject-matter master's degree is an essential minimum. Stone, for example, recommended that a master of arts degree be required, plus additional preparation in professional education (1958, p. 369). Others writing more recently reach similar conclusions (Burkhart, 1967, p. 638; Donnelley, 1961, p. 139; Kovach, 1973, p. 31; Thornton, 1966, pp. 142-143).

A few authorities, however, advocated graduate programs for community college instructors similar to those for public school teachers, in which academic and

professional preparation are combined (Koos, 1948, p. 344; Dolan, 1952, p. 355). More recently, in the study cited earlier, investigators at Oregon State University, commenting on the preparation of university transfer instructors, recommended a graduate program leading to the master's degree that is "a judicious balance between mastery of subject matter and professional teacher training" (Oregon State University, 1969, p. 6).

Although there is some disagreement, there does seem to be a tendency to view a subject-matter master's degree as a minimum requirement for teaching in the university-transfer area.

Using available research, it is presently not possible to determine what proportion of university-transfer instructors actually possess subject-matter graduate degrees and which have their degrees in education. Studies reporting graduate degrees of community college faculty typically make no distinction between these types of master's degrees but simply report them as an aggregate (Dahl, 1977, pp. 97-98; Graybeal, 1970, p. 10; Medsker, 1960, p. 172; Medsker & Tillery, 1971, p. 88; Palinchak, 1973, p. 227). The Oregon State University study, discussed above, is indicative of the ambiguity of the data reported regarding graduate preparation of faculty in community colleges. In a table listing the degrees held by Oregon community college professional staff, it classifies all degrees as being

"academic" and notes that 91 percent of Oregon community college professional staff have master's degrees (Oregon State University, 1969, p. 26). If the academic master's degree is defined in strict subject-matter terms, this would mean that 91 percent of the professional staffs in Oregon community colleges have been admitted to and completed graduate programs which are under the exclusive control and supervision (within the context of graduate school controlling bodies) of the schools or departments associated with those academic disciplines and have earned the equivalent of one or more years of graduate credit entirely in those disciplines (Livesey & Doughty, 1975). Considering the substantial numbers of community college faculty recruited directly from the public schools, many of whom have completed master's degrees to fulfill certification requirements which normally require graduate work in both professional education and traditional academic disciplines (Woellner, 1978), this seems doubtful; it is more likely that the Oregon State University survey and the others cited above define the concept of academic degree in a broadly generic sense to mean any graduate degree earned in a four-year college or university. That this is probably the case is indicated by the results of a recent interview with the Dean of Transfer Programs at one of the community colleges included in this study. The Dean stated that, while all of the instructors in the university-transfer

program at the College have what the institution considers adequate preparation in their subject-matter fields, 50 percent or more of them had been awarded their master's degrees by schools or departments of education rather than by schools or departments associated with purely academic, or subject-matter disciplines (Plummer, 1980).

While the subject-matter requirements for academic master's degrees typically specify one or more years of graduate credit in the discipline (Livesey & Doughty, 1975), those for master's degrees in education leading to subject-matter endorsements in teaching areas are highly variable (Woellner, 1978). An examination of a number of college and university catalogs from Oregon, Washington, and California illustrates this variability.

The catalog issued by Washington State University (1978) states that students in master's degree programs in education must complete 30 semester credits in courses at the undergraduate and graduate levels in both education and subject-matter areas. It does not specify the relative amounts or levels at which credits in these areas are to be earned; programs appear to be designed for students on an individual basis depending upon their undergraduate backgrounds (p. 139). It should perhaps be here noted that 30 semester hours of credit and 45 quarter hours of credit both translate to one full year of academic study.

The Oregon State University catalog (1979, p. 138), describes several programs leading to the Ed. M. in secondary education. For both the English and the Language Arts-Social Studies options, one full year of graduate study, 45 quarter hours, is required, with 24 hours specified in education and 21 in the subject-matter areas. The Science Education option requires 45 quarter hours of study with a minimum of 30 credits to be earned in subject-matter areas and a minimum of nine credit hours of the remaining 15 to be earned in science education.

The University of Southern California School of Education Bulletin (1978, pp. 86-87), lists what is identified as an advanced master's degree in education designed for teachers of academic subjects which requires a minimum of 24 semester hours of graduate study, 12 of which must be in education and 12 in the subject area.

The Portland State University Bulletin (1979, p. 149), states that the master's degree in education, for those seeking a concentration in a subject-matter area, requires graduate credit in the subject area which, when combined with previous undergraduate preparation in that subject, equals 30-45 quarter hours of credit in total. A minimum of nine quarter hours of graduate credit must be earned in the academic area. A minimum of 24 quarter hours of graduate credit must be earned in professional education courses. In addition, the University offers a master of

arts or master of science degree in teaching which requires a minimum of 30 quarter hours of graduate credit in an academic area and nine hours minimum in professional education.

The University of Oregon Bulletin (1978, p. 250), states that the master's degree in education requires a total of 45 quarter hours of graduate credit, 30 of which must be in education, the balance, 15, in an academic supporting area.

The Southern Oregon State College Catalog (1979, pp. 193-195), specifies that the master's degree in education for subject-matter teachers requires a minimum of 21 quarter hours of credit in education and a minimum of 21 hours in the subject field, with a total of 45 hours required. The master's degree in general studies resembles the master's degree in teaching offered by Portland State University, requiring a total of 45 quarter hours, 30 of which must be in the subject-matter area, with a minimum of nine hours in education required.

Oregon College of Education (1978), describes two master's degree programs in its catalog (p. 74). The master's degree in education for a teaching area requires a professional education core of a minimum of 12 quarter hours of credit and a minimum of 21-27 hours of credit in an academic area, with a total of 45 hours required for the degree. The master of arts or science in teaching requires 30

quarter hours of credit in the subject area, 24 of which must be earned as graduate credit, and nine quarter hours of graduate credit in education. A total of 45 hours are required for the degree.

It can probably be safely assumed that the subject-matter requirements of these master's degree programs are representative of those offered by most other schools and departments of education. And, because it would seem that many of those teaching in the university-transfer area possess master's degrees in education, it is likely that their graduate-level preparation in subject-matter areas is, for the most part, not the precise equivalent of that of their colleagues with strictly academic master's degrees: the programs in education are quite variable, requiring from nine to 30 or more quarter hours or the equivalent, of graduate credit in an academic discipline, the average being between 21 and 24, while the degrees in academic disciplines require approximately twice as many units, or one full year, of graduate study in the subject field. Therefore, considerable numbers of instructors in the university-transfer area probably do not possess the equivalent of a subject-matter master's degree which many authorities on the preparation of community college teachers believe should be a minimum requirement for teaching in this area.

The major assumption which appears to provide the basis for the views of those who argue that possession

of the subject-matter master's degree should be the minimum prerequisite for teaching university-transfer courses is that the satisfactory teaching of lower-division university level subjects requires the kind of academic and intellectual sophistication presumably obtained by earning a master's degree in the disciplines being taught. In more pragmatic terms, this would appear to mean that if community college administrators were to insist upon the subject-matter master's degree for those teaching transfer courses, they could be reasonably confident (though of course not certain), that instructors are academically competent.

That the amount of academic or subject-matter preparation of community college instructors is considered important by some community college administrators as an indicator of the quality of instructional performance is suggested by the results of a survey conducted by Birnbaum (1966, pp. 34-37), in which he asked administrators in 27 New York community colleges to rank those factors they considered important in evaluations of instructional staff in the transfer area. The two top-ranked factors in administrative ratings were: (1) teaching performance and effectiveness and (2) amount of academic preparation.

There is also some evidence which suggests that students consider instructor knowledge of the subject area an important element in their evaluations of instructional performance. In surveys asking students to identify those

attributes they consider essential to good teaching, they consistently report that thorough mastery of the subject-matter is one of the most important attributes of a good teacher (Bousfield, 1940; Crawford & Bradshaw, 1968; Musella & Rusch, 1968).

However, in studies involving four-year schools, the research is somewhat mixed with respect to the relationship between student ratings and the academic backgrounds or rank of instructors, experience having been controlled. Gage (1961), for example, found that both associate and full professors were rated higher than either instructors or assistant professors. Similarly, Downie (1952), reported that teachers with the two highest degrees (master's degrees or doctorates), were rated as having: (1) better organized courses, (2) more effective presentations, and (3) gave more appropriate assignments than did those instructors with only bachelor's degrees. Aleamoni and Yimer, however, found no relationship between student ratings and academic rank of instructors (1973). Centra, in his research on the SIR instrument, also found that students did not rate differently the instruction provided by the various academic ranks, from instructor through full professor (1976a, p. 36). Finally, in a study of community college instructors, McCarberry (1970), found no correlation between amount of graduate preparation in subject areas and student ratings. However, McCarberry did not distinguish among students and

faculty with respect to curriculum or program areas, which would seem to render his findings somewhat ambiguous. This study is discussed in greater detail in the next section of this chapter.

The results of these various investigations, despite the contradictory results reported, suggest that the amount of graduate-level preparation of instructors in subject-matter areas may be a factor in student ratings of instructional performance. The contradictory results of studies dealing with the relationship between ratings and academic rank may be the consequence of erroneously assuming that academic ranks reflect a dimension of academic competence relevant to students. Committees on promotion and tenure, which normally help determine academic rankings, are customarily concerned with a variety of factors relating to academic and instructional accomplishment and expertise. Many of these, as ultimately expressed in academic ranks, may be of no concern to students whose interests are more narrowly focused on subject-matter knowledge at what is probably a more basic level. Therefore, because most of those teaching in four-year institutions have similar formal academic backgrounds (doctorates), regardless of rank, one might expect conflicting results from research dealing with the relationship between ratings and ranks.

Finally, it should be noted that the undergraduate preparation of community college instructors in subject-

matter areas is probably not a relevant factor in student ratings, because the amount of such preparation for both education and academic majors at the undergraduate level is essentially the same. In examining the college and university catalogs discussed above, it was found that academic area requirements for undergraduates, whether secondary-education or subject-matter majors, were nearly identical. At both the University of Southern California and the University of Oregon, for example, undergraduates in secondary education must complete the same academic programs as students majoring in the disciplines. These undergraduate subject-matter requirements for education majors are also relatively uniform across the nation (Woellner, 1978). Academic-area requirements for elementary education majors are considerably lower than for secondary majors, and such differences in undergraduate backgrounds might ultimately be reflected in student ratings at the community college level. However, as noted in some of the surveys discussed above, relatively few elementary teachers become transfer-area instructors in the community college (barely 3 percent of those in Oregon community colleges, according to the Oregon State University study cited above: Pre-service and in-service education for community college personnel in Oregon community colleges, p. 28). Therefore, since their undergraduate backgrounds differ markedly from those of both secondary education and academic-area majors, and because

they comprise a very small percentage of those teaching in the transfer area, they were excluded from consideration in this study.

Summary of Formal Preparation and Training Needs

Numerous authorities, whose research and writing spans a period of nearly four decades (e.g., the 1940's to the 1970's), have argued that community college instructors should be professionally trained as teachers. Most recommend that this training parallel that required of high school teachers, except that for those without prior teacher training, courses should be oriented towards teaching at the community college level. Recommended courses and training include the areas of: (1) educational psychology, (2) educational tests and measurements, (3) supervised practice-teaching, (4) community college philosophy, history, and functions, (5) methods and materials of teaching, including audio-visual aids, and (6) guidance and counseling.

Virtually all of the research data which provided the basis for these recommendations are derived from surveys and interviews of community college administrators and faculty, approximately 50 percent or more of whom were themselves professionally trained teachers. Therefore, because of the education backgrounds of substantial numbers of those surveyed, and in the absence of any references in these studies to systematic empirical investigations

comparing the actual classroom performance of professionally trained community college teachers and those with strictly academic backgrounds, it is suggested that the data collected may reflect to some degree the subjective biases of those surveyed, as well as representing objective professional opinion.

In the studies cited above, it would seem that the assumption of the superiority of what are here called "educationist" teachers derives its authority primarily from two sources. The first is an appeal to authority, which argues that community college administrators, teachers, and university-based specialists in community college curriculum and instruction are, by virtue of their experience and knowledge, capable of making authoritative judgments regarding the truth of such a proposition. The second consists of a priori or intuitive arguments, which take the form of assertions regarding the self-evident truth or validity of the proposition (Kerlinger, 1973, pp. 5-6). Such arguments are often both reasonable and compelling, and certainly the judgments of knowledgeable professionals in community college education must be accorded considerable weight. However, the presumed efficacy of professional training for community college teachers, as presented in the studies cited thus far, remains at best only a strongly persuasive argument unsupported by direct evidence.

With respect to the question of graduate-level, subject-matter knowledge and preparation of community college instructors, the literature is somewhat mixed. Many authorities writing on the topic appear to consider possession of the equivalent of a subject-matter master's degree an essential prerequisite for teaching at the community college level. This view is reinforced by administrators and students who believe that the amount of subject-matter preparation attained by an instructor and his or her knowledge of the subject are important indicators of satisfactory instructional performance.

Formal research dealing with the relationship between student ratings and the academic backgrounds of instructors has yielded conflicting results, with some studies reporting a relationship, others reporting none. These findings, plus the fact that most such studies have focused on academic rank rather than formal graduate-level preparation, suggest that the issue has neither been adequately addressed nor satisfactorily resolved. And, as there appears to be considerable variability among community college instructors in terms of total amount of graduate-level, subject-matter preparation, particularly between educationist and academic instructors as identified in this study, testing the hypothesis that there is a relationship between student ratings and graduate preparation of instructors would seem warranted.

Evaluation of Community
College Instructors

Recently, Potter (1978) reported the results of research dealing with essentially the same basic problem as that addressed by this study.

The major hypothesis was that there would be no significant difference in the performance ratings among groups of instructors with varying years of teaching experience or with varying educational backgrounds evidencing either teacher preparation or no preparation to teach, as measured by each of the subscales of the Illinois Course Evaluation Questionnaire (p. 82).

Instructors included in the study were drawn from the humanities, social sciences, natural sciences, and mathematics teaching areas at several community colleges in Arkansas, Mississippi, and Tennessee. The only selection criteria employed in the research were those of training, experience, and teaching areas. Potter found no significant differences in ratings assigned professionally-trained and non-trained community college instructors. However, there are several factors, apparently not considered by Potter, which not only make his results difficult to interpret, but may possibly have contaminated his data as well.

First, he did not stratify his student sample in terms of program area--whether they were university-transfer or vocational and occupational students; normally, these two groups of students do not take the same courses in the areas

included in his study, vocational and occupational students usually being enrolled in general education courses which are specifically designed for them in these areas. This makes it somewhat difficult to interpret Potter's results, because vocational and university transfer students appear to differ on a number of important dimensions, such as academic aptitude, attitudes, motivation, and socioeconomic status, any or all of which differences might differentially affect the amount of variance in student ratings of particular instructors when compared with ratings assigned these instructors by transfer students.

With respect to differences in socioeconomic status, Karabel's survey (1972) indicated that,

compared with students in transfer programs, vocational students are markedly lower in family income, father's education, and father's occupation. While almost half of community college students in the transfer curriculum are from white-collar families, only one-fourth of the students in vocational programs are from such backgrounds. Students enrolled in technical programs fall in between vocational and transfer students along various measures of socioeconomic status. Black students show themselves to be considerably more likely than white students to enroll in community college vocational programs (pp. 540-541).

Similar conclusions were reached earlier by Anthony (1964), in his doctoral dissertation dealing with the subject.

Other research also indicates that college transfer and vocational students differ significantly in terms of academic aptitude, motivation, and interest, particularly

when viewed in relation to the subject areas included in Potter's design (Fenske, 1969; Steward, 1966). Anthony's study also indicated that transfer students scored higher on academic aptitude tests. All of these factors, including socioeconomic status, may account in part for the fact that many students in community college vocational programs appear to resent having to take courses in the general education area, which would include those subjects identified in Potter's research (Weigman, 1969). Thus, ratings given instructors by vocational students in their classes may have been differentially affected by student attitudes, making these ratings incompatible, or at least inconsistent, with those assigned the same instructors by college transfer students. Therefore, combining ratings from both groups without first determining whether such differences might affect the variance of ratings could have contaminated the results of Potter's study.

These differences between college transfer and vocational students may also relate to the issue of content differences. Kulik and Kulik (1974) noted that content differences (the same instructor teaching two different courses), may account for a small but significant amount of the variance in student ratings (p. 53). This is a relatively minor weakness of student rating instruments when student abilities, aptitudes, and motivation are held fairly

constant and when general content levels and orientations of courses are broadly comparable. But in ratings given individual instructors, the amount of variance attributable to student perception of content might increase substantially if instructors taught different courses at different levels to groups of students who differ in important ways. Unfortunately, at present there appears to be no research dealing with this question.

Finally, Potter did not indicate which, if any, of the instructors included in his study were employed part-time. This could be an important omission, as full-time and part-time instructors appear to differ on a number of factors relating directly to instruction, including teaching methods, the use of instructional resources, evaluation procedures and assignments, and types of interactions with students (Friedlander, 1979, pp. 68-69). If substantial numbers of part-time instructors were included in either of Potter's professional background categories, and if students rated the performance of part-time instructors differently from the way they rated full-time instructors, the data in Potter's research may also be confounded by this uncontrolled variable.

McCarberry's study (1970), mentioned above, though not concerned with formal teacher training, did examine the relationship between graduate credit in education and student ratings on the Purdue Rating Scale for Instruction,

an instrument similar in many respects to SIR, used in this study, and the Illinois Course Evaluation Questionnaire employed by Potter. McCarberry used a rank order correlation statistic (ρ) and found no significant correlation between student ratings and graduate training in education. While his results seem to suggest that there is no relationship between the professional education backgrounds of instructors and student ratings, they are far from conclusive. Since his only concern was with graduate training in education, it is not possible to determine from his data which if any of the teachers included in his study had completed teacher preparation programs at the undergraduate level--and most community college teachers coming from public school backgrounds receive the bulk of their professional preparation, including supervised student teaching, at the undergraduate level (Woellner, 1978). Thus, formal and comprehensive teacher training was not an identifiable variable in his study. His sample, therefore, apparently included an undifferentiated group of instructors, some of whom may have completed teacher training programs at either the undergraduate or graduate levels, others with academic undergraduate backgrounds who had completed graduate degrees in education, and still others with undergraduate and graduate degrees in subject-matter areas who had taken some additional graduate work in education. Further, he did not identify the kinds of graduate courses in education taken by

those included in his sample but simply ranked them in terms of total semester units of graduate credit. It is uncertain, therefore, which if any of the courses included in his rankings were of the type commonly associated with teacher training per se, such as methods and materials, educational psychology, educational tests and measurements, and curriculum construction--or whether they were more general in nature, such as philosophy of education, educational administration, or history of education. Because courses oriented specifically towards instructional processes and procedures might reasonably be expected to have the greatest direct impact on classroom performance, the ambiguity inherent in McCarberry's data would seem to limit the generalizability of his results. Finally, McCarberry, like Potter, did not distinguish among occupational and transfer students, teachers, and curricula. Because of this, as was noted in the discussion of Potter's research, his findings are somewhat difficult to interpret, because some of these unexamined variables may have affected his results.

Research on the Student Instructional Report (SIR), the instrument used in the present study, has indicated that teachers with fewer than three years of teaching experience tended to be rated lowest by students, while teachers with between three and twelve years of experience received the highest mean ratings. It was further concluded that a

significant decline in ratings could be expected for teachers with more than 20 years of experience (Centra, 1976, p. 38). These results are essentially consistent with those reported by Elliott (1950, p. 19), who found that teachers with the least experience tended to be rated lowest. However, Guthrie (1954) did not find a significant relationship between teaching experience and student ratings of teaching effectiveness. These conflicting results were obtained from populations of students and instructors in four-year colleges and universities, and no effort was made to differentiate instructors on the basis of whether or not they had been professionally trained as teachers. However, inconsistent results were also reported for populations of community college instructors and students.

The studies of McCarberry (1970) and Potter (1978), cited above, found negative correlation coefficients between experience and ratings, with instructors with the least experience receiving the highest mean ratings. Moreover, Potter (p. 83) found no significant interaction between professional training and experience. Conflicting results, however, were obtained by Walker (1969), who reported that community college students tended to rate their more experienced instructors highest.

The major difficulties associated with interpreting the results of the McCarberry and Potter studies have already been examined, and these problems apply equally to

their results regarding the relationship between experience and ratings. Further, neither of these studies nor Walker's address a dimension of teaching experience which could have influenced their findings. They did not identify the levels of teaching experience of the instructors included in their samples. It may be, for example, that the teaching experience of instructors coming directly to the community college from positions in four-year institutions affects their teaching performance in a manner different from that of the experience of faculty who have taught only in public schools, community colleges, or some combination of both.

Summary of Evaluation of
Community College
Instructors

A few studies have been conducted dealing with the relationship between student ratings and the professional education backgrounds of community college instructors. In Potter's study, failure to stratify the sample of students in terms of program area, whether university-transfer or occupational, and ignoring the possible differences between part-time and full-time instructors, would seem to render his results somewhat inconclusive, because these factors may have influenced his results. The McCarberry study, concerned only with total semester units of graduate credit in education, did not deal with the question of the relationship between student ratings and formal, systematic teacher training. Thus, while these studies reported finding no

relationship between professional education backgrounds of instructors and student ratings, their results appear to be sufficiently ambiguous and difficult to interpret as to preclude using them as a basis for concluding that formal teacher preparation for community college instructors in the university-transfer area is unnecessary.

Research on the question of the relationship between student ratings and length of teaching experience has produced conflicting results, with different investigators reporting positive, negative, and no correlations between experience and ratings. The contradictory results obtained in the community college studies, with Potter and McCarberry reporting negative correlations, and with Walker finding a positive correlation between length of teaching experience and student ratings, may have resulted from failure to distinguish students by program area, ignoring possible differences between part-time and full-time instructors, and overlooking qualitative differences in experiential background, viz., whether instructors had previously taught in four-year colleges or universities or whether their teaching experience was limited to public schools and community colleges.

Student Achievement and Student Ratings

Most of the research dealing with the relationship between student achievement and ratings of instruction has focused on in-class achievement or expected grade in the course. A number of such studies reported moderate and positive correlations between in-class achievement and student ratings (Brown, 1976; Russell & Bendig, 1953; Weaver, 1960). Still others reported no relationship between the two (Bendig 1953a; Garverick & Carter, 1962; Guthrie, 1954; Hildebrand, 1971). Occasionally a negative correlation is reported (Bendig, 1953b).

Costin, Greenough, and Menges (1971), in commenting on these contradictory results, observed that the positive correlations are typically quite low.

The positive findings that do occur might better be viewed as a partial function of the better achieving student's greater interest and motivation, rather than as a mere contamination of the validity of student ratings (p. 517).

Doyle (1975) is essentially in agreement with Costin, et al., in regarding the positive findings as relatively unimportant, but his explanation of the contradictory findings reported by various investigators is relevant to the purposes of this study. Assuming that the academic ability or aptitude of students tends for the most part to

be reflected ultimately in the grades they earn, he stated that

confronted with a class heterogeneous in ability, an instructor can gear the course to the quicker, average, or slower students. This choice will determine the relationship between ability and evaluations. For example, if the instructor directs his teaching to the brighter students, those students should be relatively more satisfied and the correlation between ability and ratings will be positive. Conversely, if the instructor teaches to the slower students, these students will be more satisfied--and the brighter ones less--and the correlation will be negative (1975, p. 74).

To this could be added the observation that if an instructor attends to the needs of students at all ability levels (as the best teachers presumably do), the predicted correlation will be zero.

Research conducted by Elliott to test this hypothesis tends to confirm Doyle's reasoning (Elliott, 1950, pp. 33-34). In this study, Elliott found that while there was no relationship between grades in the course and student ratings, student achievement in the course, when corrected for ability, was positively correlated with ratings (using a discrepancy score derived by subtracting predicted grade, estimated from student scores on an academic aptitude test, from grade obtained in the course). Thus some instructors were rated highest by low-achieving, low-ability students, and others were rated highest by high-ability, high-achieving students.

While this research indicates that the relationship between ratings and academic ability, as expressed by prior student achievement, may be important, it must be noted that Centra's research (1976a) on SIR found no correlation between student grade point average (GPA) and student ratings. (p. 28). However, the research dealing with this subject has all been conducted in four-year schools and no effort has been made to examine the relationships between prior student achievement and ratings in relation to such instructor characteristics as professional teacher training, experience, and subject-matter preparation.

Because, as noted above, community college student populations are considerably more heterogeneous in terms of academic ability than are those in four-year institutions, questions relating to these factors and the relationships between them are perhaps more serious than in four-year schools. Because community colleges commonly regard themselves as teaching institutions sensitive to the needs of their heterogeneous student clientele, the possibility that particular categories of instructors may be rated differently by students of varying levels of ability or achievement would almost certainly have serious implications for programs of preservice and in-service training and probably for policies relating to instructional assignments as well.

It seems fairly probable that substantial numbers of community college instructors in traditional academic areas

apparently would prefer not to teach low-ability students. Spickelmier (1973), for example, found in his survey of humanities, natural sciences, and social science faculties in Texas community colleges that

the attitude that "community college instructors should not have to focus their instruction at the level of the low ability student" is held by 40 to 50 percent of the participating faculties (p. 172).

Similar conclusions were drawn by Blocker, Plummer, and Richardson (1965), who divided community college faculty into two groups: (1) conservatives, who identify with the four-year college instructor and prefer teaching academically-oriented students, and (2) the liberals, who are motivated towards serving low-ability students (pp. 134-135).

Rouche and Pitman (1972) rendered a particularly harsh judgment when they said

the typical community-college faculty member is, like his colleague in the four-year college, an academic specialist. He derives his greatest satisfaction from transmitting the knowledge of his chosen discipline to able students. Consequently, he prefers to teach advanced and specialized courses. These courses afford him the opportunity to teach that which he knows best. Simply stated, some community college instructors want to teach students who are easy to teach--those who are "already motivated" (pp. 9-10).

Whether or not Rouche's and Pitman's fulminations are justified is somewhat questionable, because it is evident that substantial numbers of community college

instructors have been trained primarily as teachers, not academic specialists (though by moving from the public school to the community college they may come to regard themselves as such). Further, no evidence was cited which might suggest that those teachers who do have subject-matter graduate degrees constituted the group holding these negative views of low-ability students. Neither this study nor the others cited above distinguish between community college instructors on the basis of professional education backgrounds, subject-matter preparation, or teaching experience. It may be, of course, that negative attitudes towards teaching low-ability students are distributed normally through most populations of community college faculty, but this is not clear from the research. Moreover, the fact that many community college instructors would prefer not to teach low-ability students is not particularly surprising; it would seem reasonable to expect that, given a choice, many teachers at any level would prefer working with academically able, highly-motivated students rather than with those at the other end of the academic spectrum. It does not, however, follow from this that such teachers are necessarily unwilling to or incapable of working effectively with low-ability students. If, therefore, instructional effectiveness is a primary concern in the community college, it would seem more useful to examine relationships among the qualifications and experience of instructors, student

achievement or ability, and student ratings to determine whether or not particular categories of instructors vary systematically on ratings assigned them by students of different achievement and ability levels.

It is recognized that student grade point average (GPA), which is used in this study to estimate academic ability, is not the precise equivalent of a score on a standardized test of academic ability, but merely an analogue. However, there is a considerable body of research dealing with the reliability and validity of standardized academic aptitude tests, such as the College Entrance Examination Board Scholastic Aptitude Test, the American College Testing Program Examination, the California Achievement Test, and the College Qualification Test, which indicates that measures of academic ability are positively correlated with subsequent college achievement as expressed by grade point average (Linden & Linden, 1968). This appears to be true for community college students as well as for those attending four-year colleges and universities (Hoyt & Munday, 1969).

Because students reported their GPAs on the SIR instrument at the time they completed their ratings, the question of the reliability of such self-reported GPAs is an important consideration. Research dealing specifically with this issue has found that self-reported and college-reported GPAs are very highly correlated. Richards and Lutz (1968),

for example, in a study involving a sample of approximately 6,500 college students, found correlation coefficients between self-reported and college-reported GPAs to be .84 for men and .87 for women. A similar study by Dunnette (1952) found correlation coefficients of .94 between the actual and reported grades of college seniors. Such strong relationships indicate that using self-reported GPAs as estimators of actual GPAs is a reliable and valid procedure.

Summary on Student Achievement and Student Ratings

While the research dealing with the relationship between student achievement and student ratings is somewhat contradictory, the modest and positive correlations which have been reported are not regarded as weakening the validity of student rating instruments.

There is some evidence which suggests that student ratings and academic ability, as the latter is reflected in prior student achievement as measured by GPA, may be related to the student ability level at which instructors aim their teaching. This possibility, coupled with the fact that the level at which instructors aim their teaching may be related in turn to instructor attributes such as teacher training background, amount of graduate-level subject-matter preparation, and length of teaching experience, suggests the

importance of considering in this study prior student achievement in relation to ratings and these instructor attributes.

Summary of Review of Literature

This chapter has consisted of a review of literature relevant to the major concerns of this study. In the first major section, which was devoted to an examination of the literature relating to the formal preparation and training needs of community college university-transfer instructors, it was concluded that numerous surveys indicate that many of those involved with the community college believe that instructors should be professionally prepared as teachers. No empirical studies, however, were utilized to provide support for the recommendation that community college instructors would be more effective as teachers if professionally trained. In addition, it was noted that while a number of authorities advocate possession of the equivalent of a subject-matter master's degree for those teaching in the university-transfer area, and that some college administrators and students believe that the amount of subject-matter preparation is an important indicator of satisfactory instructor performance, there is little or no evidence to support these views.

In the second section, studies dealing with the evaluation of community college instructors were reviewed.

It was concluded that the results of these investigations are sufficiently ambiguous and difficult to interpret as to make them an inadequate basis for concluding that professional preparation of community college instructors is unnecessary. At the same time, they provide an insufficient basis for determining the nature of the relationship between length of teaching experience and student ratings of instructional performance.

In the final section, it was observed that research suggests that there may be a relationship between prior student achievement and student ratings, and that instructor attributes, such as professional training, amount of graduate-level subject-matter preparation, and length of teaching experience, may affect this relationship.

It seems reasonable to conclude that there is a need for additional research dealing with the question of relationships between student ratings and (1) professional training of community college instructors, (2) amount of subject-matter preparation of instructors, (3) length of teaching experience of instructors, and (4) prior student achievement.

As the insufficiency and ambiguity of much of the evidence pertaining to relationships among student ratings, student GPA, and the several instructor characteristics discussed above makes it difficult to assert with any degree of confidence the precise nature of possible relationships

among these variables, it is formally assumed that no such relationships exist. All hypotheses tested in this study are, therefore, stated in null terms. The hypotheses were:

1. There is no relationship between student ratings of instruction and professional teacher-training backgrounds of instructors in the university transfer area.
2. There is no relationship between student ratings of instruction and the amount of teaching experience of instructors in the university transfer area.
3. There is no relationship between student ratings of instruction and the amount of graduate-level, subject-matter preparation of instructors in the university transfer area.
4. There is no relationship between prior college achievement, as reflected in student GPA, of students and their ratings of instructors in the university transfer area.

Chapter 3

INSTRUMENTATION

The Student Instructional Report

The SIR instrument was chosen for this study from among several published rating instruments for which there seems to be adequate reliability and validity research. It is also the only one widely used in the community college on which there is published comparative data for community colleges (Educational Testing Service, 1977). Because of this, it was possible to compare data collected in this study with that collected nationally.

Initial research and development of SIR was undertaken in 1970 by the Educational Testing Service in response to a request by the Associated Student Government of Northwestern University in Illinois for a questionnaire which would provide student ratings of courses and instruction. Educational Testing Service subsequently began development of an instrument that would: (1) generate data useful to instructors in planning revisions in courses and instructional methods, and (2) provide students with information useful to them in selecting courses (Centra, 1972, p. 5).

The preliminary form of SIR (see Appendix A) was constructed by drawing upon extensive research which has been done in the area of student evaluation of instruction.

The preliminary form. . . contained 112 items in five groups: Course Organization and Content, Instructor-Student Relations, Communications, Assignments and Evaluation, and Student's Involvement in the course. . . .

The preliminary form had three additional groups of items dealing with lectures, 14 with discussions-seminars, and 8 with laboratories.

Finally, the form had several items requesting information about each student, such as class level, cumulative grade-point average, and anticipated grade in the course. These student-characteristic items were included for research purposes and to give the instructor a profile of his class (Centra, p. 6).

This preliminary form included descriptive as well as rating-type items; the former designed to provide a profile of an instructor's teaching style and the latter requiring student value judgments regarding overall quality of instructional performance (pp. 6-7).

The procedure used in testing the preliminary form involved having 37 instructors at Northwestern administer the instrument in one of their classes.

The remaining 700 faculty members received copies and were asked to indicate their opinions of student ratings in general and of the items on the form in particular; slightly more than 100 responded. The responses of instructors were analyzed to help revise the preliminary form (p. 7).

In addition, a factor-analysis of student responses was performed which "essentially reproduced the findings of earlier research" (p. 8).

The five factors were, in order of magnitude: Instructor-student Interaction,

Examinations, Course Organization (or Instructor Efficiency), Student Interest (in the course), and Course Challenge (to students). The items dealing with instructor communication did not emerge as a separate factor, but were part of the instructor-student dimension (p. 8).

The results of this analysis were then used to reduce the total number of items in the preliminary form. "An examination of the factor loadings (correlations of factors with items) and correlations between items made it possible to eliminate those items that overlapped significantly" (p. 8).

By eliminating those items which were found to overlap significantly and discarding those which faculty respondents considered not useful, the revision of the preliminary form resulted in an instrument containing 40 items plus a supplementary section in which the instructor, department, or institution could specify ten additional questions of their own choice and design (see Appendix B).

In 1971, this revised form was tested in 75 classes at Northwestern University. Analysis of these completed questionnaires resulted in only a few minor revisions. "Item reliability (Cronbach's coefficient alpha) for each of the items in the revised form was above .80, which is similar to the values for several other student rating instruments" (p. 9).

The present SIR instrument, consisting of 39 machine scorable items, plus space for ten supplementary questions,

is the product of the two earlier revisions of the preliminary form. It is the instrument used in this study (see Appendix C).

Reliability of the
Student Instructional
Report Items

In an effort to secure estimates of the reliability of the SIR instrument, Centra employed two methods of analysis: (1) an analysis of variance model which provided an estimate of the amount of variance in responses within each class on each item as compared to the variance between classes, and (2) test-retest reliability estimate, which measured the stability of instructors' scores over a short period of time (1973, p. 9).

For his analysis of internal consistency, he selected 28 classes at random from each of which 15 students were randomly selected. Using the Spearman-Brown formula, estimated reliabilities for classes of different sizes were computed (p. 10). Results of this analysis are presented in Table 1 on the following page.

The reliability estimates for the SIR items, as noted in Table 1, were generally above .70 for 20 or more students in a class and slightly less for 15 or more students. These values would seem quite acceptable. For many of the items, 10 students in a class were enough to provide acceptable reliability estimates. Ratings based on only five students, however, produced acceptable reliability coefficients for very few of the SIR items (p. 10).

Table 1

Reliability of the Student Instructional Report Items

Item Number (SIR End-of-Semester Form)	Estimated reliability for the following number of individuals in each class					
	5	10	15	20	25	35
1	.39	.56	.66	.72	.76	.82
2	.37	.54	.64	.71	.75	.81
3	.50	.67	.75	.80	.83	.88
4	.49	.66	.74	.79	.83	.87
5	.56	.72	.80	.84	.87	.90
6	.50	.66	.75	.80	.83	.87
7	.47	.64	.72	.78	.81	.86
8	.69	.82	.87	.90	.92	.94
9	.39	.56	.66	.72	.76	.82
10	.37	.54	.64	.71	.75	.81
11	.50	.67	.75	.80	.83	.88
12	.49	.66	.74	.79	.83	.87
13	.56	.72	.80	.84	.87	.90
14	.50	.66	.75	.80	.83	.87
15	.47	.64	.72	.78	.81	.86
16	.69	.82	.87	.90	.92	.94
17	.71	.83	.88	.91	.93	.95
18	.57	.73	.80	.84	.87	.90
19	.52	.68	.76	.81	.84	.88
20	.58	.74	.81	.85	.88	.91
21	.31	.47	.57	.64	.69	.76
22	.45	.63	.71	.77	.81	.85
23	.57	.72	.80	.84	.87	.90
24	.28	.44	.54	.61	.66	.73
32	.66	.79	.85	.88	.91	.93
34	.59	.74	.81	.85	.88	.91
35	.58	.74	.81	.85	.87	.91
36	.59	.74	.81	.85	.88	.91
38	.55	.71	.79	.83	.86	.90
39	.65	.78	.85	.88	.90	.93

Note: From The student instructional report: comparisons with alumni ratings; item reliabilities; the factor structure (SIR Report No. 3). by J. A. Centra, 1973, p. 11. Copyright 1973 by Educational Testing Service. Reprinted by permission.

To secure an estimate of stability reliability by means of the test-retest method, Centra had 296 instructors administer 23 of the SIR items at mid-semester and then at the end of the semester in one of their classes. Mean responses for each item at mid-semester were correlated with mean responses at the end of the semester for the sample of instructors (p. 12). These data are presented in Table 2 of this report. Data presented were for two groups of instructors: (1) the feedback group, comprising those who were given a summary of mid-semester responses and (2) the no-feedback group, which did not receive summaries of student mid-semester responses.

Inspection of the data presented in Table 2 indicates that correlations were fairly high, most being near or above .70. And, as Centra observes, correlations were similar for each of the two groups of instructors (p. 12).

In view of the fact that the ratings were collected a half-semester apart, these correlations would suggest sufficient stability of the ratings over time. Quite possibly, the correlations would have been even higher for ratings collected one or two weeks apart (p. 12).

Centra's analysis of item reliabilities of the SIR instrument would indicate that it is appropriate for use in a study such as the present one.

Table 2
Midsemester-End of Semester Correlations
for Twenty-Three SIR Items

Item Number (mid-semester form)	Feedback Group 1 N = 137 teachers	No-Feedback Group 2 N = 159 teachers
1	.70	.77
2	.73	.75
3	.83	.80
4	.74	.71
5	.66	.72
6	.58	.68
7	.78	.76
8	.61	.68
9	.64	.69
10	.76	.65
11	.73	.75
12	.71	.72
13	.67	.67
14	.79	.79
15	.77	.74
16	.80	.69
17	.55	.73
18	.71	.69
19	.79	.72
20	.65	.60
21	.72	.64
22	.73	.67
23	.69	.71

Note: From The student instructional report: comparisons with alumni ratings; item reliabilities; the factor structure (SIR Report No. 3). by J. A. Centra, 1973, p. 13. Copyright 1973 by Educational Testing Service. Reprinted by permission.

Validity of the Student
Instructional Report

An important assumption underlying the use of instruments designed to elicit student ratings of instruction is that there is some relationship between such ratings and student achievement, the expectation being that students learn more in those classes taught by instructors who receive the highest ratings. In his examination of the relationship between student ratings of instructors and student achievement, Morsh (1956) found significant correlations between the two.

The chief results of the investigation were the findings that student gains can be reliably measured and that students' ratings of their instructors' teaching effectiveness, and supervisors' ratings of instructors' verbal facility are correlated significantly with student gains (p. 89).

Studies conducted by other investigators provide additional support for this view (Elliott, 1950; McKeachie, Lin & Mann, 1971).

Centra (1976b) noted that while a number of studies report moderate positive correlations between ratings and student achievement, the fact that students often were not assigned to classes on a random basis makes interpretation of results difficult.

Correlational evidence alone, however, is subject to varying interpretations. Although different teaching techniques or course characteristics as rated by students

may influence students to learn more, other explanations are possible. It could be argued, for example, that differences in student achievement are due not to teacher effects but to differences in students uncontrolled by whatever pretest had been used. Differences in final exam scores for students at a given pretest performance level may, as one possibility, be due to differences in student motivation rather than in teacher effectiveness. Highly motivated students might not only do better than predicted but may seek out teachers with good reputations and rate them higher regardless of teaching performance.

Another possibility is that a class with high achieving students might inspire a teacher to put more into the course, so that student achievement would influence teacher behavior rather than the reverse (p. 2).

In an effort to avoid obtaining such ambiguous results, Centra designed a study using the SIR instrument which included for analysis first-year courses in which students were randomly assigned to sections and in which prior student achievement in the subjects had been statistically adjusted (1976b, p. 3).

In commenting on the results of his investigation, Centra noted that, because of the small number of sections for most courses, conclusions must be drawn cautiously; but

the pattern of correlations indicates that the examination scores were significantly related to several of the SIR variables. Ratings of overall teaching effectiveness and the value of the course to students, in spite of consisting of only a single item each (and hence a less reliable measure), were both fairly well correlated with achievement: 12 out of 24 product-moment and partial correlations were .58 or above. Ratings of course objectives and

organization, and of the quality of lectures, were also fairly well correlated with achievement: 14 out of the 24 correlations were .47 or above. Ratings of the teacher-student relationship, of the course examinations, and of student effort were not strongly correlated with achievement: the median correlation was about .30. The weakest or most inconsistent correlations with achievement were for ratings of reading assignments and for course difficulty and workload (1976b, pp. 8-9).

Although the correlations reported in this study hardly constitute incisive evidence for the assumption that student ratings of instruction invariably reflect levels of student achievement, the overall pattern of correlations suggests that there is some moderately positive relationship between student achievement and several of the rating factors identified by SIR. These factors include: (1) global ratings of performance, (2) courses, (3) lectures, and (4) ratings of course objectives and organization. In addition, the work of other investigators in this area, cited above, lends support to the view that student ratings of instructors do have validity in the sense that they provide relatively accurate estimates of the quality of instructional performance as reflected ultimately in level of student achievement. Since, therefore, the object of the present study is to examine whether or not students perceive any differences in the quality of instruction provided by two different groups of community college transfer instructors, it should be possible to assume, with appropriate reservations, that any major differences reported relating

to at least the four factors identified above probably do reflect genuine qualitative differences in instructional performance, with important implications or consequences for student achievement. Similarly, if no major differences are reported, assumptions regarding the relative teaching effectiveness or abilities of the two groups studied would warrant re-examination. Any results obtained, therefore, will have valid, though admittedly limited, implications for present policies regarding the preservice training needs of community college instructors in the transfer area and staff development and in-service programs conducted by community colleges.

Factor Structure of
the Student Instruc-
tional Report

A factor analysis of the preliminary form of the SIR instrument, conducted by Centra at ETS, resulted in the identification of five factors: (1) Instructor-Student Interaction, (2) Examinations, (3) Course Organization (or instructor efficiency), (4) Student Interest (in the course), and (5) Course Challenge (to students). The original pool of 100 items was subsequently reduced to the 39 items in the final SIR form (1973, p. 15).

Using a sample of 9,700 students in 437 classes at five colleges, the final form of SIR was also factor analyzed. Six factors were identified, and both orthoganal

and oblique rotations were made, with a varimax solution used for the former and a promax solution for the latter. Table 3 on page 79 following, reproduces the varimax factor loadings, Table 4 on page 80 reproduces the promax loadings. Considerable similarity between the factor structures was noted, but because it was believed that the promax solution provided a better and simpler structure, interpretation of results using SIR is based upon the promax rotation. Table 5 on page 81 reproduces the promax six factor solution, indicating loadings for items associated with each factor (Centra, 1973, pp. 15-21).

Table 6 on page 82 illustrates the intercorrelations among the six rotated factors. These fairly high intercorrelations suggest a single underlying factor in student ratings of instructors, but the promax factors also isolate groups of items describing different facets of instruction. It is therefore believed that analysis of the results of an administration of SIR is most useful, in terms of teaching improvement, if ratings on each factor are examined (p. 18).

Table 3

Factor Analysis of Final Form of SIR:
Varimax Primary Factor Loadings

Item Numbers	1	2	3	4	5	6
1	27	63	15	19	14	05
2	24	61	12	14	14	04
3	22	52	41	11	12	12
4	51	26	06	06	04	09
5	47	26	18	12	24	11
6	-13	-05	-34	-03	00	-01
7	56	12	24	12	02	-02
8	62	29	13	12	16	14
9	52	20	11	14	16	17
10	57	12	27	14	06	02
11	60	17	08	12	15	04
12	23	52	35	06	01	13
13	30	42	04	11	08	15
14	33	46	20	13	12	22
15	36	31	29	43	29	-07
16	-02	-25	-31	-09	13	00
17	21	29	07	18	14	45
18	14	22	21	23	-09	-13
19	58	20	13	11	08	09
20	37	56	28	21	17	12
21	12	04	00	13	52	00
22	03	04	-04	-03	38	09
23	18	12	13	14	50	04
24	18	21	28	10	04	15
32	05	11	06	55	06	10
33	18	09	10	54	06	13
34	28	24	18	35	24	49
35	27	35	58	28	21	20
36	46	15	40	30	21	08
38	32	28	37	55	31	00
39	35	37	49	31	22	08

Note: From The student instructional report: comparisons with alumni ratings; item reliabilities; the factor structure (SIR Report No. 3). by J. A. Centra, 1973, p. 19. Copyright 1973 by Educational Testing Service. Reprinted by permission.

Table 4

Factor Analysis of Final Form of SIR:
Promax Primary Factor Loadings

Item Numbers	Factor					
	1	2	3	4	5	6
1	02	76	-13	07	04	-03
2	00	77	-15	01	06	-04
3	-08	49	45	-17	02	03
4	60	20	-13	-05	-10	03
5	42	11	04	-09	18	04
6	-06	12	-54	14	07	04
7	68	-09	20	-03	-14	-10
8	66	13	-07	-05	03	07
9	55	02	-06	02	04	12
10	66	-12	24	-03	-10	-06
11	72	01	-12	-02	05	-03
12	00	53	36	-16	-13	05
13	19	48	-19	05	-03	11
14	15	43	07	-04	00	16
15	14	18	06	36	19	-15
16	14	-25	-43	-01	26	03
17	03	16	-04	13	00	47
18	06	23	14	26	-24	-18
19	68	04	-02	-02	-07	02
20	12	55	11	02	04	03
21	-03	-04	-18	-02	71	-03
22	-09	01	-12	-19	56	07
23	-02	00	02	-08	64	-01
24	04	08	38	-04	-07	12
32	-15	00	-17	81	-12	13
33	04	-09	-11	77	-16	15
34	03	-04	08	32	07	51
35	-07	08	72	00	07	13
36	36	-17	40	12	07	01
38	03	06	20	50	18	-06
39	07	15	50	07	09	00

Note: From The student instructional report: comparisons with alumni ratings; item reliabilities; the factor structure (SIR Report No. 3). by J. A. Centra, 1973, p. 20. Copyright 1973 by Educational Testing Service. Reprinted by permission.

Table 5

Factor Loadings on Final Form of SIR:
 Promax Six Factor Solution
 N = 9700 students

	Factor Loading
<u>Factor I: Teacher-Student Relationship</u>	
11 Student felt free to question or give opinions	.72
19 Instructor openness to other viewpoints	.68
7 Instructor encouraged students to think	.68
10 Instructor raised challenging questions	.66
8 Instructor concern with students' progress	.66
4 Instructor availability for students	.60
9 Instructor made helpful comments on papers or exams	.55
5 Instructor knew when students didn't understand	.42
<u>Factor II: Course Objectives and Organization</u>	
2 Agreement between objectives and teaching	.77
1 Course objectives made clear	.76
20 Instructor accomplished objectives for the course	.55
12 Instructor was well prepared for class	.53
3 Instructor used class time well	.49*
13 Instructor informed students of how evaluated	.48
14 Instructor summarized or emphasized major points	.43
<u>Factor III: Lectures</u>	
35 Overall rating of lectures	.72
6 Lectures too repetitive of textbook(s)	-.54
39 Overall effectiveness of instructor	.50
3 Instructor used class time well	.45
16 Course scope was too limited	-.43
36 Overall value of class discussions	.40*
<u>Factor IV: Reading Assignments</u>	
32 Overall rating of textbook(s)	.81
33 Overall rating of readings	.77
38 Overall value of course to student	.50
15 Student interest stimulated by course	.36
<u>Factor V: Course difficulty and Workload</u>	
21 Level of difficulty of the course	.71
23 Pace of the course	.64
22 Work load for the course	.56
<u>Factor VI: Examinations</u>	
34 Overall rating of exams	.51
17 Exams reflected important aspects of the course	.47

*Have considerable loadings on other factors as well; see Table 2.

Note: From The student instructional report: comparisons with alumni ratings; item reliabilities; the factor structure (SIR Report No. 3). by J. A. Centra, 1973, p. 21. Copyright 1973 by Educational Testing Service. Reprinted by permission.

Table 6

Correlations Among the Six Promax Primary Factors
for the Final Form of SIR

Factor Number	Factor Numbers					
	1	2	3	4	5	6
1						
2	70					
3	70	75				
4	65	63	77			
5	65	58	65	71		
6	41	46	34	38		

Note: From The student instructional report: comparisons with alumni ratings; item reliabilities; the factor structure (SIR Report No. 3). by J. A. Centra, 1973, p. 22. Copyright 1973 by Educational Testing Service. Reprinted by permission.

Reliability of Instruments Designed for
Student Evaluation of Instruction

A major problem in the design of measurement instruments in educational research is that of reliability, broadly defined as the degree of consistency with which an instrument measures a thing (Borg & Gall, 1971, p. 142; Downie & Heath, 1974, p. 236). Or, stated somewhat differently,

to the extent that errors of measurement are present in a measuring instrument, to this extent the instrument is unreliable. In other words, reliability can be defined as the relative absence of errors of measurement in a measuring instrument (Kerlinger, 1973, p. 443).

The two most common approaches to obtaining reliability coefficients for instruments designed for student evaluation of instruction include (1) methods for estimating the internal consistency of a test, and (2) techniques for estimating the retest reliability or stability of an instrument (Doyle, 1975, p. 35).

Centra, as noted above, page 70, addressed the question of internal consistency in SIR by employing the Spearman-Brown prophecy formula to arrive at estimates of reliability. He concluded that his coefficients of reliability were sufficiently high to be acceptable (see Table 1, p. 71).

Hildebrand, et al. (1971), in research conducted at the University of California, Berkeley, involving 338 teachers and 1,015 students, reported similarly high reliability estimates of internal consistency for 36 items on a student evaluation instrument consisting of five sub-scales. Their reliability coefficients ranged from .80 to .89 (p. 17). The five sub-scales of the instrument, identified in a factor-analytic study, resemble those identified by similar means for SIR:

Scale 1, Analytic/Synthetic Approach, relates to scholarship, with emphasis on breadth, analytic ability, and conceptual understanding.

Scale 2, Organization/Clarity, relates to skill at presentation, but is subject-related, not student-related, and not concerned merely with rhetorical skill.

Scale 3, Instructor-Group Interaction, relates to rapport with the class as a whole, sensitivity to class response, and skill at securing active class participation.

Scale 4, Instructor-Individual Student Interaction, relates to mutual respect and rapport between the instructor and the individual student.

Scale 5, Dynamism/Enthusiasm, relates to the flair and infectious enthusiasm that comes with confidence, excitement for the subject, and pleasure in teaching (p. 18).

Brandenburg and Aleamoni (n.d.) reported internal consistency coefficients ranging from .80 to .98 for the six factors identified by the University of Illinois' Course Evaluation Questionnaire (CEQ). These results were derived from analysis of ratings gathered in 5,346 course

sections at the University of Illinois, Urbana Campus (p. 5).

The six sub-scale factors of the CEQ resemble those found both on the SIR and the instrument developed by Hildebrand, et al. They are: (1) General Course Attitude, indicating student overall reaction to the course; (2) Method of instruction, reflecting student reaction to methods of instruction; (3) Course Content, relating to level of difficulty and appropriateness of content; (4) Interest and Attention, reflecting degree to which instructor promoted student interest; (5) Instructor General, indicating student rating of instructor performance; and, (6) Instructor Specific, relating to specific instructor attributes, such as knowledge of subject, enthusiasm for teaching, interest in students, and organization of presentation (p. 14).

Doyle (1975), after analyzing the results of the ratings of 379 students in 11 courses on the University of Minnesota Student Opinion Survey, reported internal consistency estimates ranging from .90 to .96 (p. 36). The four general factors identified by Doyle in this study were: (1) the instructor, (2) the reading material, (3) the tests, and (4) general, relating to general performance characteristics of the instructor, including amount of help given students, fairness of evaluation procedures, and appropriateness of content (p. 100).

In considering the results of these studies, two important observations can be made: (1) reliability coefficients estimating the internal consistency of a variety of student rating instruments tend to be uniformly high, and (2) all of these instruments report, in broad terms at least, similar factor structures. Therefore, to the degree that the instruments are comparable, reliability coefficients would seem comparable. Thus, while the results of other studies do not constitute formal replication of Centra's reliability estimates for SIR, they do suggest that his findings are probably trustworthy.

Stability, or retest reliability, of SIR was assessed by Centra (1973) in the study cited above (see p. 72). He concluded that mid-semester and end-of-semester correlations of ratings for two groups of instructors were sufficiently high to indicate considerable stability of SIR ratings over time.

Costin (1968) reported similar results in a study using a rating instrument designed to assess instructor performance on the dimensions of skill, structure, feedback, and rapport. He found moderate to high correlations between mid-semester and end-of-semester ratings of teaching assistants in psychology, social sciences, humanities, and physical and biological sciences, with correlation coefficients ranging from .70 to .87.

Using a 46 item instrument derived from a factor analysis of 145 items drawn from rating instruments developed by others, Isaacson, McKeachie, Milholland, Lin, Hofeller, Baerwaldt, and Zinn (1964) had two groups of students at the University of Michigan in the Fall and Spring semesters rate their instructors.

The results were factor analyzed separately by sex and semester, and factor similarities obtained. . . . 6 factors appeared which were consistent over the 2 administrations, in different semesters, with different students, and teachers. They were labeled Skill, Overload, Structure, Feedback, Group Interaction, and Student-Teacher Rapport (p. 344).

The authors concluded that their study tended to confirm the factor structures and reliability of professionally-designed rating instruments (p. 351).

Other studies indicate that student ratings of instructors tend to be relatively stable over long periods of time. Guthrie (1954), for example, found correlations of .87 and .89 between students' ranking of the performance of the same teachers from one year to the next (p. 4). Drucker and Remmers (1951) found that student ratings correlated positively with ratings of the same instructors by alumni who had been out of college for 10 years (p. 142).

Summary Regarding Reliability of Rating Instruments

Research on SIR indicates that, in terms of internal consistency and stability, it is a reliable rating instrument. Similar research on other rating instruments provides additional support for the view that professionally-designed devices of this type tend, overall, to exhibit relatively high degrees of reliability, both in terms of stability and internal consistency. In this regard, then, SIR would seem to be an appropriate instrument for the purposes of this study.

Validity of Instruments Designed for Student Rating of Instruction

Attempts to assess the validity of instruments designed for student rating of instructors have generally focused on two major dimensions of the problem: (1) subjective, or content validity, and (2) objective, or external-criterion-referenced validity (Doyle, 1975, pp. 47-70). The content validity of an instrument is usually determined by assessing the degree to which its content is considered to represent the universe of content inhering in the properties being measured (Borg & Gall, 1971, p. 136); Downie & Heath, 1974, p. 243; Kerlinger, 1973, p. 458). Criterion-referenced validity is assessed by comparing scores on an instrument "with one or more external variables, or criteria, known or

believed to measure the attribute under study" (Kerlinger, p. 459). In statistical terms, "it is the correlation between a set of scores or some other predictor with an external measure" (Downie & Heath, p. 243).

In addressing the issue of content validity, Centra (1972), in developing SIR, employed the following procedure:

1. Construct a preliminary instrument--two or three times the length of the final form--by drawing, in part, on the extensive findings of research already done. Between 35 and 40 items seemed appropriate for the final form. A longer questionnaire would take too much time to administer, while a shorter one might not cover all the essentials.
2. Administer the preliminary form to a sample of classes at Northwestern and collect faculty and student reactions to the items. Also ask all other Northwestern faculty members for their reactions. Send the results to Northwestern.
3. Revise the first version in the light of item analysis and comments from students and faculty.
4. Administer the revised form, now close to its final length, and send the results to the Northwestern faculty members.
5. Analyze and revise the form once again to arrive at a "final" version (p. 6).

Centra's factor analysis of the preliminary form, discussed above, pages 68-69, resulted in the identification of five factors. Comparing his results with those obtained in other factor analytic studies, he noted that four of his factors were virtually the same as those identified by others (p. 6). These four factors, as ultimately identified on the final form of SIR, are: (1) Teacher-Student Relationship, (2) Course Objectives and Organization,

(3) Lectures, and (4) Course Difficulty and Workload. His final factor analysis, prior to publication of SIR in its present form, yielded two additional factors: (1) Reading Assignments, and (2) Examinations.

The factor-analytic study by Isaacson, et al. (1964), mentioned above in connection with reliability, resulted in the isolation of six stable factors: (1) General Teaching Skills, (2) Workload or Overload, (3) Course Structure, (4) Feedback to Students, (5) Group Interaction, and (6) Student/Teacher Rapport (pp. 348-350). This structure, derived from a factor analysis of 145 items drawn from instruments similar to SIR, parallels in many respects the factor structure reported by Centra.

Five factors relating to instructor behaviors and traits were also identified by Doyle and Whitely (1974, p. 268): (1) Attitudes towards students, (2) Expository Skills, (3) Motivation of Interest, (4) Stimulation of Thinking, and (5) Generalization of Content, referring to how well course content was related to other areas of knowledge.

Similarly, Hildebrand, et al. (1971), identified five factors resembling those isolated by others: (1) Analytic/Synthetic Approach, (2) Organization/Clarity, (3) Instructor-Group Interaction, (4) Instructor-Individual Student Interaction, and (5) Dynamism/Enthusiasm. (See p. 84, above, for elaboration of these factors.)

Additional corroborative evidence for the validity of the kinds of factors identified in the factor analytic studies cited is provided by the results of research reported by Crawford and Bradshaw (1968). In an effort to determine those characteristics considered to be most important to effective college teaching, they asked a randomly selected sample of students, faculty, and administrators to identify those qualities they considered most essential to good teaching. The five most frequently mentioned characteristics, in order of frequency, were:

- (1) Has thorough knowledge of subject matter plus substantial knowledge in related fields.
- (2) Lectures are well-planned and organized.
- (3) Is enthusiastic, energetic, and has a lively interest in teaching.
- (4) Is student-oriented; willing to help students outside of class; is friendly.
- (5) Encourages student participation in class by questions and discussion
(p. 1081).

Similar results were obtained by Musella and Rusch (1968) when they asked students to describe the teacher behaviors that best promoted their thinking. Among the most frequently mentioned characteristics were: expert knowledge of subject matter, systematic organization of course content, ability to explain clearly, enthusiastic attitude toward the subject, and ability to encourage thought.

Considering that judgments regarding the content validity of an instrument are ultimately somewhat subjective, being based mainly on informed or authoritative

opinion, it would seem that SIR may be regarded as having substantial content validity. The procedures used in its development indicate that systematic efforts were made to secure a representative sample of items from the theoretical universe of possible items relating to the evaluation of instruction. Centra accomplished this by surveying the research literature in the field, creating a large pool of items drawn from this research, and submitting these items for further evaluation by students and faculty. Additional refinement of the instrument, including factor analysis, resulted in the identification of six basic factors, with particular items associated with each, underlying the scale. Finally, research conducted by others, employing similarly rigorous methods and yielding similar results, suggests that: (1) Centra's methods were appropriate and (2) the instrument which was produced, SIR, has considerable content validity.

Probably the best criterion against which to measure the validity of an instrument designed for student rating of instruction is that of student achievement.

The ultimate criteria for the junior college. . . are changes produced in its students and its community. The criteria may thus be viewed as products toward which the institution strives, rather than as processes in which it engages (Cohen & Brawer, 1969, p. 62).

However, while many criterion-referenced validity studies of student rating instruments focus on the

relationship between ratings and student achievement, those working in the area recognize the limitations of such an approach.

In spite of the breadth and depth of possible measures of student learning, most objective validation studies have been concerned exclusively with those kinds of learning that are more or less conveniently measured by classroom examinations. Since the content of these is rarely reported, it is quite probable that affective achievement is not involved in these studies and that even within cognitive achievement, most measures have more to do with recall of facts and basic grasp of material than with higher forms of learning. Most learning-criterion measures, then, are probably less meaningful themselves than one might like them to be (Doyle, 1975, p. 55).

But, while these cautions regarding the ultimate value of student rating instruments should doubtless be kept in mind, it is equally important to note that student achievement, as finally expressed in the form of grades, is often and to a very considerable degree measured in terms of performance on examinations. Therefore, if validation research indicates that student achievement is positively correlated with student ratings of instruction, it would seem proper to argue that instruments designed to elicit such ratings have validity, even if only of a limited or conditional sort.

Research on the relationship between student ratings on SIR and student achievement, reported above on pages 57 to 64, indicates that there are moderately positive

correlations between several of the factor ratings and student achievement. Factors for which positive correlations were reported include: (1) global ratings of teachers, (2) courses, (3) lectures, and (4) ratings of course objectives and organization.

In a study involving 120 instructors of the Aircraft Mechanic course at Sheppard Air Force Base, Morsh, Burgess, and Smith (1956), examined the relationship between student ratings of instructor effectiveness and student achievement. Prior student achievement was statistically adjusted and students rated instructors in terms of (1) overall effectiveness, (2) knowledge of subject, (3) teaching methods, (4) understanding of students, and (5) as a personal friend. Overall ratings of instructor effectiveness, teaching ability, and instructor understanding of students were found to be significantly correlated with student achievement (p. 84). These results are generally consistent with those reported by Centra for SIR.

While the studies above suggest that there is some basis for asserting that student rating instruments are a valid means of predicting, to a limited extent, student achievement, one fairly recent study questions the validity of this assumption. Rodin and Rodin (1972), analyzed student ratings of 11 teaching assistants conducting recitation sections for a single large undergraduate calculus class. Prior student achievement was statistically adjusted

and students rated recitation instructors on the global item "What grade would you assign to his total teaching performance?" (p. 1165). Comparing these ratings with student achievement on the final course examination, it was found that the correlation between examination means and mean student ratings was $-.75$, leading the authors to conclude that students tend to rate most highly those instructors from whom they learn the least (p. 1166).

In a study designed as a reply to Rodin and Rodin (1972), Frey (1973), compared ratings of 13 regular faculty in calculus courses with student achievement in the course. Faculty used a common syllabus and a common final examination. Where Rodin and Rodin used a global rating item, Frey employed a rating instrument consisting of 18 items scored on a seven-point scale. They were factor analyzed into six dimensions: (1) Workload, (2) Student Accomplishment, (3) Organization-Planning, (4) Grading, (5) Teacher's Presentation, and (6) Teacher Accessibility (p. 83).

A regressed final examination score was calculated for each student by taking the difference between his observed score and the score predicted on the basis of his SAT profile and adding this to the average observed scores of all students taking the examination (p. 84).

These average regressed final examination scores for each class were used as the external criterion for testing the validity of the ratings. Frey's mean correlation coefficients for each of the six factors were: (1) $.44$ for

Workload, (2) .87 for Student Accomplishment, (3) .62 for Organization-Planning, (4) .69 for Grading, (5) .75 for Teacher's Presentation, and (6) .31 for Teacher Accessibility (p. 84). As can be seen, mean ratings and final examination scores are positively correlated for each factor. Commenting on these results, Frey said,

Since correlation coefficients based on such a small number of observations are notoriously unstable, the mean correlation for the two courses. . . is probably the best estimate of the strength of association between each rating factor and final examination performance. In these data, in addition to the student accomplishment factor, the teacher's presentation factor also correlated highly. Workload and teacher accessibility were not as useful in predicting exam performance (p. 84).

The contradictory results obtained by Rodin and Rodin on the one hand and Frey on the other, might be interpreted as indicating the inherent instability and lack of validity of student rating instruments in general, but this appears unlikely. Ratings in the Rodin and Rodin study were based on student evaluation of graduate assistants in small recitation sections. The specific responsibilities assigned these graduate assistants were those of answering questions about lectures delivered by the instructor of the course, and administering and reviewing test problems prepared by the instructor. In discussing the study, Doyle (1975) said,

substantively, the study appears to be not so much an examination of the relationship between student evaluations and teaching/learning as between student evaluations and the ancillary activities of question-answering, test-giving, and problem-working. From this perspective, one might even expect a negative relationship with a learning measure in this case, since better students should have less need or use for these supplementary offerings and therefore be expected to give less favorable ratings (p. 58).

Gessner (1973), in a study reporting positive correlations between student ratings of instruction and subsequent student performance on a national normative examination for prospective medical students, drew conclusions identical to Doyle's with regard to the Rodin and Rodin study (p. 568).

Observing that many studies of the validity of student rating instruments tend to rely upon data from one course, and that most instructors involved are teaching assistants rather than experienced teachers, Sullivan and Skanes (1974) undertook a large-scale study at Memorial University using approximately 2,300 first-year students enrolled in 130 introductory courses taught mainly by experienced instructors. Students were assigned to sections on a random basis, and most courses used common final examinations which were scored by special committees (p. 586). The average correlation coefficient between overall student ratings of instructor performance and final examination scores was .39, which was significant at the .05 level.

"[T]hese results indicate that there is a modest, but significant, relationship between student evaluation of instruction and student achievement" (p. 586).

In order to test the validity of their student rating of instruction instrument against the external criterion of student achievement, Frey, Leonard, and Beatty (1975), obtained instructional ratings from students in multi-section courses at three universities. All sections at each school used common course syllabi, texts, and final examinations. The Endeavor Instructional Rating Form was used at all three universities. Factor analysis of the 21 item instrument indicated the presence of seven factors: (1) Clarity of Presentation, (2) Work Load, (3) Personal Attention, (4) Class Discussion, (5) Organization-Planning, (6) Grading, and (7) Student Accomplishment (p. 438). The mean correlation coefficients between these rating factors and final examination performance were: (1) .58 for Clarity of Presentation, (2) -.28 for Work Load, (3) .38 for Personal Attention, (4) .36 for Class Discussion, (5) .51 for Organization-Planning, (6) .30 for Grading, and (7) .59 for Student Accomplishment (p. 441). Inspection of these correlation coefficients indicates that, with the exception of Work Load, all of the factors correlate positively with student achievement on final examinations. The authors concluded that these factors, in particular (1) Clarity of Presentation, (2) Organization-Planning, and (3) Student

Accomplishment, are quite strongly correlated with the external criterion of student achievement (p. 440).

Summary Regarding the
Validity of Student
Rating Instruments

With the exception of the Rodin and Rodin study, which seems open to serious challenge, it appears that much of the research on student rating instruments indicates that such instruments, if well-designed, have validity in terms of the external criterion of student achievement. Centra's studies in particular, for the purposes of this study, are important, indicating as they do the validity of several factors on SIR. Other studies provide significant additional support for the contention that student ratings of instructor performance are valid, though somewhat limited, predictors of student achievement.

It is recognized, however, that the weak to moderately high correlations reported in the research, coupled with the fact that student achievement on final examinations probably reveals only a portion of what students may have learned in a course, would almost certainly not justify using the results of ratings obtained on one instructor to make personnel decisions. But it does seem reasonable to argue that the validity of SIR is sufficiently well-established to warrant its use for research purposes.

Chapter 4

DESIGN OF THE STUDY

The present study was designed to determine whether or not there are significant relationships between how university transfer students in the community college rate the classroom performance of their instructors and the professional backgrounds and experience of these instructors. Group I instructors, identified as educationists, consists of those with master's degrees who have completed teacher certification or training programs; Group II instructors, academics, consists of those with master's degrees who have earned nine or fewer quarter hours of credit in professional education courses of a general nature, such as philosophy, history, or sociology of education. Academics with courses relating directly to instruction, such as educational tests and measurements, teaching methods and materials, or student teaching, were excluded. In addition, instructors chosen for this study: (1) were full-time employees of their institutions, (2) were teaching at least 50 percent of the time in the university transfer area, (3) had taught the same or similar courses before, and (4) had never been employed as full-time instructors in a four-year college or university.

As the object of this study was to compare instructors whose primary assignment is teaching transfer courses, eliminating those teaching less than half-time in this area would, it was believed, tend to reduce the possibility of including instructors (1) only temporarily assigned responsibilities for such courses and (2) those who may not have taught the courses before.

The study was also limited to instructors employed full-time by their respective community colleges. Recent surveys indicate that the instructional practices of full-time and part-time community college instructors differ in a number of ways: part-timers report much less control than full-timers over selection of instructional materials, less use of various instructional media, fewer out-of-class activities (assignments), shorter reading assignments, less use of instructional support services, and less emphasis on assignments and activities that require out-of-class time to grade (Friedlander, 1979, pp. 68-69). While these differences would suggest that comparison of student ratings of full-timers and part-timers may be worthy of serious examination, it was assumed that uncontrolled inclusion of part-timers in this study could easily have introduced factors that might have confounded any results obtained.

Instructors with prior, full-time, paid professional experience as teachers in four-year colleges or

universities were also excluded from this study. The professional environment from which community college instructors whose experience has been in four-year schools come is one in which the rewards and incentives for professional conduct do not focus exclusively, or even primarily, on teaching performance; considerable importance in most four-year colleges and universities is attached to scholarly activity and research as well as teaching. In public schools and community colleges, however, professional activity is concentrated almost entirely upon teaching and tasks related to instruction (Burnett, 1977, pp. 1-2; Fields, 1962, pp. 63-95; Garrison, 1967, pp. 16-17; Jencks & Riesman, 1968, p. 493; Monroe, 1972, pp. 26-36). In this regard, community colleges and public schools do not appear to differ in any important respects. It would thus be reasonable to expect that community college instructors whose sole professional experience has been at public school and community college levels might be more exclusively oriented towards teaching than are their colleagues from four-year institutions whose professional interests have probably been more evenly divided between scholarly activity and teaching. Limiting the study in this fashion thus insured a more homogeneous sample of instructors.

Students completing the rating instrument were enrolled in the transfer curriculum, not in occupational programs. Students enrolled in occupational and vocational

programs occasionally take courses in the university-transfer area also. Research has indicated that they differ significantly from students pursuing transfer programs in terms of socioeconomic status, academic aptitude, motivation, and interest in traditional academic subjects (Anthony, 1964; Fenske, 1969; Steward, 1966). When completing the SIR instrument, students were asked to specify whether or not they were pursuing an occupational or vocational credential; those enrolled in vocational or occupational programs were excluded.

The samples used in this study were not stratified according to sex of instructors as research has indicated no relationship between sex and student ratings. In a study conducted by the Educational Testing Service in which random samples of 10,000 classes and approximately 15,000 students (drawn from pools of about 16,000 classes and more than 300,000 students to whom SIR had been administered), no significant differences in ratings given male and female instructors were found (Centra, 1976a, pp. 19-34). Similar findings have been reported by other investigators (Downie, 1952, p. 503; Elliott, 1950, p. 19).

The sex of students was also ignored because there appears to be no clear relationship between this factor and ratings of instructor performance. In the Educational Testing Service study cited above, no significant

differences were found between male and female student ratings of instructors (p. 31). Other studies have tended to support this finding (Elliott, 1950, p. 55; Hildebrand, Wilson, & Dienst, 1971, p. 28).

The Educational Testing Service study cited above also found that first year teachers consistently received the lowest ratings, with those having between three and 12 years of experience receiving the highest ratings. Further, it was concluded that teachers with about 20 years of experience might be expected to receive noticeably lower ratings (p. 38). Elliott (1950, p. 19) also noted that the least experienced teachers tended to receive the lowest ratings, but found no significant decline for the most experienced teachers. Downie (1952), in examining the relationship between age of instructors and ratings, found no differences between ratings given instructors under or over 40 years of age, suggesting that lengthy teaching experience may be of little or no significance (p. 496). However, the available research does not consider experience in relation to professional background; therefore, instructors with fewer than three or more than 20 years of experience were included in this study.

Neither student major nor whether courses were required or elective was considered in this study, as research on these questions has found no significant

relationships between these factors and student ratings (Centra, 1976a, p. 20; Downie, 1952, pp. 495-503; Hildebrand, et al., p. 27).

The Educational Testing Service research on SIR also found that classes with fewer than ten students tended to receive the highest ratings while those with 35 to 100 students received the lowest ratings (Centra, 1976a, pp. 48-50). To reduce the possibility of bias relating to class size, the SIR was not administered in this study to classes of fewer than ten or more than 35 students.

The student rating instrument used in this study was the Student Instructional Report (SIR), published by the Educational Testing Service of Princeton, New Jersey (see Appendix C). The SIR was administered Winter Term, 1980, by instructors in their classes during the last week prior to the final examination period.

Community colleges participating in this study were Rogue Community College, Grants Pass, Oregon; Umpqua Community College, Roseburg, Oregon; and Linn-Benton Community College, Albany, Oregon.

Sampling Procedures

Two related populations were utilized in conducting this research, one consisting of students enrolled in university transfer courses in the community colleges

participating in the study, the other consisting of their instructors in these courses.

The SIR was administered to all students enrolled in the university transfer courses taught by the instructors selected. The SIR was completed by 1,380 students. Since it is considered that the student population of the three community colleges participating in this study is representative of that found in similar community colleges located in small towns and suburban areas of Oregon and other parts of the Pacific Northwest, results of the ratings obtained from this population should be generalizable to most of the community colleges in this region. It is recognized, however, that the nature of the student population providing the ratings for the study probably imposes some limits on the generalizability of results. There are no large concentrations of ethnic or racial minorities in the study area; therefore, results may not generalize to urban community colleges enrolling substantial numbers of such minority students, because it could be argued that these students may differ significantly on a number of dimensions from the general student population. Such differences, if real, could materially affect student ratings.

The sample of instructors for the study was selected from those teaching at three community colleges in Western Oregon. When surveys of university transfer instructors at the three institutions were completed, identifying Group I

and Group II instructors (see Appendix D for survey instrument), samples of 15 each were selected on a random basis for inclusion in the two study groups.

This sampling procedure could perhaps be questioned on the basis that it might yield groups which are: (1) biased because not randomly drawn from normal distributions, and (2) variances of the two groups so chosen may not be homogeneous. If, therefore, the assumptions of normality and homogeneity of variance are in doubt, the use of a parametric statistic is theoretically inappropriate (Kerlinger, 1973, p. 286). However, as this same author and others point out (Courtney & Sedgwick, 1973, p. 2; Downie & Heath, 1974, p. 173; Kerlinger, pp. 287-288), assumptions of normality and homogeneity of variance may be violated if certain conditions are met. In a study involving systematic and extensive testing of both assumptions, Boneau (1960), concluded

that for a large number of different situations confronting the researcher, the use of the ordinary t test and its associated table will result in probability statements which are accurate to a high degree; even though assumptions of homogeneity of variance and normality of the underlying distributions are untenable. This large number of situations has the following general characteristics: (a) the two sample sizes are equal or nearly so, (b) the assumed underlying population distributions are of the same shape or nearly so. (If the distributions are skewed they should have nearly the same variance.) If these conditions are met, then no matter what the variance differences may be, samples of as small as

five will produce results for which the true probability of rejecting the null hypothesis at .05 level will more than likely be within .03 of that level. If the sample size is as large as 15, the true probabilities are quite likely within .01 of the nominal value (p. 62).

Moreover, as Kerlinger noted, unless there is substantial evidence to suggest that the populations from which samples are drawn are seriously non-normal, and variances quite heterogeneous, a parametric statistic is entirely appropriate (p. 287). Confirmation of this view and additional support for Boneau's conclusions, were obtained in research involving analysis of variance statistics (Lindquist, 1953, p. 86). And, like both the t and analysis of variance, canonical correlation, the statistic used in this study, is considered to be tolerant of violations of assumptions regarding normality and homogeneity (Kerlinger & Pedhazur, 1973, pp. 47-48). It seems highly improbable that the samples of instructors used in this study differ in any major way from the general population of instructors in similar community colleges in the Pacific Northwest. Even if there are some differences, canonical correlation is a statistic sufficiently robust to tolerate some violation of theoretical assumptions. It was therefore concluded that the samples of instructors chosen for this research are adequate: the results should be generalizable to a larger population of community college university transfer instructors.

Variables and Hypotheses

Independent, or predictor, variables in this study were: (1) Professional teacher training, or lack thereof, treated as a dichotomous variable, (2) Amount of teaching experience, (3) Amount of subject-matter graduate preparation, and (4) Student grade point average (GPA). The latter three variables were all treated as continuous variables.

Dependent, or criterion, variables consisted of the general and sub-scale factors on the SIR instrument. These are: (1) Overall Rating, (2) Faculty-Student Interaction, (3) Course Organization and Planning, (4) Communications, (5) Textbooks and Readings, (6) Course Difficulty and Workload, and (7) Examinations. Specific SIR items which form these sub-scale factors, and the scales by which they are scored, are as follows. Item numbers below are those utilized on the SIR, a sample of which is located in Appendix C, below.

Overall Ratings:

36. I would rate the overall value of class discussions:
37. Overall, I would rate the laboratories:
38. I would rate the overall value of this course to me:
39. Compared to other instructors you have had (secondary school and college), how effective has the instructor been in this course?

All items on this sub-scale are scored on a scale of from one to five, with five being the highest rating possible.

Faculty-Student Interaction:

4. The instructor was readily available for consultation with students.
5. The instructor seemed to know when students didn't understand the material.
8. The instructor seemed genuinely concerned with students' progress and was actively helpful.
9. The instructor made helpful comments on papers or exams.
11. In this class I felt free to ask questions or express my opinions.
19. The instructor was open to other viewpoints.

Items on this sub-scale are scored on a four-point scale, with four being the highest rating possible.

Course Organization and Planning:

1. The instructor's objectives for the course have been made clear.
2. There was considerable agreement between the announced course objectives and what was actually taught.
3. The instructor used class time well.
12. The instructor was well prepared for each class.
13. The instructor told students how they would be evaluated in the course.
14. The instructor summarized or emphasized major points in lectures or discussions.
20. In my opinion, the instructor has accomplished (is accomplishing) his or her objectives for the course.

These items are all scored on a four-point scale, four being the highest score possible.

Communications:

6. Lectures were too repetitive of what was in the textbook(s).

- 7. The instructor encouraged students to think for themselves.
- 10. The instructor raised challenging questions or problems for discussion.
- 24. To what extent did the instructor use examples or illustrations to help clarify the material?
- 35. I would rate the general quality of the lectures:

In order to establish a unidirectional, equal-interval scoring system for this sub-scale, it was necessary to re-code two items subsequent to their entry in the raw-data file compiled by the computer. Item 6, originally scored on a four-point scale in which a rating of one was the highest rating possible, was reversed and transformed to a five-point scale, with 1 being scored as 5, 4 as 1, 3 as 2.5, and 2 as 3.5. Item 7 scoring was not reversed, but it was similarly transformed to a five-point scale.

Textbooks and Readings:

- 32. Overall, I would rate the textbook(s):
- 33. Overall, I would rate the supplementary readings:

Items on this sub-scale are scored on a five-point scale, with five being the highest score possible.

Course Difficulty and Workload:

- 21. For my preparation and ability, the level of difficulty of this course was:
- 22. The workload for this course in relation to other courses of equal credit was:
- 23. For me, the pace at which the instructor covered the material during the term was:

For purposes of analysis, this sub-scale was scored in two different ways, which required identifying it as two

separate variables in the analysis, DFWK1 and DFWK2. DFWK1 was scored utilizing the five-point scale on the SIR instrument in which scores of 1 and 2 indicated too easy or light a workload, scores of 4 and 5 representing too heavy a load, and 3, the midpoint, indicating a satisfactory workload. For analytic purposes, a high score would indicate too heavy a load, a low score too light a load. DFWK2 represents a recoding of the original SIR values, with scores of 1 and 5 being transformed to a single score of 1, scores of 2 and 4 being transformed to a single score of 2. A score of 3, indicating satisfactory performance, remains the same. Using this recoding scheme, the higher the score, the better the rating. By subjecting scores obtained from both DFWK1 and DFWK2 to analysis, it was possible to extract a maximum amount of information from ratings obtained on this sub-scale.

Examinations:

- 17. Examinations reflected the important aspects of the course.
- 34. Overall, I would rate the quality of the exams:

Item 17 was scored on a four-point scale, with four being the highest rating; item 34 was scored on a five-point scale, five being the highest score obtainable.

In the canonical correlation analysis, scores for sub-scales were compiled by simply adding scores of the individual items for each sub-scale. In cases where

students omitted a score for an individual item, the mean score for that sub-scale was used in the analysis.

The hypotheses in this study consist of the following:

1. There is no relationship between student ratings of instruction and professional teacher-training backgrounds of instructors in the university transfer area.
2. There is no relationship between student ratings of instruction and the amount of teaching experience of instructors in the university transfer area.
3. There is no relationship between student ratings of instruction and the amount of graduate-level, subject-matter preparation of instructors in the university transfer area.
4. There is no relationship between prior college achievement, as reflected in student GPA, of students and their ratings of instructors in the university transfer area.

Analysis

Canonical correlation, the statistical technique employed in this study, is intended for use in research involving both two or more independent and two or more dependent variables (Kerlinger & Pedhazur, pp. 341-342).

It is also the statistic of choice where independent variables are both continuous and categorical (p. 114). All of these conditions are present in this study. In addition, where other statistics, such as analysis of variance or the t test, are concerned with statistically significant differences between means, such as might be obtained for mean ratings of educationist and academic instructors in the present study, canonical correlation is concerned with the relationship between independent (predictor) variables and dependent (criterion) variables. If, therefore, X represents an independent variable and Y represents a dependent variable, a canonical correlation coefficient, in comparison with a test of significant differences,

expresses the statistical significance of the relation between X and Y, X being group membership, and is, in a sense, more fundamental since it addresses itself "directly" to the point of main interest, the relation between X and Y rather than to the differences between the Y means (Kerlinger & Pedhazur, p. 113).

The method also provides for calculating more than one source of common variance.

In other words, the method systematically extracts the first and largest source of variance, and the canonical correlation coefficient is an index of the relation between the two sets of variables based on this source of variance. Then the next largest source of variance, left in the data after the first source is extracted and independent of the first source, is analyzed. The second canonical correlation coefficient, which is smaller than the

first, is an index of the relation between the two sets of variables due to this second source of variance (Kerlinger & Pedhazur, pp. 344-345).

For the purposes of the present study, this is an important feature of the method, because it allowed examination of the relative amount of variance attributable to multiple sources of variance, with each such source being examined independent of others.

Critical level for Chi square (the test of statistical significance used for canonical correlation as employed in this study), was set at the .05 level. This Alpha level was chosen because of the relatively small samples of instructors used in the study: designating a lower significance level might yield results more open to challenge or dispute, while a higher level, such as .01, was considered to be unnecessarily high.

Statistical analyses of data in this study were performed using the CYBER 70, model 73, computer at the Milne Computer Center at Oregon State University. Statistical programs used were those described in the SPSS Manual (Nie, Hull, Jenkins, Steinbrenner & Bent, 1975). These programs are periodically updated; the most recent version is that described in SPSS-6000 Release 8.0 Update Manual (Hohlen, 1979). The revised version was used in this study.

Chapter 5

FINDINGS OF THE STUDY

Frequency of Response Data

Prior to performing the canonical analysis of data, a computer program designed to report frequency of response was utilized (Nie, et al., 1975, p. 194). This was done for two reasons: (1) to determine whether or not the data were being read correctly by the computer, and (2) to check on completeness of student responses, since accurate sub-scale scores on the SIR depend upon obtaining ratings for each item included in the sub-scale. Results of this analysis are reported in Table 7, below.

As Table 7 indicates, relatively few items were not scored by students, thus allowing compilation of complete sub-scale scores for a very large number of tests. Two items, however, were omitted by considerable numbers of students. Missing values for 592 students (42 percent) were reported for item 33. This item reads: "Overall, I would rate the supplementary readings:" (see Appendix C). Its omission by so many students is probably best understood in terms of its inapplicability; many instructors rely on textbooks and do not assign supplementary readings. Missing values for 915 students were reported for item 37 (66 percent). This item reads: "Overall, I would rate the

Table 7

Frequency of Response to SIR Items Within Sub-Scales

Sub-Scale Label	Item No.	Completed Items	Missing Items
OVALL (Overall Rating)	36.	1289	91
	37.	465	915
	38.	1342	38
	39.	1328	52
ORPLN (Course Organization and Planning)	1.	1360	20
	2.	1353	27
	3.	1372	8
	12.	1361	19
	13.	1345	23
	14.	1357	23
	20.	1334	46
FACST (Faculty/Student Interaction)	4.	1285	95
	5.	1331	49
	8.	1342	38
	9.	1232	148
	11.	1363	17
	19.	1293	87
COMM (Communications)	6.	1251	129
	7.	1322	58
	10.	1302	78
	24.	1366	14
	35.	1332	48
DFWK1/DFWK2 (Course Difficulty and Workload)	21.	1367	13
	22.	1358	22
	23.	1366	14
TXTRD (Textbooks and Readings)	32.	1199	181
	33.	788	592
EXM (Examinations)	17.	1190	190
	34.	1160	220

laboratories:" (see Appendix C). Since most of the instructors included in the study sample teach in non-laboratory course areas, this item was frequently omitted as not applicable.

Such large numbers of omitted responses for items 33 and 37 doubtless artificially depressed the scores for sub-scales TXTRD (Textbooks and Readings) and OVALL (Overall Ratings), since mean sub-scale scores are used in the canonical analysis when any item in a sub-scale on an individual SIR is identified as a missing value (Hohlen, 1979, p. 9). These results would seem to limit the usefulness of such data for the analytic and interpretive purposes of this study.

Descriptive Statistics

A further check on the reliability of data was conducted by examining descriptive statistics for each variable included in the study (Nie, et al., p. 185). These statistics are reported in Table 8, below.

Mean scores for some variables, when compared to possible minimum and maximum scores for these variables, indicate non-normal distributions of some sub-scale scores. Student GPA, for example, scored on a seven-point scale in which a score of one equals a GPA of 3.50-4.00, proceeding at half-point intervals down to seven, which indicates a

Table 8
Descriptive Statistics for Variables in Study

Variable Label	Mean	Standard Error	Standard Deviation	Skew- ness	Range
GPA (Grade Point Average)	2.07	.02	.99	1.04	1-7
CRHR (Quarter Hours Graduate Credit in Subject)	56.16	.8	29.72	1.77	12-150
TCHEX (Years Teaching Experience)	11.00	.16	6.03	.68	1-25
PROPRP (Teacher Training)	1.49	.01	.5	.03	1-2
OVALL (Overall Rating)	15.54	.17	3.66	-.91	4-20
ORPLN (Course Organization and Planning)	24.15	.09	3.38	-.81	8-28
FACST (Faculty/ Student Interaction)	20.20	.09	2.95	-.86	8-24
COMM (Communications)	19.44	.08	2.82	-.52	7-24
DFWK1 (Difficulty and Workload)	9.68	.04	.178	-.07	3-15
DFWK2 (Difficulty and Workload)	7.49	.03	1.31	-.91	3-9
TXTRD (Textbooks and Readings)	7.28	.06	1.77	-.48	2-10
EXM (Examinations)	7.61	.05	1.70	-.73	2-10

GPA lower than 1.0, reports a mean of 2.07. This, coupled with the measure of skewness, indicates a distribution that is positively skewed, with most students reporting relatively high GPAs.

Examination of the mean scores for the SIR ratings variables reveals that students tended, for the most part, to rate instructors fairly high. The measures of skewness for these variables support this conclusion, since all of these measures indicate that distributions for rating variables were negatively skewed, most ratings being concentrated towards the upper ends of the scales.

The standard deviations reported indicate that the variability of scores for most variables is not great, with most scores distributed rather closely around the means. The standard deviation of 29.72 reported for CRHR (Quarter Hours of Graduate Credit in Subject Field) reflects a wide range in scores, with one instructor reporting 12 credit hours, another reporting 150. The wide gap between these two extreme scores accounts for the relatively large standard deviation reported for this variable.

The estimated standard error of the mean reported for each variable tends to be quite small, which suggests that mean scores obtained for each variable are probably reliable estimates of population means for these variables (Downie & Heath, p. 160; Spence, Underwood, Duncan & Cotton, 1968, p. 90).

Evaluation of both frequency of response reported for SIR items and the descriptive statistics obtained for each variable in the study indicates that there exists an adequate and reliable data base for conducting canonical analysis.

Canonical Correlation Analysis

Results of the canonical correlation analysis of the data are shown in Table 9, below. The correlation matrix from which these canonical correlations were calculated is contained in Appendix E. As an additional check on the reliability of the analysis, a Pearson product-moment correlation matrix, with levels of significance indicated, was also generated (Nie, et al., p. 280). This matrix is contained in Appendix F.

Examination of Table 9 reveals that only the first correlation coefficient was statistically significant ($r=.295$, $N=1380$, $p=.001$). The coefficients of correlation to which this canonical correlation refers are those appearing in the first column of the table under the heading CANVAR 1. The first sub-set of coefficients listed are those of the SIR rating, or criterion, variable: the second sub-set listed consists of the predictor variables.

Inspection of the coefficients reported for the criterion variables indicates that the loading for one, ORPLN (Course Organization and Planning) was substantially

Table 9

Canonical Correlation between Criterion and Predictor Variables

Number	Eigenvalue	Canonical Correlation	Wilk S. Lambda	Chi-Square	No. D.F.	Probability
1	.087	.295	.859	63.883	32	.001
2	.031	.178	.941	25.328	21	.233
3	.024	.156	.972	11.588	12	.479
4	.002	.050	.997	1.077	5	.956

Coefficients for Canonical Variables of the Second Set

	CANVAR 1	CANVAR 2	CANVAR 3	CANVAR 4
OVALL (Overall Rating)	.172	.165	.342	-.279
ORPLN (Course Organization and Planning)	.712	.203	-.593	-.522
FACST (Faculty/Student Interaction)	.048	-.011	-.114	.693
COMM (Communications)	-.232	-.373	.489	.546
DFWK1 (Difficulty and Workload)	.220	.879	.061	.402
DFWK2 (Difficulty and Workload)	.217	-.042	-.460	.215
TXTRD (Textbooks and Readings)	.053	-.150	-.278	.296

Coefficients for Canonical Variables of the First Set

	CANVAR 1	CANVAR 2	CANVAR 3	CANVAR 4
GPA (Grade Point Average)	-.308	.661	-.062	-.683
CRHR (Quarter Hours Graduate Credit in Subject)	-.653	.392	-.095	.714
TCHX (Years Teaching Experience)	-.225	.015	1.083	.031
PROPRP (Teacher Training)	.612	.716	-.360	.534

Key: CANVAR = coefficients reflecting importance of the original variables in the subset in forming the variates

greater than loadings on all other variables of this sub-set. Loading on this variable is .712. Among the predictor variables, only two emerged with substantial loadings: CRHR (Credit Hours of Graduate-Level, Subject-Matter Preparation) with a negative loading of $-.653$, and PROPRP (Professional Teacher Training) with a loading of .612.

What these results mean is that there appear to be statistically significant relationships between the criterion variable, ORPLN, and the two predictor variables, CRHR and PROPRP. In other words, professionally prepared instructors (educationists), tend to receive higher ratings by students on the SIR sub-scale of Course Organization and Planning than do instructors lacking professional teacher-training backgrounds (academics). At the same time, instructors with greater amounts of graduate-level, subject-matter preparation tend to receive lower ratings on Course Organization and Planning than do instructors with lesser amounts of such preparation.

In assessing the importance of these apparent relationships, it must be noted that the amount of variance in ORPLN which can be accounted for by the effect of both CRHR and PROPRP is only .087 (indicated in Table 9 by Eigenvalue, which is the square of the canonical correlation). Thus, something less than 10 percent of the variance on this sub-scale can be attributed to the influence of the two predictor variables. Further, the canonical correlation of

.295 is relatively modest; correlations of this magnitude, if statistically significant, are often viewed as important in exploratory studies, but they are seldom considered useful for predictive purposes (Borg & Gall, p. 359). This is particularly true when sample sizes are relatively small, such as those consisting of 100 or fewer cases; but in the present instance, the correlation was derived from the analysis of 1261 complete scores for the variable ORPLN, plus 119 mean scores for cases with missing data (see Appendix F). Also tending to balance the relatively low level of correlation is the statistical significance of the relationship: the .001 level of significance reported for this correlation indicates that such a result is likely to occur by chance only once in 1,000 trials, which is an extremely high level of statistical significance, far in excess of the .01 level, which most researchers regard as the level of "practical certainty" (Kerlinger, p. 170).

Further examination of the correlation matrix in Appendix F indicates that there is a moderate but statistically significant negative correlation between the predictor variables CRHR and PROPRP ($r = -.296$, $N = 1380$, $p = .001$). In addition, each is significantly correlated with the criterion variable ORPLN: the negative correlation between CRHR and ORPLN is $-.23$, significant at the .001 level; the correlation between PROPRP and ORPLN is $.19$, significant at the .001 level. What these correlations suggest is that the

loadings on the two predictor variables in the canonical correlation analysis might be redundant; and that the negative correlation between the two is the cause of either the strong negative loading for CRHR or the strong positive loading on PROPRP.

To determine the strength of the influence each might have on the other, partial correlations were calculated for both, eliminating the effect of the other on the correlations with ORPLN (Bruning & Kintz, p. 168; Kerlinger & Pedhazur, p. 84). With the effect of PROPRP eliminated, the correlation coefficient between CRHR and ORPLN was reduced ($r = -.19$, $N = 1380$, $p = .001$). With the effect of CRHR eliminated, the correlation between PROPRP and ORPLN was reduced ($r = .13$, $N = 1380$, $p = .001$). After computing variances for the original correlations and the partial correlations, it was found that the estimated loss of predictive power for the correlation between CRHR and ORPLN was only one percent; the estimated loss in predictive power for the correlation between PROPRP and ORPLN was only two percent.

As an additional check on the relationship between the variables CRHR and PROPRP, a t-test to determine whether or not the mean amounts of graduate-level, subject-matter preparation of educationist and academic instructors used in the study differed significantly was administered (Bruning & Kintz, pp. 9-12). The mean CRHR for educationist

instructors is 43.46, with a standard deviation of 23.73 and variance of 563.55. Mean CRHR for academic instructors is 62.26, with a standard deviation of 31.51 and variance of 993.06. The value of t was 1.84, which is not significant at the .05 level. A test of homogeneity of variance for the two instructor groups was calculated to assess the reliability of the t -test (Bruning & Kintz, pp. 107-108). This yielded an F ratio of 1.76, which is not significant at the .05 level, which means that the variances of the two instructor groups do not differ significantly, indicating that the result of the t -test is reliable.

These findings would seem to indicate that loadings in the canonical correlation analysis for the predictor variables CRHR and PROPRP were not redundant and that the significant correlation between these two and the criterion variable of ORPLN was not spurious. In other words, the influence of each of these predictor variables on the criterion variable tended to be independent of the influence of the other, despite their moderate but significant negative intercorrelation.

Summary of Findings in Relation to the Hypotheses

The relationship between the findings of the study and the hypotheses tested are summarized below.

The major hypothesis of the study, which stated that there is no relationship between student ratings of

instruction and professional teacher-training backgrounds of instructors in the university transfer area was rejected: the research results indicate that professionally-trained university transfer instructors tended to be rated higher than non-professionally trained instructors on the SIR sub-scale Course Organization and Planning. No other significant relationships between ratings on other sub-scales and professional teacher-training backgrounds of instructors were found.

The hypothesis stating that there is no relationship between student ratings of instruction and the amount of teaching experience of instructors in the university transfer area was retained: no significant relationship was found to exist between length of teaching experience and ratings on any of the SIR sub-scales.

The hypothesis which stated that there is no relationship between student ratings of instruction and the amount of graduate-level, subject-matter preparation of instructors in the university transfer area was rejected: the results of this study indicated that instructors with a greater amount of graduate-level, subject-matter preparation tended to be rated lower on the SIR sub-scale Course Organization and Planning than are those instructors with lesser amounts of such preparation.

The hypothesis stating that there is no relationship between prior college achievement, as reflected in student

GPA, of students and their ratings of instructors in the university transfer area was retained: no significant relationship was found to exist between ratings and student GPA.

Chapter 6

CONCLUSIONS

Discussion

The results of this study, at least with respect to the hypothesis that there is no relationship between professional teacher-training and student ratings of instruction, would seem partially to vindicate the views of those who have long argued that community college instructors should be professionally trained as teachers. Students do in fact appear to regard the performance of professionally-trained instructors in the university transfer area as superior to that of instructors with strictly academic backgrounds, at least in terms of the performance variable of course organization and planning.

Why the results of this study are in conflict with the findings of other investigators who found no difference in ratings given to educationist and academic instructors may perhaps be best understood in terms of differences in design. As noted earlier in discussing the findings of these other studies, their results may have been confounded because they ignored: (1) possible differences among faculty in terms of part-time versus full-time status, and (2) the possibility that occupational and university transfer students may differ in the ratings they assign the same

instructors, both within the same courses and across curriculum areas. The present study, designed to eliminate or at least minimize the influence of these factors, may therefore have yielded different results simply because the samples of instructors and students were more homogeneous than those used in other investigations.

Why Overall Ratings of professionally-trained teachers did not emerge as significant, while Course Organization and Planning did, may well have been the result of an insufficiency of data upon which meaningful correlations for Overall Ratings could be computed; as noted above, with 915 missing values reported for item 37 on this sub-scale, scores for this factor were almost certainly artificially depressed. This deficiency could (and should) be remedied by redesigning the items on this sub-scale to eliminate references to specific instructional procedures.

In interpreting and evaluating the relationship between professional teacher training and the sub-scale Course Organization and Planning, the kinds of items upon which the scale is based must be considered. These are given below (see also Appendix C).

1. The instructor's objectives for the course have been made clear.
2. There was considerable agreement between the announced course objectives and what was actually taught.
3. The instructor used class time well.

12. The instructor was well-prepared for each class.
13. The instructor told students how they would be evaluated in the course.
14. The instructor summarized or emphasized major points in lectures or discussions.
20. In my opinion, the instructor has accomplished (is accomplishing) his or her objectives for the course.

Inspection of these items reveals two important features of this sub-scale: (1) it is rather generalized in its orientation, suggesting that it might be usefully employed as a reasonable substitute for the sub-scale Overall Ratings, and (2) it focuses exclusively on ratings of what might be termed the major procedural dimensions of the instructional process: clarity of goals, clarity of exposition, congruence of objectives and evaluative procedures, and efficient and effective use of class time. The significance of this is that these are skills of the kind one might reasonably expect to be taught and developed in courses dealing with teaching methods, curriculum construction and design, and educational tests and measurements. Further, they appear to be precisely the kinds of skills the development of which is a major goal of supervised practice-teaching programs.

Viewed in relation to the findings of this study, all of this would seem to suggest that students are capable of making fairly sophisticated judgments regarding the

formal, in-class, professional competence of their instructors. What this appears to mean is that, while the specific abilities and skills associated with satisfactory instructional performance may not be arcane mysteries guarded by a guild of professionally-trained teachers, professional training does make a difference in instructional performance which students can detect.

The implications of this finding for in-service and preservice training programs for community college instructors are fairly obvious: special attention should be given to the development of graduate courses and in-service programs designed to remedy the deficiencies of academic instructors in areas relating directly to in-class instructional practices. These courses and programs should probably be focused on practical problems relating to the broad areas of curriculum and instructional design, methods of evaluation, and the formulation and writing of clear instructional goals and objectives. At the same time, given the need to allocate institutional and individual resources efficiently, less emphasis might be given to programs and courses dealing with relatively abstract or philosophical issues in community college education. While doubtless valuable in their own right, these would seem to have less immediate and practical utility for the instructor in the classroom. A truly comprehensive program, whether at the graduate school level or conducted within the context of

an in-house, in-service program, should, of course, include both practice-oriented and issue-oriented instruction and training. Such a program would allow the instructor new to teaching to

narrow down the details of the profession. Whereas he may have made his initial choice on the basis of fairly vague notions, the program makes him confront the specifics of his work. . . . But most important, it allows him to test resources and weigh liabilities, to amplify his talents and question his directions (Cohen & Brawer, 1972, p. 147).

If institutions conducting training programs for community college instructors were to maintain this as an ideal, while simultaneously giving some greater priority to the development of practical instructional skills, it would be reasonable to speculate, in view of the findings of this study, that their programs might have some measurable impact on the quality of instructional performance.

While the relationship between professional preparation and ratings on the sub-scale of Course Organization and Planning seems fairly clear and relatively easy to interpret, the findings with respect to the relationship between the amount of graduate-level, subject-matter preparation and the ability to plan and organize courses are somewhat problematical. Superficially, it appears that the more an instructor knows about the subject being taught, the less capable he or she is of organizing, planning, and

conducting a course--at least in terms that students can appreciate. Moreover, this seems to be true even for instructors with professional teacher-training backgrounds. Thus, those who have maintained that academic specialism is a liability for those teaching at the community college level would seem to have been correct in their judgment.

The rationale behind this bias against academic specialism is reasonably clear, and it even makes a limited kind of sense: those with substantial expertise in an area presumably have difficulty transmitting or otherwise sharing their knowledge with students, possibly because they are so engrossed in the subject that they have difficulty translating it into terms that are intelligible to the uninitiated. It is even occasionally suggested that such specialized instructors are fundamentally indifferent to the needs of their less able students (see above, pp. 60-61). While all of this may be true, and the findings of this study seem to provide some limited support for these views, it is important to note that it is doubtful that there is any intrinsic negative correlation between knowledge per se and instructional inadequacy: a more realistic interpretation is that programs of advanced instruction in academic disciplines, at least as presently conceived, tend to concentrate so exclusively on the subject matter itself that problems relating to teaching, particularly at lower levels, are virtually ignored. Therefore, as the present study

seems to indicate, even professionally-trained instructors, in pursuing specialized advanced studies in academic disciplines, tend to become increasingly preoccupied with problems which do not relate to instruction, apparently with unfortunate consequences for their performance as teachers.

It would seem that the problem is complex, and therefore unlikely to admit of easy solution. Simply including as part of their preparation traditional programs of teacher-training for graduate students planning to teach in community colleges might be satisfactory so long as students discontinued their academic studies at approximately the level of the master's degree. However, for individuals who come to the community college with preparation beyond this level, or for those who wish to pursue additional advanced study in a discipline, professional training alone, at least as presently conceived, would seem to be somewhat inadequate. What may be needed to deal with this aspect of the problem, at both the preservice and the in-service levels, is something like, for want of better analogies, programs in sensitivity training or consciousness-raising. These might be aimed specifically at helping instructors with unusually sophisticated backgrounds in their teaching disciplines become more aware of and sensitive to the needs and limitations of students in the community college, with special reference to the teaching areas in question.

Summary of Discussion

While the results of this study regarding the relationships between student ratings on the SIR sub-scale of Course Organization and Planning and the two predictor variables of professional preparation and subject-matter preparation are significant, the relatively moderate canonical correlation found and the small amount of variance in ratings which can be accounted for (less than 10 percent), suggest that results must be viewed with considerable caution. Individual and group means of instructors in both categories, for example, do not differ greatly (see Appendix G). However, the results do provide some limited empirical basis for arguing that (1) professionally-trained community college instructors in the university transfer area are more highly rated by students than are instructors not so trained, and (2) a great amount of subject-matter graduate training, possibly anything much beyond the master's degree level, tends to have a negative effect on the instructional performance of both educationist and academic instructors.

Recommendations for Further Research

1. Considering the potential importance of the findings of this study, it is recommended that it be replicated, preferably on a larger scale using larger samples of both instructors and students. Prior to this, however, the

SIR sub-scale for Overall Ratings should be revised and tested for reliability and validity; in its present form, replication would very probably result in large numbers of students failing to report complete scores on the sub-scale, rendering data for this factor useless for most analytic and interpretive purposes.

2. It is also recommended that samples of students and faculty be selected with even greater regard for the problem of homogeneity. While care was taken in the present study to ensure that instructors selected were full-time teachers and that all courses and students were drawn from the university transfer area, further research would probably be greatly strengthened by the systematic elimination of as many potential sources of variance as possible. It would be desirable, for example, to replicate the present study by focusing exclusively on instructors and students from a single university transfer curriculum area, such as English or anthropology.

3. Using the same basic design as was employed in this study, it might also be useful to examine and compare the performance ratings of full-time and part-time instructors, as surveys indicate that these two groups differ on a number of dimensions relating to instructional practices and procedures.

4. Another question that might profitably be examined is that of how occupational and university transfer

students might differ in their perceptions of the same instructor. Since many instructors teach courses in both occupational and transfer areas, it is quite possible that their instructional performance might be evaluated quite differently by students from different program areas.

5. Because Course Organization and Planning, which appears to focus on the specifics of formal teaching skill, is the sub-scale which is significantly correlated with the instructor characteristics of subject-matter credit hours and professional preparation, development of a rating instrument designed to evaluate only formal teaching techniques and skills deserves consideration. A possible approach might be that of identifying those teaching competencies customarily taught in teacher preparation programs, such as those in the areas of methods and materials and tests and measurements, and then incorporating these elements into a rating instrument. Using such an instrument, the present study could be replicated to determine whether or not relationships between professional preparation and student ratings are stronger or weaker than those reported in this study. Research of this kind could provide important information about the relative importance of various sub-scales on instruments such as the SIR, which does not presently assign weights to sub-scale factors. It might also yield results useful to those planning preservice and in-service training programs for community college

instructors, as it could indicate strengths and weaknesses in existing programs.

6. In view of the moderate correlations reported in the present study, it is important that research be done to assess the practical importance of these findings. This could be done by replicating the study, preferably using larger samples, and then measuring student achievement in classes conducted by the various categories of instructors. It might be, for example, that differences in student learning or achievement in different instructional contexts are more or less pronounced than the present findings indicate. Research of this type, whatever the findings, could have important practical consequences for instructor training programs.

7. There is also a need for research to determine whether or not there are any differences between student ratings of instructors with traditional secondary teacher preparation backgrounds and those whose professional preparation has been solely in graduate programs designed specifically for community college instructors. To secure sufficiently large samples of instructors who have completed only community college preparation programs at the graduate level, research of this type would probably have to be conducted on a multi-state or national level.

8. It is also recommended that research be conducted to identify alternatives to the present practice of

encouraging community college instructors in the university transfer area to take additional, traditionally-oriented graduate-level, subject-matter course work beyond the master's degree level. Consideration might be given, for example, to having subject-matter departments in universities which have community college preparation programs design experimental courses aimed specifically at meeting the continuing education needs of community college instructors in their teaching fields. As it appears that advanced course-work in increasingly specialized areas of knowledge (the traditional pattern for post-master's degree work), seems to have a negative effect on instructional performance, subject-matter course-work at the post-master's degree level for community college instructors should perhaps be broadly conceived, aimed at up-dating general knowledge in the discipline. If such courses were developed, longitudinal studies might then be conducted to determine whether or not instructors find such preparation more beneficial in their teaching than more traditional course-work.

9. Finally, the question of subject-matter preparation warrants special treatment. Considering the implications of the findings of the present study in this regard, it is important that the issue receive careful consideration. A possible strategy might be that of identifying a large sample of educationist instructors in one curriculum area and then stratifying it in terms of two categories,

with one sub-group consisting of instructors with less than the equivalent of a master's degree in the subject-field, the other consisting of those with more than the equivalent of a master's degree in the subject-field. The results of such an investigation could be expected to delineate with some precision the nature of the relationship between subject-matter preparation and professional training. It might also be useful to employ a similar approach using a sample of academic instructors.

Chapter 7

SUMMARY

The Problem

The major problem examined in this study was that of determining whether or not there is any relationship between student ratings of instruction in the community college university transfer area and the professional education backgrounds of instructors. In addition, several other factors which may influence ratings and which might interact with instructor professional education background were considered. These included: (1) student grade point average, (2) length of teaching experience of instructors, and (3) amount of subject-matter graduate-level preparation of instructors.

To secure student ratings, instructors administered in their university transfer classes the Student Instructional Report (SIR), a rating instrument developed by the Educational Testing Service of Princeton, New Jersey. It is designed to provide a means whereby college students can rate the quality of instruction they have received in particular courses.

The Hypotheses

The hypotheses tested in this study included the following:

1. There is no relationship between student ratings of instruction and professional teacher-training backgrounds of instructors in the university transfer area.
2. There is no relationship between student ratings of instruction and the amount of teaching experience of instructors in the university transfer area.
3. There is no relationship between student ratings of instruction and the amount of graduate-level, subject-matter preparation of instructors in the university transfer area.
4. There is no relationship between prior college achievement, as reflected in student GPA, of students and their ratings of instructors in the university transfer area.

The Literature

Chapter two of this study consisted of a review of the literature relating to the problems treated in the hypotheses.

The first major section was devoted to an

examination of the literature relating to the formal preparation and training needs of community college university transfer instructors. It was concluded that, while numerous surveys indicate that many of those involved with the community college believe that instructors should be professionally prepared as teachers, no empirical studies were utilized to provide support for the recommendation that community college instructors would be more effective as teachers if professionally trained. In addition, it was noted that while a number of authorities advocated possession of the equivalent of a subject-matter master's degree for those teaching in the university transfer area, and that some college administrators and students believed that the amount of subject-matter preparation is an important indicator of satisfactory instructor performance, there is little or no evidence to support these views.

In the second section of the review, studies dealing with the evaluation of community college instructors were examined. It was concluded that the results of these investigations are sufficiently ambiguous and difficult to interpret as to make them an inadequate basis for concluding that professional preparation of community college instructors is unnecessary. At the same time, they provide an insufficient basis for determining the nature of the relationship between length of teaching experience and student ratings of instructional performance.

In the final section, it was observed that research suggests that there may be a relationship between prior student achievement and student ratings, and that instructor attributes, such as professional training, amount of graduate-level, subject-matter preparation, and length of teaching experience, may affect this relationship.

It was generally concluded that there is a need for additional research dealing with the question of relationships between student ratings and (1) professional training of community college instructors, (2) amount of subject-matter preparation of instructors, (3) length of teaching experience of instructors, and (4) prior student achievement.

Instrumentation

Chapter three consisted of a review of literature relating to the validity and reliability of student rating instruments in general and of the Student Instructional Report (SIR) in particular.

Research on the SIR indicates that, in terms of internal consistency and stability, it is a reliable rating instrument. Similar research on other rating instruments provides additional support for the view that professionally designed devices of this type tend, overall, to exhibit relatively high degrees of reliability, both in terms of

stability and internal consistency. In this regard, then, SIR seemed an appropriate instrument for the purposes of this study.

With respect to the question of validity, it appears that much of the research on student rating instruments indicates that such instruments, if well-designed, have validity in terms of the external criterion of student achievement. Studies dealing with SIR as well as with similar instruments provide significant support for the view that student ratings of instructor performance are valid predictors of student achievement. It was therefore concluded that the validity of SIR is sufficiently well-established to warrant its use for research purposes.

Sampling Procedures

Chapter four of the study explained the sampling procedures employed in the investigation.

Two populations were utilized, one consisting of students enrolled in university transfer courses in the three Oregon community colleges participating in the study, the other consisting of their instructors in these courses.

The SIR was administered to all students enrolled in the university transfer courses taught by the instructors selected. The SIR was completed by 1,380 students identified as being enrolled primarily in university transfer programs, ratings by occupational students taking these

courses being excluded in order to insure homogeneity of the student population.

The population of full-time instructors for the study was drawn from those teaching at least 50 percent of the time in the university transfer area. After completion of a preliminary survey which identified the professional teacher-training backgrounds of instructors, those with such backgrounds were classified as educationists, those lacking professional preparation were classified as academics. Random samples of 15 instructors were drawn from each of these two classifications for inclusion in the study group.

The Variables

Chapter four also identified the specific variables which were used in testing the hypotheses.

Independent, or predictor, variables in this study were (1) professional teacher training, or lack thereof, treated as a dichotomous variable, (2) amount of teaching experience, (3) amount of subject-matter, graduate-level preparation, and (4) student grade point average (GPA). The latter three variables were all treated as continuous variables.

Dependent, or criterion, variables consisted of the general and sub-scale factors on the SIR. These are (1) Overall Rating, (2) Faculty-Student Interaction, (3) Course

Organization and Planning, (4) Communications, (5) Textbooks and Readings, (6) Course Difficulty and Workload, and (7) Examinations. Scores for individual items within each sub-scale were based on equal-interval scales, and sub-scale ratings were treated as continuous variables.

The Statistic

Chapter four described the statistic utilized in the analysis of the data.

Canonical correlation analysis, the statistic employed in this study, is intended for use in research involving both two or more independent and two or more dependent variables. It is also the statistic of choice where independent variables are both continuous and categorical.

Critical Alpha level of Chi square (the test of statistical significance used in the computer program for canonical correlation employed in this study), was set at the .05 level. This Alpha level was chosen because of the relatively small samples of instructors used in the study: designating a lower significance level might yield results more open to challenge or dispute, while a higher level, such as .01, was considered unnecessarily high.

Statistical analyses of the data in this study were performed using the CYBER 70, model 73, computer at the

Milne Computer Center at Oregon State University. Statistical programs used were those described in the SPSS Manual (Nie, et al., 1975). These programs are periodically updated; the most recent version is described in SPSS-6000 Release 8.0 Update Manual (Hohlen, 1979). The revised version was used in this study.

Findings

Chapter five reported the findings of the statistical analyses of the data.

Only one canonical correlation was found to be statistically significant, with a canonical correlation of .295, significant at the .001 level.

Inspection of the coefficients of correlation reported for the criterion, or dependent, variables indicated that the loading for one, Course Organization and Planning, was substantially greater than loadings on all other dependent variables. Loading on this variable was .712. Among the predictor, or independent variables, only two emerged with substantial loadings: Credit Hours of Graduate-Level, Subject-Matter Preparation, with a negative loading of -.653, and Professional Teacher Training, with a loading of .612.

What these results indicate is that professionally prepared instructors (educationists), tend to receive higher

ratings by students on the SIR sub-scale of Course Organization and Planning than do their academic colleagues. At the same time, instructors with greater amounts of graduate-level, subject-matter preparation tend to receive lower ratings on Course Organization and Planning than do instructors with lesser amounts of such preparation.

In inspecting the Pearson product-moment correlation matrix generated for the data, it was observed that the two independent variables, professional preparation and subject-matter preparation, were significantly correlated, with a negative correlation of $-.296$, significant at the $.001$ level. Both were also significantly correlated with the dependent variable of Course Organization and Planning. To determine the strength of the influence each might have on the other, partial correlations were calculated for both, eliminating the effect of the other on the correlations with Course Organization and Planning.

Results of this analysis indicated that loadings in the canonical correlation analysis for the two independent variables were not redundant, and that the significant correlation between these two and the dependent variable of Course Organization and Planning was not spurious. In other words, the influence of each of these predictor variables on the criterion variable tended to be independent of the influence of the other, despite their moderate but significant negative intercorrelation.

The Findings and the Hypotheses

The major hypothesis of the study, which stated that there is no relationship between student ratings of instruction and professional teacher-training backgrounds of instructors in the university transfer area was rejected: the research results indicate that educationist instructors tend to be rated higher than academics on the SIR sub-scale of Course Organization and Planning. No other significant relationships between ratings on other sub-scales and professional teacher-training backgrounds of instructors were found.

The hypothesis stating that there is no relationship between student ratings of instruction and the amount of teaching experience of instructors in the university transfer area was retained: no significant relationship was found to exist between length of teaching experience and ratings on any of the SIR sub-scales.

The hypothesis which stated that there is no relationship between student ratings of instruction and the amount of graduate-level, subject-matter preparation of instructors in the university transfer area was rejected: the results of this study indicate that instructors with a greater amount of graduate-level, subject-matter preparation tend to be rated lower on the SIR sub-scale Course

Organization and Planning than are those instructors with lesser amounts of such preparation.

The hypothesis stating that there is no relationship between prior college achievement, as reflected in student GPA, of students and their ratings of instructors in the university transfer area was retained: no significant relationship was found to exist between ratings and student GPA.

Conclusions

The results of this study would seem to provide partial vindication of the views of those who argue that community college instructors should be professionally trained as teachers. Students do appear to regard the performance of professionally-trained instructors in the university transfer area as superior to that of instructors with strictly academic backgrounds.

Because, however, the only significant difference found was in the area of Course Organization and Planning, the implications for in-service and preservice training programs are fairly obvious; greater attention should be given to the development of programs designed to remedy the deficiencies of academic instructors in areas relating directly to in-class instructional practices. These programs should probably be focused on practical problems relating to the broad areas of curriculum and instructional

design, methods of evaluation, and the formulation and writing of clear instructional goals and objectives.

The findings with respect to the relationship between the amount of graduate-level, subject-matter preparation and the ability to plan and organize courses are somewhat problematical. Superficially, it appears that the more an instructor knows about the subject being taught, the less capable he or she is of organizing and planning a course in terms that students can appreciate. Moreover, this seems to be true even for instructors with professional-teacher-training backgrounds. What may be needed to deal with this problem, at both the preservice and the in-service levels, are programs in consciousness-raising or sensitivity training. These might be aimed at helping instructors with unusually sophisticated backgrounds in their teaching areas become more aware of and sensitive to the needs and limitations of students in the community college, with special reference to the teaching areas in question.

Recommendations for Further Research

Assuming that the design used in conducting this research was adequate, several problems merit investigation: (1) examining and comparing the performance ratings of full-time and part-time instructors, (2) comparing how occupational and transfer students might differ in their

perceptions of the same instructors, (3) designing a rating instrument focused more narrowly on the specifics of formal teaching skill, such as are identified by the SIR sub-scale of Course Organization and Planning, (4) determining whether or not student achievement, or gains in learning, is significantly different in the several instructional settings identified by the present study, and (5) comparing educationist and academic instructors within a single teaching discipline.

Considering, however, the potential importance of the findings of the present study, it was especially recommended that it be replicated, preferably on a larger scale using larger samples of both instructors and students.

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APPENDICES

APPENDIX A

STUDENT INSTRUCTIONAL REPORT
(Preliminary Form)

This questionnaire gives you the anonymous opportunity to express your perceptions of this course and the way it has been taught. There is no need to identify yourself. Please give frank and thoughtful responses to each item. Since this is a preliminary form, feel free to criticize the questions asked as well as suggest additional questions. Space is provided at the end of the questionnaire for these comments.

Name of Course _____	Course Dept & Class No. (5 digits) _____
Name of Instructor _____	Section Number _____

Directions: Circle the Number that represents the response closest to your opinion. Use any pen or pencil you have handy. A four-point scale has been used for most of the items as follows:

- NA (0) - Not Applicable or don't know. The statement does not apply to this course or instructor, or you simply are not able to give a knowledgeable response.
- SA or DT (1) - Strongly Agree or Definitely True. You strongly agree with the statement as it applies to this course or instructor; it is true all or almost all of the time.
- A or GT (2) - Agree or Generally True. You agree more than disagree with the statement as it applies to this course or instructor; it is true a majority of the time.
- D or GNT (3) - Disagree or Generally Not True. You disagree more than agree with the statement as it applies to this course or instructor; it is not true a majority of the time.
- SD or DNT (4) - Strongly Disagree or Definitely Not True. You strongly disagree with the statement as it applies to this course or instructor; it is not true all or almost all of the time.

In addition to the above four-point scale, a few items use a six-point scale in which 1=Excellent, 2 and 3=Good (with 2 better than 3), 4 and 5=Fair (with 4 better than 5), and 6=Poor. Circle one number for your response.

Course Organization and Content

	SA or DT	A or GT	D or GNT	SD or DNT
1. The instructor's objectives for the course were made clear at the outset.....0	1	2	3	4
2. Students had an adequate say in how the course was run, e.g., topics covered, amount of discussion, etc.....0	1	2	3	4
3. There was an overall plan for the course.....0	1	2	3	4
4. Topics were presented in a logical sequence.....0	1	2	3	4
5. The instructor made clear what was expected of students.....0	1	2	3	4
6. The instructor stressed what he thought students should learn from the course.....0	1	2	3	4
7. The instructor used a variety of methods to present material.....0	1	2	3	4
8. The instructor stressed specific details of the subject matter.....0	1	2	3	4
9. The instructor presented both sides of an issue or contrasted opposing points of view.....0	1	2	3	4
10. The course often repeated a good deal of the material I've had in other courses in secondary school or college.....0	1	2	3	4
11. The instructor used class time well--did not waste time on trivial matters or non-course material.....0	1	2	3	4
12. Visual aids (charts, movies, etc.) or class demonstrations were used effectively.....0	1	2	3	4
13. Regular attendance was necessary for learning the course material....0	1	2	3	4
14. The instructor stressed general concepts and theory of the subject matter.....0	1	2	3	4
15. The instructor often referred to scholarly journals or books (other than the text) in lectures or in response to questions.....0	1	2	3	4
16. The course content was up to date.....0	1	2	3	4
17. The catalog description of this course was an accurate description of its content and method.....0	1	2	3	4
18. The instructor helped make the subject interesting.....0	1	2	3	4
19. The course content included information from related fields.....0	1	2	3	4
20. The course content included presentation of controversial issues in the field.....0	1	2	3	4

Circle One Number

21. Major method of conducting the class

1. Lecture, with little or no discussion
2. Lecture and discussion combined
3. Discussion mainly
4. Lecture and laboratory
5. Laboratory
6. Other

22. Was the class size satisfactory for the method(s) of conducting the class?

1. Yes, most of the time
2. No, class was too large
3. No, class was too small
4. It didn't make any difference one way or the other

23. How appropriate for you were the instructor's particular techniques or methods of teaching used in this course?

Excellent	Good	Fair	Poor
1	2	3	4
		5	6

24. Disregarding the instructor and the way the course was taught, rate the subject matter of this course.

like very much	like fairly well	neither like nor dislike	dislike the subject	strongly dislike
1	2	3	4	5

Comments on course organization and content may be made at the end of the questionnaire.

Instructor-Student Relations

	NA	SA or DT	A or GT	D or GNT	SD or DNT
25. There was a relaxed atmosphere in the class--generally students were comfortable and at ease.....0		1	2	3	4
26. The instructor seemed to enjoy teaching the class.....0		1	2	3	4
27. The instructor appeared genuinely interested in students.....0		1	2	3	4
28. The instructor was relaxed and informal with students.....0		1	2	3	4
29. The instructor was readily available for consultation with students after class or during office hours.....0		1	2	3	4
30. The instructor often praised students for good work....0		1	2	3	4
31. The instructor seemed to know when students didn't understand the material.....0		1	2	3	4
32. The instructor encouraged students to think for themselves.....0		1	2	3	4
33. The instructor was sarcastic or belittled students.....0		1	2	3	4
34. The instructor seemed genuinely concerned with whether students learned.....0		1	2	3	4
35. The instructor praised students who answered questions correctly or who raised a good point.....0		1	2	3	4
36. The instructor was open to suggestions or criticism from students....0		1	2	3	4

Comments on Instructor-Student Relations may be made at the end of the questionnaire.

Communication

37. The instructor spoke audibly and clearly....0	1	2	3	4
38. The instructor exhibited distracting mannerisms.....0	1	2	3	4
39. The instructor wrote legibly (on blackboard, paper, etc.).....0	1	2	3	4
40. The instructor often used examples or anecdotes to make a point.....0	1	2	3	4
41. The instructor often asked thought provoking questions.....0	1	2	3	4
42. The instructor encouraged students to ask questions.....0	1	2	3	4
43. The instructor sometimes failed to answer student questions fully....0	1	2	3	4

Comments on instructor communication may be made at the end of the questionnaire.

Assignments and Evaluation

	SA	A	D	SD
	or	or	or	or
NA	DT	GT	GNT	DNT
44. The instructor informed students of the basis for evaluation..... 0	1	2	3	4
45. The instructor periodically let students know how they were doing. 0	1	2	3	4
46. Examinations reflected the important aspects of the course..... 0	1	2	3	4
47. Exams and assignments were returned promptly..... 0	1	2	3	4
48. The instructor explained mistakes made on quizzes or assignments.. 0	1	2	3	4
49. Students were expected to meet definite standards of achievement.. 0	1	2	3	4
50. Grades were assigned on the basis of how one performed relative to other students in the class..... 0	1	2	3	4
51. Exams and assignments emphasized understanding rather than memorization..... 0	1	2	3	4
52. The content of the exams has been representative of material assigned or given in class..... 0	1	2	3	4
53. The instructor has graded fairly..... 0	1	2	3	4
54. The instructor advised students of how to study for the course and exams..... 0	1	2	3	4
55. Assignments were helpful in understanding the material..... 0	1	2	3	4
56. Assignments were of reasonable length..... 0	1	2	3	4
57. In general, too little work was required..... 0	1	2	3	4
58. The instructor explained assignments clearly and completely..... 0	1	2	3	4
59. Assignments challenged me 0	1	2	3	4
60. Generally, the readings (text and others) were of the right level of difficulty--neither too difficult nor too simple..... 0	1	2	3	4
61. Assignments and outside work were appropriate to course objectives 0	1	2	3	4
62. To my knowledge, there was no cheating on exams or assignments.... 0	1	2	3	4
63. Overall, I would rate the textbook(s):				

Question	Excellent	Good	Fair	Poor
Not Applicable				
0	1	2	3	4
			5	6

64. Overall, I would rate the supplementary readings:

Question	Excellent	Good	Fair	Poor
Not Applicable				
0	1	2	3	4
			5	6

65. Overall, I would rate the written assignments:

Question	Excellent	Good	Fair	Poor
Not Applicable				
0	1	2	3	4
			5	6

66. Overall, I would rate the exams:

Question	Excellent	Good	Fair	Poor
Not Applicable				
0	1	2	3	4
			5	6

Comments on assignments and evaluation may be made at the end of the questionnaire.

Lectures

Respond to this section if class was
lecture, lecture-discussion, or lecture-
laboratory

Applicable to this course _____
Not applicable to this course _____

	NA	SA or DT	A or GT	D or GNT	SD or DNT
67. The instructor lectured in a way that made note taking easy.....	0	1	2	3	4
68. The level of difficulty of lectures was often too advanced.....	0	1	2	3	4
69. The instructor covered the material at just the right pace-- neither too fast nor too slow.....	0	1	2	3	4
70. The instructor stuck to the topic--seldom digressed for any length of time.....	0	1	2	3	4
71. The lectures were often too elementary and oversimplified.....	0	1	2	3	4
72. The instructor usually summarized main points of lectures.....	0	1	2	3	4
73. Lectures seldom covered the same material as in the textbook(s).....	0	1	2	3	4
74. Lectures were coordinated with readings and assignments.....	0	1	2	3	4

75. I would rate the general quality of the lectures:

Question	Excellent		Good		Fair		Poor
Not Applicable							
0	1	2	3	4	5	6	

Comments on lectures may be made at the end of the questionnaire.

Discussions--Seminars

Respond to this section if class was
taught as a lecture-discussion combination
or as a discussion or seminar class

Applicable to this course _____
Not applicable to this course _____

	NA	SA or DT	A or GT	D or GNT	SD or DNT
76. Most of the students were involved in the discussions.....	0	1	2	3	4
77. The instructor usually summarized the discussion at the end of the class session.....	0	1	2	3	4
78. The instructor raised challenging questions or problems for discussion.....	0	1	2	3	4
79. The discussion frequently changed to topics brought up by student questions or suggestions.....	0	1	2	3	4
80. The instructor encouraged all students to participate.....	0	1	2	3	4
81. A few students monopolized the discussions.....	0	1	2	3	4
82. Topics covered were related to each other.....	0	1	2	3	4
83. Topics covered were of interest to me.....	0	1	2	3	4
84. Discussions often helped clarify a topic.....	0	1	2	3	4
85. Class discussions were limited to topics clearly related to the subject matter.....	0	1	2	3	4
86. Discussions stimulated me to do outside reading.....	0	1	2	3	4
87. Discussions often continued after the regular class period.....	0	1	2	3	4

88. I would rate the overall value of class discussions as:

Excellent		Good		Fair		Poor
1	2	3	4	5	6	

89. I would rate the instructor's overall effectiveness in leading class discussions as:

Excellent	Good	Fair	Poor		
1	2	3	4	5	6

Comments on discussion-seminars may be made at the end of the questionnaire.

Laboratories

Respond to this section if class was
laboratory or laboratory-lecture.

Applicable to this course _____
Not applicable to this course _____

	SA	A	D	SD
	or	or	or	or
NA	DT	GT	GNT	DNT
90. There was ample opportunity to ask questions and get help in the labs.	0	1	2	3 4
91. There was opportunity to do creative and imaginative work in the labs.	0	1	2	3 4
92. Labs supplemented lectures and assignments effectively.	0	1	2	3 4
93. The instructor made procedures to be used quite clear.	0	1	2	3 4
94. Generally, the equipment used was adequate and reliable.	0	1	2	3 4
95. The labs stimulated my learning and interest.	0	1	2	3 4
96. Most of the lab work was routine.	0	1	2	3 4

97. Overall, I would rate the laboratories:

Excellent Good Fair Poor
1 2 3 4 5 6

Comments of laboratories may be made at the end of the questionnaire.

Student's Involvement, Background Information

98. Compared to other courses of equal credit, I have put more effort in this course.	0	1	2	3	4
99. Compared to other courses of equal credit, I have put less effort in this course.	0	1	2	3	4
100. The time and effort I have spent on this course has been worthwhile to me.	0	1	2	3	4
101. I have almost always been prepared for class meetings.	0	1	2	3	4
102. I have been challenged by this course.	0	1	2	3	4
103. I completed all or most of the reading assignments.	0	1	2	3	4
104. Earning a good grade has been the major reason for my efforts in this course.	0	1	2	3	4
105. My interest in the general subject areas has been stimulated by this course.	0	1	2	3	4
106. My knowledge of the subject area has been greatly increased by this course.	0	1	2	3	4

In answer to the following, please circle the appropriate number.

- | | |
|---|---|
| <p>107. Which <u>one</u> of the following best describes this course for you?</p> <p>1. Major requirement or elective within major field.</p> <p>2. Minor requirement or required elective outside major field.</p> <p>3. College requirement but not part of my major or minor field.</p> <p>4. Elective not required in any way</p> <p>5. Other</p> <p>108. Which of the following were <u>important</u> reasons for selecting this course. Select as many as you feel were important.</p> <p>1. Friend(s) recommended it.</p> <p>2. Faculty advisor's recommendation</p> <p>3. Teacher's excellent reputation.</p> <p>4. Catalogue description.</p> <p>5. It fit into my schedule.</p> <p>6. Thought I could make a good grade.</p> <p>7. Could use pass/no credit option</p> <p>8. It was required</p> <p>9. Subject was of interest</p> <p>10. Other _____</p> | <p>109. Your cumulative Grade Point Average:</p> <p>1. 3.50-4.00 5. 1.50-1.99</p> <p>2. 3.00-3.49 6. 1.00-1.49</p> <p>3. 2.50-2.99 7. Less than 1.00</p> <p>4. 2.00-2.49 8. None yet--Freshmen or Transfer</p> <p>110. Grade you expect to receive in this course.</p> <p>1. "A" 5. Fail</p> <p>2. "B" 6. P--Pass</p> <p>3. "C" 7. N--No credit</p> <p>4. "D"</p> <p>111. What is your class level?</p> <p>1. Freshman</p> <p>2. Sophomore</p> <p>3. Junior</p> <p>4. Senior</p> <p>5. Graduate</p> <p>112. Sex:</p> <p>1. Female</p> <p>2. Male</p> |
|---|---|

Comments Section

- I. In this section you may comment on the course and the instruction in this course.
Comments on Course Organization and Content:

Comments on Instructor-Student Relations:

Comments on Communications:

Comments on Assignments and Evaluation:

Comments on Lectures:

Comments on Discussions-Seminars:

Comments on Laboratories: Did you find any particular experiments or projects especially valuable? Any that were not?

Comments on Student Involvement, Background Information section:

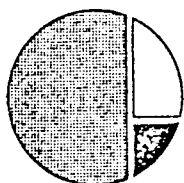
Any other general comments about the course and the instruction in this course:

- II. In this section feel free to comment on this questionnaire and to suggest additional questions. Your suggestions will be taken into account in revising this preliminary form. Use next page if necessary.

Thank you.

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APPENDIX B



STUDENT INSTRUCTIONAL REPORT

(Revised Form)

STUDENT INSTRUCTIONAL REPORT

NAME OF COURSE _____

COURSE DEPARTMENT
AND CLASS NUMBER _____

NAME OF INSTRUCTOR _____

SECTION NUMBER _____

This questionnaire gives you an opportunity to express anonymously your perceptions of this course and the way it has been taught. Each of the items in the questionnaire has been included for one or both of the following reasons: first, some items attempt to provide the instructor with useful student feedback; second, other items, more descriptive in nature, may ultimately assist students in their choice of instructors or courses.

It is not possible for a general questionnaire of this kind to elicit information specific to individual instructors or courses. At the end of this student report, therefore, space has been included for responses to additional questions that may be provided by the instructor.

If you have any comments about the Student Instructional Report or suggestions for additional items, please forward them to:

John A. Centra
Research Psychologist
Developmental Research Division
Educational Testing Service

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EDUCATIONAL TESTING SERVICE, PRINCETON, NEW JERSEY

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SECTION I

Directions: Circle the number that represents the response closest to your opinion. Use any pen or pencil you have handy.

- NA (0) = Not Applicable or don't know. The statement does not apply to this course or instructor, or you simply are not able to give a knowledgeable response.
- SA (1) = Strongly Agree. You strongly agree with the statement as it applies to this course or instructor.
- A (2) = Agree. You agree more than you disagree with the statement as it applies to this course or instructor.
- D (3) = Disagree. You disagree more than you agree with the statement as it applies to this course or instructor.
- SD (4) = Strongly Disagree. You strongly disagree with the statement as it applies to this course or instructor.

	NA	SA	A	D	SD
1. The instructor's objectives for the course have been made clear.....	0	1	2	3	4
2. I was aware of an overall plan or outline for the course.....	0	1	2	3	4
3. The instructor stressed what he thought students should learn from the course....	0	1	2	3	4
4. The instructor used class time well.....	0	1	2	3	4
5. The instructor was generally well-prepared for class.....	0	1	2	3	4
6. The instructor was readily available for consultation with students after class or during office hours.....	0	1	2	3	4
7. The instructor seemed to know when students didn't understand the material.....	0	1	2	3	4
8. Lectures were too repetitive of material in the textbook(s).....	0	1	2	3	4
9. The instructor encouraged students to think for themselves.....	0	1	2	3	4
10. The instructor seemed genuinely concerned about whether students learned and was actively helpful to students.....	0	1	2	3	4
11. The instructor used examples or illustrations to help clarify the material.....	0	1	2	3	4
12. The instructor made helpful comments on papers or exams.....	0	1	2	3	4
13. The instructor raised challenging questions or problems for discussion.....	0	1	2	3	4
14. The instructor was open to questions or comments from students.....	0	1	2	3	4
15. The instructor informed students how they would be evaluated in the course.....	0	1	2	3	4
16. The instructor summarized or emphasized major points of lectures or discussions..	0	1	2	3	4
17. The catalog accurately describes the contents and method of this course.....	0	1	2	3	4
18. My interest in the subject area has been stimulated by this course.....	0	1	2	3	4
19. I have been challenged by this course.....	0	1	2	3	4
<u>Course Laboratories -- Respond if applicable.</u>					
20. There was ample opportunity to ask questions and get help in the labs.....	0	1	2	3	4
21. The labs stimulated my learning and interest.....	0	1	2	3	4

SECTION II. Overall Ratings.

Directions: The responses to the items in this section are on a five point scale in which::

- 1 = Excellent
- 2 = Good
- 3 = Satisfactory
- 4 = Fair
- 5 = Poor
- 0 = Question not applicable: don't know, or there were none.

Circle one response number for each question.

	Question not applicable	Excellent	Good	Satis- factory	Fair	Poor
22. Overall, I would rate the textbook(s).....	0	1	2	3	4	5
23. Overall, I would rate the supplementary readings.....	0	1	2	3	4	5
24. Overall, I would rate the exams.....	0	1	2	3	4	5
25. I would rate the general quality of the lectures.....	0	1	2	3	4	5
26. I would rate the overall value of class discussions.....	0	1	2	3	4	5
27. Overall, I would rate the laboratories.....	0	1	2	3	4	5
28. Compared to other instructors you have had (secondary school and college), how effective has the instructor been in this course? (Circle one response number.)						
<div style="display: flex; justify-content: space-around; text-align: center;"> <div>One of the most effective (among the top 10%) 1</div> <div>More effective than most (among the top 30%) 2</div> <div>About average 3</div> <div>Not as effective as most (in the lowest 30%) 4</div> <div>One of the least effective (in the lowest 10%) 5</div> </div>						

SECTION III.

Directions: Circle one response number for each question.

- | | |
|---|--|
| <p>29. For my preparation and ability, the level of difficulty of this course was:</p> <ul style="list-style-type: none"> 1 Very elementary 2 Somewhat elementary 3 About right 4 Somewhat difficult 5 Very difficult <p>30. The work load for this course in relation to other courses of equal credit was:</p> <ul style="list-style-type: none"> 1 Much lighter 2 Lighter 3 Average 4 Heavier 5 Much heavier | <p>31. For me, the pace at which the instructor covered the material during the term was:</p> <ul style="list-style-type: none"> 1 Very slow 2 Somewhat slow 3 Just about right 4 Somewhat fast 5 Very fast <p>32. The major method of conducting the class was:</p> <ul style="list-style-type: none"> 1 Lecture, with little or no discussion 2 Lecture and discussion combined 3 Discussion mainly 4 Lecture and laboratory 5 Laboratory 6 Other _____ |
|---|--|

33. Was the class size satisfactory for the method(s) of conducting the class?

- 1 Yes, most of the time
- 2 No, class was too large
- 3 No, class was too small
- 4 It didn't make any difference one way or the other

34. Which one of the following best describes this course for you?

- 1 Major requirement or elective within major field
- 2 Minor requirement or required elective outside major field
- 3 College requirement but not part of my major or minor field
- 4 Elective not required in any way
- 5 Other

35. Which one of the following was your most important reason for selecting this course?

- 1 Friend(s) recommended it
- 2 Faculty advisor's recommendation
- 3 Teacher's excellent reputation
- 4 Thought I could make a good grade
- 5 Could use pass/no credit option
- 6 It was required
- 7 Subject was of interest
- 8 Other _____

36. Your cumulative grade-point average:

- | | |
|-------------|----------------------------------|
| 1 3.50-4.00 | 5 1.50-1.99 |
| 2 3.00-3.49 | 6 1.00-1.49 |
| 3 2.50-2.99 | 7 Less than 1.00 |
| 4 2.00-2.49 | 8 None yet--freshmen or transfer |

37. Grade you expect to receive in this course:

- | | |
|-------|----------------|
| 1 "A" | 5 Fail |
| 2 "B" | 6 P--Pass |
| 3 "C" | 7 N--No credit |
| 4 "D" | |

38. What is your class level?

- 1 Freshman
- 2 Sophomore
- 3 Junior
- 4 Senior
- 5 Graduate

39. Sex: (for research purposes)

- 1 Female
- 2 Male

40. Approximately how long did it take you to answer this questionnaire up to this point?

- 1 Less than 10 minutes
- 2 Between 10 and 15 minutes
- 3 Between 15 and 20 minutes
- 4 Over 20 minutes

SECTION IV. Items 41-50

Circle one response for each question.

If the instructor provided supplementary questions and response options, use this section for responding.

Not applicable, or
don't know

41.	0	1	2	3	4	5	6	7	8	9
42.	0	1	2	3	4	5	6	7	8	9
43.	0	1	2	3	4	5	6	7	8	9
44.	0	1	2	3	4	5	6	7	8	9
45.	0	1	2	3	4	5	6	7	8	9
46.	0	1	2	3	4	5	6	7	8	9
47.	0	1	2	3	4	5	6	7	8	9
48.	0	1	2	3	4	5	6	7	8	9
49.	0	1	2	3	4	5	6	7	8	9
50.	0	1	2	3	4	5	6	7	8	9

SECTION V.

Students' Comments Section (please give to the instructor)

If you would like to make additional comments about the course or instruction, use a separate sheet of paper. You might elaborate on the particular aspects you liked most as well as those you liked least. Also, how can the course or the way it was taught be improved?

Printed responses may help maintain anonymity.

APPENDIX C



STUDENT INSTRUCTIONAL REPORT

INSTITUTIONAL RESEARCH PROGRAM FOR HIGHER EDUCATION

This questionnaire gives you an opportunity to express anonymously your views of this course and the way it has been taught. Indicate the response closest to your view by blackening the appropriate oval. Use a soft lead pencil (preferably No. 2) for all responses to the questionnaire. Do not use an ink or ball point pen.

ETS Report Number

--	--	--	--	--	--

SECTION I Items 1-20. Blacken one response number for each question.

- NA (0) = Not Applicable or don't know. The statement does not apply to this course or instructor, or you simply are not able to give a knowledgeable response.
- SA (1) = Strongly Agree. You strongly agree with the statement as it applies to this course or instructor.
- A (2) = Agree. You agree more than you disagree with the statement as it applies to this course or instructor.
- D (3) = Disagree. You disagree more than you agree with the statement as it applies to this course or instructor.
- SD (4) = Strongly Disagree. You strongly disagree with the statement as it applies to this course or instructor.

	NA	SA	A	D	SD
1. The instructor's objectives for the course have been made clear.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. There was considerable agreement between the announced objectives of the course and what was actually taught.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. The instructor used class time well.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. The instructor was readily available for consultation with students.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. The instructor seemed to know when students didn't understand the material.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Lectures were too repetitive of what was in the textbook(s).....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. The instructor encouraged students to think for themselves.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. The instructor seemed genuinely concerned with students' progress and was actively helpful.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. The instructor made helpful comments on papers or exams.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. The instructor raised challenging questions or problems for discussion.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. In this class I felt free to ask questions or express my opinions.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. The instructor was well-prepared for each class.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. The instructor told students how they would be evaluated in the course.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. The instructor summarized or emphasized major points in lectures or discussions.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. My interest in the subject area has been stimulated by this course.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. The scope of the course has been too limited; not enough material has been covered.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Examinations reflected the important aspects of the course.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. I have been putting a good deal of effort into this course.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. The instructor was open to other viewpoints.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. In my opinion, the instructor has accomplished (is accomplishing) his objectives for the course.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

SECTION II Items 21-31. Blacken one response number for each question.

- | | |
|---|---|
| <p>21. For my preparation and ability, the level of difficulty of this course was:</p> <p><input type="radio"/> Very elementary <input type="radio"/> Somewhat difficult</p> <p><input type="radio"/> Somewhat elementary <input type="radio"/> Very difficult</p> <p><input type="radio"/> About right</p> | <p>23. For me, the pace at which the instructor covered the material during the term was:</p> <p><input type="radio"/> Very slow <input type="radio"/> Somewhat fast</p> <p><input type="radio"/> Somewhat slow <input type="radio"/> Very fast</p> <p><input type="radio"/> Just about right</p> |
| <p>22. The work load for this course in relation to other courses of equal credit was:</p> <p><input type="radio"/> Much lighter <input type="radio"/> Heavier</p> <p><input type="radio"/> Lighter <input type="radio"/> Much heavier</p> <p><input type="radio"/> About the same</p> | <p>24. To what extent did the instructor use examples or illustrations to help clarify the material?</p> <p><input type="radio"/> Frequently <input type="radio"/> Seldom</p> <p><input type="radio"/> Occasionally <input type="radio"/> Never</p> |

<p>25. Was class size satisfactory for the method of conducting the class?</p> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> Yes, most of the time <input type="radio"/> No, class was too small </div> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> No, class was too large <input type="radio"/> It didn't make any difference one way or the other </div>	<p>28. What grade do you expect to receive in this course?</p> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> A <input type="radio"/> Fail </div> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> B <input type="radio"/> Pass </div> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> C <input type="radio"/> No credit </div> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> D <input type="radio"/> Other </div>																																																								
<p>26. Which one of the following best describes this course for you?</p> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> Major requirement or elective within major field <input type="radio"/> College requirement but not part of my major or minor field </div> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> Minor requirement or required elective outside major field <input type="radio"/> Elective not required in any way </div> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> Other </div>	<p>29. What is your approximate cumulative grade-point average?</p> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> 3.50-4.00 <input type="radio"/> 1.00-1.49 </div> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> 3.00-3.49 <input type="radio"/> Less than 1.00 </div> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> 2.50-2.99 <input type="radio"/> None yet--freshmen or transfer </div> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> 2.00-2.49 </div> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> 1.50-1.99 </div>																																																								
<p>27. Which one of the following was your most important reason for selecting this course?</p> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> Friend(s) recommended it <input type="radio"/> Faculty advisor's recommendation </div> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> Teacher's excellent reputation <input type="radio"/> Thought I could make a good grade </div> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> Could use pass/no credit option <input type="radio"/> It was required </div> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> Subject was of interest <input type="radio"/> Other </div>	<p>30. What is your class level?</p> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> Freshman <input type="radio"/> Senior </div> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> Sophomore <input type="radio"/> Graduate </div> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> Junior <input type="radio"/> Other </div>																																																								
<p>31. Sex:</p> <div style="display: flex; justify-content: space-between;"> <input type="radio"/> Female <input type="radio"/> Male </div>																																																									
<p>SECTION III Items 32-39. Blacken one response number for each question.</p>																																																									
<table border="0" style="width: 100%;"> <thead> <tr> <th></th> <th style="text-align: center;"><i>Not applicable, don't know or there were none.</i></th> <th style="text-align: center;"><i>Excellent</i></th> <th style="text-align: center;"><i>Good</i></th> <th style="text-align: center;"><i>Satisfactory</i></th> <th style="text-align: center;"><i>Fair</i></th> <th style="text-align: center;"><i>Poor</i></th> </tr> </thead> <tbody> <tr> <td>32. Overall, I would rate the textbook(s).....</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>33. Overall, I would rate the supplementary readings.....</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>34. Overall, I would rate the quality of the exams.....</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>35. I would rate the general quality of the lectures.....</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>36. I would rate the overall value of class discussions.....</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>37. Overall, I would rate the laboratories.....</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>38. I would rate the overall value of this course to me as.....</td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> <td style="text-align: center;"><input type="radio"/></td> </tr> </tbody> </table>			<i>Not applicable, don't know or there were none.</i>	<i>Excellent</i>	<i>Good</i>	<i>Satisfactory</i>	<i>Fair</i>	<i>Poor</i>	32. Overall, I would rate the textbook(s).....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	33. Overall, I would rate the supplementary readings.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	34. Overall, I would rate the quality of the exams.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	35. I would rate the general quality of the lectures.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	36. I would rate the overall value of class discussions.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	37. Overall, I would rate the laboratories.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	38. I would rate the overall value of this course to me as.....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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<p>39. Compared to other instructors you have had (secondary school and college), how effective has the instructor been in this course? (Blacken one response number.)</p> <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: center;">One of the most effective (among the top 10%) <input type="radio"/></th> <th style="text-align: center;">More effective than most (among the top 30%) <input type="radio"/></th> <th style="text-align: center;">About average <input type="radio"/></th> <th style="text-align: center;">Not as effective as most (in the lowest 30%) <input type="radio"/></th> <th style="text-align: center;">One of the least effective (in the lowest 10%) <input type="radio"/></th> </tr> </thead> </table>		One of the most effective (among the top 10%) <input type="radio"/>	More effective than most (among the top 30%) <input type="radio"/>	About average <input type="radio"/>	Not as effective as most (in the lowest 30%) <input type="radio"/>	One of the least effective (in the lowest 10%) <input type="radio"/>																																																			
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<p>SECTION IV Items 40-49. If the instructor provided supplementary questions and response options, use this section for responding. Blacken only one response number for each question.</p>																																																									
<table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">NA <input type="radio"/></th> <th style="text-align: right;">NA <input type="radio"/></th> </tr> </thead> <tbody> <tr><td>40. <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></td><td>45. <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></td></tr> <tr><td>41. <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></td><td>46. <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></td></tr> <tr><td>42. <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></td><td>47. <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></td></tr> <tr><td>43. <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></td><td>48. <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></td></tr> <tr><td>44. <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></td><td>49. <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/></td></tr> </tbody> </table>		NA <input type="radio"/>	NA <input type="radio"/>	40. <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	45. <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	41. <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	46. <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	42. <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	47. <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	43. <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	48. <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	44. <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	49. <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>																																												
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<p>SECTION V Students' Comment Section</p> <p>If you would like to make additional comments about the course or instruction, use a separate sheet of paper. You might elaborate on the particular aspects you liked most as well as those you liked least. Also, how can the course or the way it was taught be improved? PLEASE GIVE THESE COMMENTS TO THE INSTRUCTOR.</p>																																																									

Note: From The student instructional report: its development and uses (SIR Report No. 1.). by J. A. Centra, 1972, pp. 28-29. Copyright 1972 by Educational Testing Service. Reprinted by permission.

APPENDIX D

SURVEY OF EDUCATION BACKGROUNDS AND EXPERIENCE OF FULL-TIME
INSTRUCTORS IN THE UNIVERSITY TRANSFER AREA

Note: Information reported will be regarded as confidential.
Please return to Dean of Instruction's office as soon as
possible. Thank you for your cooperation.

Name of instructor _____

I. TEACHING ASSIGNMENTS AND EXPERIENCE (Answer yes or no)

- ____ 1. Are you employed full-time at the college?
- ____ 2. Do you teach approximately 50% or more of the time
in the university transfer area?
- ____ 3. Have you previously taught university transfer courses
similar to those you are presently teaching?
- ____ 4. Have you previously been employed as a full-time,
paid instructor in a four-year college?
- ____ 5. In this blank, please report number of years total
teaching experience at public school and community
college levels combined.

II. FORMAL EDUCATIONAL BACKGROUND

- ____ 1. Are you a graduate of or have you completed a
secondary or elementary teacher-training program
at either the undergraduate or graduate level at a
four-year college or university? (yes or no)
- ____ 2. Circle one: Sem. hrs./Qtr. hrs. In this blank, please
estimate as accurately as possible the number of
semester or quarter hours of graduate credit you have
earned in the subject-field you are presently teaching
in the university transfer area. Please exclude any
education courses, such as methods, relating to the
field you are teaching.

III. TOTAL NUMBER OF STUDENTS CURRENTLY ENROLLED IN YOUR
UNIVERSITY TRANSFER COURSES: _____IV. THIS SECTION TO BE COMPLETED ONLY BY THOSE WHO HAVE NOT
COMPLETED A TEACHER TRAINING/PREPARATION PROGRAM AT A
FOUR-YEAR COLLEGE OR UNIVERSITY. (Answer yes or no)

- ____ 1. Have you ever taken a course in educational psychology
at a four-year college or university?
- ____ 2. Have you ever taken a course in educational tests and
measurements at a four-year college or university?
- ____ 3. Have you ever taken a course in methods and materials
of teaching at a four-year college or university?
- ____ 4. Have you ever completed a supervised student-teaching
program at a four-year college or university?
- ____ 5. Have you taken more than nine quarter hours of course-
work in education courses of a general nature, such as
philosophy, history, or sociology of education?
- ____ 6. Have you ever taken any other education courses
relating to classroom instructional procedures and
practices? Please list _____

APPENDIX E

Canonical Correlation Matrix

	GPA	CRHR	TCHEX	PROPRP	OVALL	ORPLN	FACST	COMM	DFWK1	DFWK2	TXTRD	EXM
GPA												
CRHR	.002											
TCHEX	.029	-.179										
PROPRP	.055	-.296	.425									
OVALL	-.024	-.100	.064	.081								
ORPLN	-.081	-.206	.016	.172	.203							
FACST	-.085	-.107	.013	.089	.183	.501						
COMM	-.090	-.093	.064	.056	.170	.499	.437					
DFWK1	.087	.002	.080	.134	-.072	.035	-.047	.073				
DFWK2	-.081	-.085	-.063	.021	.128	.201	.199	.105	-.370			
TXTRD	-.061	-.051	-.025	.023	.080	.175	.148	.181	-.033	.100		
EXM	-.102	-.189	.088	.117	.186	.486	.357	.415	-.033	.214	.214	

APPENDIX F

Pearson Correlation Coefficient Matrix

	GPA	CRHR	TCHEX	PROPRP	OVALL	ORPLN	FACST	COMM	DFWK1	DFWK2	TXTRD	EXM
GPA												
CRHR	.002 1259 .459											
TCHEX	.032 1259 .124	-.179 1280 .001										
PROPRP	.060 1259 .016	-.296 1380 .001	.425 1380 .001									
OVALL	-.785 396 .059	-.244 430 .001	.176 430 .001	.266 430 .001								
ORPLN	-.099 1159 .001	-.299 1261 .001	.018 1261 .262	.188 1261 .001	.717 392 .001							
FACST	-.120 967 .001	-.144 1056 .001	.017 1056 .281	.117 1056 .001	.671 348 .001	.689 997 .001						

APPENDIX F (continued)

	GPA	CRHR	TCHEx	PROPRP	OvALL	ORPLN	FACST	COMM	DFWK1	DFWK2	TXTRD	EXM
COMM	-.121 1028 .001	-.112 1111 .001	.077 1111 .005	.070 1111 .010	.660 368 .001	.674 1034 .001	.657 899 .001					
DFWK1	.098 1241 .001	.003 1357 .456	.081 1357 .001	.136 1357 .001	-.220 421 .001	.040 1242 .078	-.064 1042 .018	.091 1105 .001				
DFWK2	-.091 1241 .001	-.087 1357 .001	-.064 1357 .009	.022 1357 .208	.386 421 .001	.224 1242 .001	.267 1042 .001	.131 1105 .001	-.376 1357 .001			
TXTRD	-.124 675 .001	-.104 737 .002	-.047 737 .098	.043 737 .117	.450 261 .001	.339 688 .001	.330 621 .001	.378 663 .001	-.066 725 .037	.191 725 .001		
EXM	-.134 1044 .001	-.288 1121 .001	.102 1121 .001	.144 1121 .001	.663 380 .001	.645 1043 .001	.554 897 .001	.607 961 .001	-.427 1101 .078	.261 1101 .001	.449 665 .001	

KEY: First entry for each variable is correlation coefficient

Second entry for each variable is number of complete scores for sub-scale

Third entry for each variable is level of statistical significance of correlation

APPENDIX G

Means on Student Instructional Report Sub-Scale of Course
Organization and Planning and Subject-Matter Credits
for Individual Academic and Educationist Instructors

EDUCATIONISTS		ACADEMICS	
Individual Means: Low to High	Subject- Matter Quarter Hrs.	Individual Means: Low to High	Subject Matter Quarter Hrs.
21.12	54	20.66	60
21.60	12	20.71	150
22.91	112	21.57	55
23.32	30	21.82	45
24.55	45	23.06	50
24.76	30	23.44	75
34.98	36	23.88	60
25.00	60	24.10	58
25.24	30	24.19	45
25.64	72	24.21	45
25.70	40	24.22	120
25.71	48	25.00	45
25.83	35	25.04	36
26.02	35	25.63	45
26.37	30	26.04	45
Group Mean: 24.58 S.D. 1.61		Group Mean: 23.57 S.D. 1.69	

APPENDIX H

EDUCATIONAL TESTING SERVICE



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January 8, 1980

Mr. Roger E. Haugen
468 West Broccoli Road
Roseburg, OR 97470

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