

AN ABSTRACT OF THE THESIS OF

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COMPETENCIES AND SELECTED COMMUNITY COLLEGE
INSTRUCTORS

Abstract approved:

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The Purpose of the Study

The central purpose of this study was to determine the professional education competencies of selected community college vocational instructors. Respondents in the study included instructors of business and distributive education. Major dimensions were: the construction and validation of a questionnaire for community college vocational instructors; the analysis of data to determine if there were differences among the community colleges in their responses to the competencies contained in the questionnaire; a factor analysis of the professional education competencies and the community college respondents; and the formulation of implications to be considered in the development of teacher education curriculums.

The Procedures

The construction and validation of the instructor questionnaire was accomplished through a review of the literature, an evaluation by a jury of experts, and a field test. A mail survey questionnaire containing 99 professional education competencies together with a five-point Likert-type scale was used to gather data. The dependent variable was the score judgmentally assigned by respondents to denote the level of proficiency they felt was necessary for each of the 99 competencies.

The study's population utilized the four western states of California, Colorado, Oregon, and Washington and was representative of business and distributive education instructors at the community college level. A random sample of 160 instructors provided data for the study.

The Data

The F statistic was used to analyze contrasts between the mean scores for each competency with the .01 level of significance being used to determine differences existing between the community colleges. A test of Least Significant Difference was used to determine where specific differences existed between means of community colleges which were rejected in the analysis of variance tests.

Further analysis of the data was accomplished through the use of

two factor analytic techniques, the Q-technique and the R-technique. The Q-technique ordered respondents according to the 99 competencies included in the study. The R-technique was used to cluster competencies according to respondents. Factors and subfactor names were assigned after the data were analyzed.

Selected Findings

Generally, the analysis of variance tests indicated that the community colleges were alike in their responses to the competencies contained in the questionnaire. The factor analysis of data revealed that the business and distributive education instructors resembled one another in their responses and demonstrated that it is possible to generate factors containing clusters of common professional education competencies. Competencies which clustered under the factors of Instructional Management and Teaching-Learning Process were judged by instructors to require the highest level of proficiency. In all, respondents indicated that 91 of the 99 professional education competencies required a moderate or higher level of proficiency in the performance of their job.

A Factor Analysis of Professional Education
Competencies and Selected Community
College Instructors

by

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A FACTOR ANALYSIS OF PROFESSIONAL EDUCATION
COMPETENCIES AND SELECTED COMMUNITY
COLLEGE INSTRUCTORS

CHAPTER I

INTRODUCTION

Background of the Problem

There seems to be little difficulty on the part of educators to speak in general terms about what the teacher is accomplishing in the classroom. Mager (1968) states that many words are used to describe what teachers or instructors are attempting to do in the teaching-learning process:

We talk about developing skills, or competencies, or attitudes, or enthusiasm. We talk about encouraging growth or self-actualization, about helping the student to develop, or about assisting him develop his fullest potential. Regardless of the words we use to describe our teaching goals, no teaching goal can be reached unless the student is influenced to become different in some way than he was before the instruction was undertaken (p. 8).

If the goal in education is to influence the individual to change, and, because vocational education is special education, it is desirable to consider the broad goal of vocational education and the goal of the vocational instructor. In Oregon, the State Advisory Council for Vocational Education (1968) asserted that the enduring mission of occupational education may be simply stated:

To educate youth and adults to achieve a productive and purposeful relationship to the world of work that is personally

satisfying and in keeping with democratic values (p. 13).

Knowing the goal of education and the mission of occupational education is useful in the search to find a definition of teaching and provide a basis for interpreting what is meant by the definition. Mager and Beach (1967) contend that teaching is the facilitation of learning and that it is warranted to the extent that it causes learning to be more effectively achieved than would have been the case in the absence of instruction. Therefore, the major justification for the existence of instruction is that it assists an individual to learn something better than he would by himself. Instructors must demonstrate the value of their efforts by demonstrating their ability to facilitate the process of learning.

The difficulty seems to arise when one attempts to state with any degree of specificity just exactly how a person goes about performing the duties, tasks, or responsibilities necessary to cause learning to take place. This difficulty is due, in large part, to the fact that little is really known about the duties of the vocational instructor.

Community colleges are of recent origin in educational history. Little has been done to determine what an instructor actually does in the performance of his job as a teacher of a vocational subject. This problem represented a primary concern of this study.

One of the most significant developments in the teaching of vocational subjects in the last decade has been the infusion of a

concept commonly referred to as the performance-based curriculum. Many state boards of education and several leading teacher training institutions throughout the United States are advocating such an approach in the teaching of vocational or career education courses. Some school districts are attempting to implement the performance-based curriculum concept in all courses regardless of the subject matter discipline. Evidence of the magnitude of this concept in higher education is a report in a recent bulletin of the American Association of Colleges for Teacher Education (1970) which announced the formation of an AACTE Committee on Performance-Based Teacher Education.

A recent report on the proceedings of the Fourth Annual National Vocational-Technical Teacher Education Seminar prepared by Ohio State University (1971) presents emerging teacher education curricular models and is an indication of the rapidity in which educators are moving toward performance objectives. Universities which have a responsibility for the pre-service and in-service preparation of community college instructors must identify the tasks or competencies needed by community college personnel as a first step in the preparation of relevant instructional objectives. The present study identified competencies needed by selected community college instructors.

Statement of the Problem

The central problem of this study was to determine the professional education competencies of selected community college instructors. Respondents in the study included instructors of business and distributive education. Five major dimensions were considered in the problem:

1. the construction and validation of a Professional Education Competencies Instructor Questionnaire for community college vocational instructors;
2. the analysis of data to test the hypothesis that there is no significant difference among the competency mean scores for the community colleges included in the study;
3. the factor analysis of data to measure the extent to which respondents were alike or resembled each other in responding to the identified competencies;
4. the factor analysis of data to extract factors with common clusters or groupings of professional education competencies needed by community college instructors of business and distributive education;
5. the formulation of implications to be considered in the development of curriculum content, performance objectives, and instructional strategies for teacher education

institutions responsible for the preparation of community college instructors.

Definitions of Terms

The following definitions are included for purposes of standardizing the use of terms in the report. Other terms or phrases used in the report are considered to be self-explanatory.

1. Analysis of variance has as its objective the identification of independent variables which affect the response (or dependent variable). This procedure partitions the total variation in a set of data according to the various sources of variations.
2. Business Education represents a variety of programs or courses and includes such areas as data processing technology, secretarial science, medical secretary, clerk typist, accounting technology, and legal secretary.
3. Common variance is defined as the sharing of variance by two or more elements. In such a sharing, the elements are highly correlated and measure some trait in common.
4. Competency is the specific ability or capability needed to perform a particular duty or action.
5. Comprehensive community college is a two-year public institution of higher education with academic, vocational,

and general education programs. It is designed to provide a wide range of options and services in response to the needs of the local community. For purposes of this study, no distinction is made between the junior college, the community college, or the comprehensive community college.

6. Distributive Education refers to a variety of programs in the broad field of marketing and distribution. Each program may be general or specific in nature and encompasses such areas as real estate, retail or wholesale management, fashion merchandising, mid-management, transportation, and distribution.
7. Factor is a matrix of competencies whose intercorrelations are positive or negative with factor loadings of $\pm .50$ or higher. A factor is also referred to as a cluster.
8. Factor analysis is a statistical method which consists essentially of: (1) giving a rather large number of tests (competencies) which are presumed to measure some aspects of the general trait (professional education) and which will represent a wide range of elements that might enter into the trait; (2) evaluating intercorrelations among these tests (competencies) to find those which tend to measure the same element or factor; (3) deducing what this

trait measures in common and giving it a name.

9. Factor loading is the correlation of any particular competency with the other competencies being extracted in the same factor.
10. Factor solution refers to the number of factors the computer was set to extract. The different factor solutions were studied in accordance to pre-set criteria in order to select the most appropriate number of factors for analysis.
11. Professional Education Competency refers to a specific knowledge, understanding, task, duty, responsibility or expected behavior needed by an instructor in the pedagogical performance of his job.
12. Proficiency is the level or degree of expertness required in the performance of a professional education competency.
13. Q-technique is a factor analytic technique which indicates the extent to which respondents are alike or resemble each other with regard to the competencies listed in the instructor questionnaire.
14. R-technique is a factor analytic technique which examines the relationship of every competency with every other competency and provides for a clustering of common competencies. The technique orders competencies according to people.

15. Spurious competency is a competency with a factor loading of less than $\pm .50$. It is tentatively identified as clustering with the factor in which its highest factor loading occurred even though its loading is less than $\pm .50$.
16. Vocational education as used in this study includes such terms as occupational education, career education, and technical education. It refers to courses, programs, performance objectives, and related instruction based upon competencies designed to prepare the learner for job entry into an occupation or advancement in a current job.
17. Vocational instructor is an individual who, in completing the instructor questionnaire, has identified his primary teaching responsibility to be in one or more of the vocational education subject matter areas.

The Rationale of the Study

The demand for relevant educational programs to prepare individuals to cope with the ever-increasing complexity of our technological society requires that we continually seek new and better means of measuring the effectiveness of the teaching-learning process. Many studies have already been conducted in vocational education to identify tasks and competencies in a number of occupations. Access to such information has had direct implications in the development of

courses and curricula designed to prepare individuals for entry into the labor market. Logically, such an approach should be considered as meaningful in the preparation of teachers or instructors as it is in the preparation of individuals for other occupations.

There is a definite need to identify the professional education competencies needed for effective teaching. O'Conner and Justin (1970) emphasize that pedagogical skills have rarely been measured with any degree of accuracy. At all levels of education, instructors are selected, employed, evaluated and rewarded or dismissed without anyone really knowing how proficient they are as teachers. They further contend that the community college instructor is frequently hired and evaluated on the basis of his in-depth knowledge of his subject field. Yet, teaching requires more than subject matter knowledge. Somehow, this knowledge must be transmitted to, and incorporated by, the learner. Moss (1970) stresses that the role of the instructor is to adapt his behavior in a manner which will enhance direct and indirect interaction with the learner. Further, the instructor's behavior is dependent upon the possession of a suitable pattern of competencies. The function and responsibility of teacher education programs is to insure that instructors are equipped with needed competencies. To meet this responsibility requires a modification of existing teacher preparation programs.

According to Cotrell (1969) there is a way to improve teacher

preparation programs.

A logical strategy for the efficiency of teacher education is to determine the various skills and knowledges needed by all vocational-technical teachers, which of these skills and knowledges are truly common across several service areas, and which are truly unique to a service area. Further efficiency could be effected if some insight were available relative to preservice and inservice priority of teaching skills and knowledges (p. 25).

In a special presentation at the Fourth Annual National Vocational-Technical Teacher Education Seminar, Cotrell (1970) encouraged the development of more courses which are based on the present day activities of teachers. Courses using antiquated editions of textbooks may not be very helpful to teachers of today. There must be substantial evidence that curricula are based upon the needs of vocational and technical teachers. The American Association of Junior Colleges published a special report in which Singer (1969) urged educators to discover whether, and to what extent, teachers and administrators have available to them the kind and amount of job-related training really needed. The challenge is to determine the extent to which programs now exist which will encourage and assist community college personnel to really cause learning to happen for nearly two million post-secondary students attending two-year colleges throughout the United States. In the same report Gleaser (1969) observed that the quality of the learner's education is closely related to the quality of training and preparation of the instructor. As new techniques and knowledge increase in the two-year institutions teachers and other

professionals clearly owe it to their students to remain alert and responsive to all significant developments, both in their special and their related fields.

On a state level, a study of pre-service and in-service education for community college personnel in Oregon community colleges conducted by the Division of Vocational, Adult and Community College Education of Oregon State University (1969) cautioned that if a state university were to set up a teacher preparation program for community colleges, it should plan a program for instructors based upon the reported needs of the community colleges and that there should be intimate community college involvement in the planning, initiation, and execution of the programs. All recent studies, whether on the state or national level, demonstrate the need, the appropriateness, and more importantly, the urgency for research designed to identify the competencies required of community college instructors of vocational education. The present study proposed to identify the common professional education competencies of community college instructors of business and distributive education. It represents one segment of a concerted and coordinated research effort to gather information which will be useful in the development of pre-service and in-service teacher education programs for community college instructors. The value and need for such data is clearly spelled out in the First Annual Evaluation Report of the Oregon Governor's Advisory Council for Vocational

Education (1970) which cites existing programs to prepare community college instructors as grossly inadequate.

CHAPTER II

REVIEW OF RELATED LITERATURE

In addition to the rationale presented in the preceding chapter, recent research has been conducted which provides a cogent argument for an empirical approach in the identification of professional education competencies needed by community college instructors. The results of such research may have significant implications for teacher education curricula.

General or Related Studies

A study by Thomas (1952) identified clusters of common clerical operations performed by office personnel. The sample of office jobs used in the study was taken from five different companies. By using Job Description Check Lists of Office Occupations and preparing a check list of tasks, it was possible to identify clusters or components of clerical operations which included (a) typing, (b) listing and compilation, (c) communication, (d) planning and supervision, (e) filing, (f) stock handling, (g) routine clerical operations, and (h) calculation. Scheips' (1954) study on the classification of 4,000 jobs analyzed by the U. S. Employment Service revealed that jobs can be classified on the basis of pattern identity.

McCormick, Finn and Scheips (1957) referred to job requirements as the personal characteristics required on the part of

incumbents for reasonably satisfactory performance.

Results of a "probing" project by Palmer and McCormick (1961) support the contention that work activity can be identified and measured. A distinction is made between "job oriented" and "worker oriented" characteristics of an occupation for the purpose of developing a check list of activities performed by the worker.

Leet (1969) conducted a study to determine the extent of professional preparation of junior college teachers in Missouri; however, competencies were not identified. A study which did concern itself with the development of a cognitive taxonomy of objectives for teacher education was that of Kissner's (1968) in the area of educational psychology.

Related Methodological Studies

A review of the related literature supports the methodological approach used in the present study. Data for the analysis of office operations by Thomas (1952) were obtained by having respondents complete an instrument containing a check list of 139 clerical or office tasks. Intercorrelations for 79 of the items were computed and clusters or components of work were identified. Chalupsky (1954) applied factor analysis to two different types of job analysis check lists and found that such a procedure was an effective methodology in researching job interrelationships. The previously cited study of

McCormick, Finn and Scheips involved factor analysis of job variables and the classification of jobs into patterns of job requirements based upon factor score levels. Cotrell (1970) used factor analysis to help identify clusters of performance elements in the area of cooperative education.

Palmer and McCormick (1961) developed a check list containing 177 descriptive job activities in terms of worker behavior. The data were correlated and subjected to factor analysis. The results supported the position that work activities can be identified, measured, and organized simply and economically. A research project by Silverman (1966) to devise a method for determining basic technical skills needed by Navy enlisted personnel substantiates the survey method of obtaining task pattern information. A computerized technique was used to produce a series of relatively homogeneous clusters of task patterns. The clusters represented the occupational specialists that existed in a field of work. A Task List Questionnaire consisting of a comprehensive list of tasks performed by personnel in the engineering department was used in this particular study.

Sjorgen, Schroeder and Sahl (1967) conducted a study to determine whether common behaviors could be identified across agricultural and metal-fabricating occupations. The basic analytic tool was factor analysis. Factor matrices were isolated with the varimax procedure. In addition, correlations of mean scores for

each variable of 83 occupations were determined. Crawford (1967) used a variation of Q-methodology to determine the basic beliefs concerning all phases of the distributive education program. Research by Halfin and Courtney (1970) further validates the procedure used in the present study. The methodological approach included the development of a Likert-type check list consisting of an itemized list of professional training needs and requirements for vocational education teachers, a sample from a population of experienced vocational education teachers, and analysis of variance. Results indicated that factor identification may be accomplished when using an occupational groups classification system as a base and that it is possible to secure data for determining interrelationships. Smith and Moss (1970) also support the inventory technique for identifying work role tasks. They contend that data yielded from a task check list which is submitted to workers in the occupation being studied is valid and reliable.

Curricular Studies in Vocational Education

There is evidence of increasing interest in the area of teacher effectiveness and teacher competencies by vocational educators. In addition to the research of Cotrell (1969) and Halfin and Courtney (1970), studies have been completed in the area of trade and industrial education and in business and distributive education. Walsh (1960) evaluated 107 competencies that the skillful trade and industrial

teacher should bring to the job. Nichols (1964) conducted a study to determine the specific educational tasks of selected trade and industrial teachers in Ohio. By administering a questionnaire consisting of 145 specific tasks appropriate to trade and industrial teaching, 98 tasks were found to be significant. Comparing the significant tasks with current teacher education offerings revealed 25 specific topics which were not included in the teacher education programs.

In distributive education, a study by Samson (1964) identified 127 critical requirements for secondary teacher-coordinators in Iowa. In Illinois, Harris (1965) conducted a study of critical requirements and reasoned judgment comparisons of office education and distributive education teacher-coordinators in which 61 critical requirements for the distributive education coordinator and 16 critical requirements for the office education coordinator were delineated.

In a recent study by Crawford (1967) to provide a basis for a competency approach in distributive education curriculum development, respondents identified 179 critical tasks for high school distributive education teacher-coordinators. Justification for the present study was also stressed:

Further research is needed to determine the best way to develop competencies (professional and technical) needed by the distributive education teacher coordinator to effectively conduct a distributive education curriculum. . . studies should be made concerning the job of the post-secondary teacher-coordinator, the state supervisor, the teacher educator and the adult instructor (p. 3).

In an attempt to arrive at an operational definition of a "good" teacher of basic business classes, Harriston (1965) used a modification of the critical incident technique. The use of questionnaires to collect data for the investigation was deemed adequate and resulted in the identification of 26 critical requirements for teachers of basic business classes. A study with implications for high school business curriculum development and evaluation was conducted in Washington by Perkins (1968). The purpose of the study was to identify clusters of tasks performed by a sample of office employees working in 12 Standard Industrial Classifications. Questionnaires were distributed, and tabulations of data revealed 599 tasks could be clustered within 13 categories. The development of composite clusters provides a useful tool in re-evaluating existing curriculum.

A review of the literature validates the approach used in the present study. An empirically-based procedure for determining the professional education competencies required of vocational instructors may be summarized as follows:

1. Occupational groups may be classified and studied by factor identification for the purpose of revealing differentiation among workers.
2. Professional teacher preparation programs may be studied and compared with the professional education competencies needed by instructors.

3. Professional education competencies may be descriptively grouped or clustered for analysis. Teacher preparation courses, behavioral objectives, and instructional strategies may then be prepared based upon the common professional education competencies.

CHAPTER III

THE DESIGN OF THE STUDY

The sections presented in this chapter include: The Dependent Variable, Preparation of the Instrument, Selection of the Sample, The Collection of Data, and The Statistical Design.

The Dependent Variable

The dependent variable in the study was the score judgmentally assigned by respondents in the sample to denote the level of proficiency that they felt was necessary for each of 99 professional education competencies. Respondents, which included community college instructors of business and distributive education, were asked to evaluate the importance of each competency in relation to their job. All of the competencies were assigned proficiency levels based upon a five-point Likert-type scale. The scale may be found in the Professional Education Competencies Instructor Questionnaire in Appendix C. Each competency was scored independently for a total of 99 dependent variables.

Preparation of the Instrument

The instrument used in this study was a mail survey questionnaire containing 99 professional education competencies together with a five-point Likert-type scale which enabled the respondent to

judgmentally score the level of proficiency necessary for each competency. The development of the instructor questionnaire was accomplished in conjunction with two similar studies being done concurrently, one by Gunderson (1971) in trade and industrial education and the other by Lindahl (1971) in home economics, agriculture, and service occupations. This necessitated the identification of competencies which were not considered to be unique to instructors of business and distributive education.

The initial step in the development of the questionnaire was a review of the literature on teacher competencies and teacher performance in all areas of vocational education. Halfin and Courtney (1970) used a 130-item instrument with a Likert-type scale in a ten-state study of vocational education teachers at the high school level. In business and distributive education, studies by Crawford (1967), Samson (1964), Harris (1965), and Harrison (1965) were reviewed. The instrument presented by Halfin and Courtney (1970) served as a model for the cooperative development of the instructor questionnaire used in the three concurrent studies. The format was revised to make it more suitable to the community college level. Each competency was checked to determine its appropriateness to community college teaching. Competencies which appeared to be redundant or inappropriate were deleted. An initial questionnaire containing 140 competencies was developed and subsequently revised as a result of suggestions from committee members of each of the three

investigators. The revised questionnaire contained 95 competencies or dependent variables.

The second step was to present the questionnaire to a jury of experts for the purpose of evaluating it in relation to format, content, clarity, and comprehensiveness. Each investigator selected a jury of experts representing the respective areas selected for study. The Oregon Business Education Council which serves as the official advisory council to the Oregon Board of Education was selected to serve as the jury for this study. The names of Council members are presented in Appendix A. Composition of the Council included representatives from secondary schools, community colleges, and four-year institutions of higher learning. The state specialist for distributive education and the state specialist for business education serve as ex-officio members on the Council. This step is similar in procedure to the study conducted by Cotrell (1970) in which a task force of teacher educators, state supervisors, and master teachers was selected to review the performance elements which had been generated. Presentation of the questionnaire was made by the investigator at one of the regularly scheduled Council meetings. Each OBEC representative was asked to review each of the competencies in the questionnaire and to list any recommendations or suggestions for revision. The revision form used by jury members may be found in Appendix B.

After a jury of experts for each of the three studies had evaluated the questionnaire the investigators compiled and reviewed each list of suggestions and recommendations. Several items were revised for clarity, one item was deleted, and five items or competencies were added resulting in a questionnaire containing 99 dependent variables.

The third step involved a field test. Twenty-one community college instructors (seven randomly selected by each of the three investigators) were asked to complete the questionnaire. They were also asked to identify any competencies which were not clear or which were difficult to understand. Following the field testing phase, only minor revisions were required prior to the preparation of the final draft. The Professional Education Competencies Instructor Questionnaire used in the study may be found in Appendix C.

Selection of the Sample

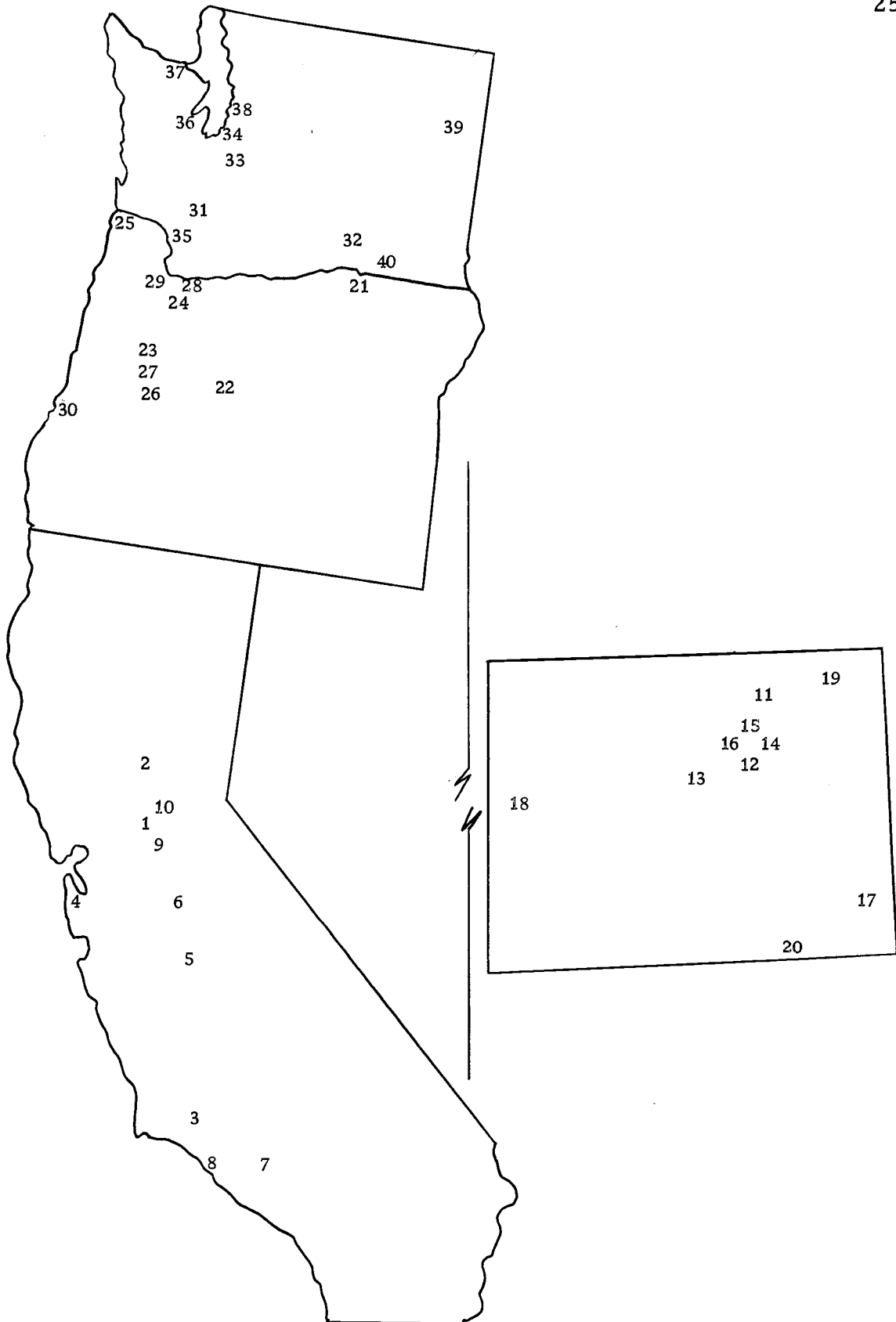
The study's population utilized the four western states of California, Colorado, Oregon, and Washington. The relatively recent emergence of the community college movement in the United States, particularly in the western states, necessitated the careful and deliberate selection of the states which would lend themselves to this kind of study. Two criteria were considered in the selection of states. First, the state had to have at least ten community colleges. Second,

the community colleges had to be of sufficient size and diversity to provide an adequate sample for each of the areas being investigated in the three concurrent studies. The four states selected met these requirements. See Figure 1 for the location of states included in the study.

In all, 40 community colleges, ten in each of the four states, were arbitrarily selected for the study. The sample for the study consisted of four business or distributive education instructors from each of the community colleges identified in the population. Hence, the total sample consisted of 160 respondents. The sample was obtained by randomly selecting four instructors in each community college. A table of random numbers was used for all randomizations. No attempt was made to select an equal distribution of business or distributive education instructors. Names of instructors in the community colleges from which the randomizations were made were obtained from the following sources:

1. In California, participating institutions were asked to provide faculty rosters, college catalogs, or college directories.
2. In Colorado, the Colorado Directory of Teachers of Business Education prepared by the State Board for Community Colleges and Occupational Education was used.
3. In Oregon, names were secured from the Directory to Personnel in Oregon Community Colleges published by the Oregon Community College Association.

**Figure 1. States Participating in the Study.
Community Colleges identified by
number may be found in Appendices
D, E, F, and G.**



4. In Washington, the Vocational Education Directory prepared and published by the Coordinating Council for Occupational Education of the Washington Division of Vocational Education provided names for the selection of respondents.

Collection of Data

Several steps were involved in the collection of data in each of the four states. Because of the implications the three studies could have for curriculum development in teacher education programs, the Division of Vocational, Adult and Community College Education, Oregon State University, was asked to provide division support in the securing of appropriate agency and community college participation in each state. In California, support for the study was obtained by contacting the Office of the Chancellor of the California Community Colleges and obtaining a list of community colleges and the names of the presidents. Further support for the study was secured from the Research and Development Committee of the California Junior College Association. A copy of the supportative letter received from the Committee appears in Appendix J. A directory, by college, of personnel designated as dean or director of vocational education was obtained from the Division of Vocational Education of the California Community Colleges. In Colorado, state agency support for the studies was obtained from the Division of Occupational Education of

the State Board for Community Colleges and Occupational Education. In Oregon, the required support necessary to conduct the research in the community colleges was granted by the Executive Secretary of the Oregon Community College Association. In Washington, the Washington State Board for Community Colleges of the Coordinating Council for Occupational Education endorsed the studies.

The president of each of the 40 community colleges selected for the study was contacted by letter and asked if he would encourage participation by respondents selected in his institution. See Appendix K for sample letter sent to community college presidents. Enclosed with the letter was a copy of the Instructor Questionnaire and Response Card which was to be completed and returned to the investigator. The Response Card, as shown in Appendix L, asked each president to indicate whether or not he was willing to support the study and to identify a contact person in the community college with whom the investigator could direct further communication. Administrative support was granted by all 40 community colleges participating in the study.

Data were collected by mailing a questionnaire, a self-addressed stamped envelope, and an explanatory letter to each of the four instructors in each institution. See Appendix M for the letter sent to respondents. The initial mailing included Colorado, California, Oregon and Washington. All data were collected within a period of

four weeks.

Three methods of follow-up were used. Instructors who did not respond by the date requested were first sent an additional questionnaire and a memorandum requesting their response. A second memorandum was sent to those instructors still not responding. Copies of follow-up memorandums may be found in Appendices N and O. In California, the contact person in each of the ten community colleges was telephoned by the investigator and asked to encourage those who had not responded prior to the suggested deadline to do so.

The final step in the collection of data was to check and code each returned questionnaire before transferring the data to IBM cards for computer processing. The procedure for coding the data cards is included in Appendix P.

The Statistical Design

The central problem of this study was to determine the common professional education competencies needed by community college vocational instructors of business and distributive education. Research by Cotrell (1970) and Halfin and Courtney (1970) provided the base for the general design of this study which included the following:

1. The population for the study was representative of business and distributive education instructors at the community

college level. A random sample of 160 instructors provided data by completing and returning a 99-item (competency) questionnaire which was mailed directly to them by the investigator.

2. Respondents were asked to react to each of the 99 competencies in the instrument by recording the level of proficiency that they felt was required on a five-point Likert-type scale. Responses ranged from a low of 1.0 to a high of 5.0.
3. There was an interest in learning if differences existed among the competency mean scores for the community colleges participating in the study. The hypothesis tested in this study was that there is no significant difference among the community college responses. The one-way classification analysis of variance measured community college mean score differences and was used to test the hypothesis. The test statistic used to analyze contrasts between the mean scores for each competency was the F statistic with the .01 level of significance being used to determine differences existing between the community colleges. The test of Least Significant Difference (L. S. D.) was used to determine where specific differences existed between means of community colleges for competency

means which were rejected in the analysis of variance tests.

4. Data were analyzed through the use of two factor analytic techniques, the Q-technique and the R-technique. The characteristics of these two techniques are described below:
 - A. The Q-technique basically involved the ordering of respondents according to the competencies which were included for the study. A 160-respondents inter-correlation matrix based upon data furnished on 99 competencies was generated. This form of analysis provided a measure of commonality among respondents and indicated the extent to which business and distributive education instructors were alike or resembled each other with regard to the 99 competencies in question. Information on the Q-technique control cards used for computer analysis of data is found in Appendix H.
 - B. The R-technique ordered competencies according to the respondents included in the study. This form of analysis examined the relationship of every competency with every other competency and provided for a clustering of common professional education competencies. A 99-competencies intercorrelation matrix based upon data collected from 160 respondents was generated.

Hence, the 99 competencies were clustered in a manner that best accounted for all the variability represented by the respondents' ratings on all competencies. Information on the R-technique control cards used for the computer analysis of data is found in Appendix I.

- C. Competencies with rotated factor loadings of $\pm .50$ or higher were recorded as being clustered within a factor.

CHAPTER IV

THE DATA

This chapter on the data includes a presentation of the following sections: The Results of Analysis of Variance Tests, The Results of Factor Analysis Tests, and The Results of Mean Score Ranks.

The Results of Analysis of Variance Tests

The F statistic was used to conduct a total of 99 one-way classification analysis of variance tests in the study. In each instance, responses of the 40 community colleges were tested to determine whether or not a significant difference existed among the competency mean scores. Generally, the tests of the competency mean scores indicated that the community colleges were alike in their responses. The results of these tests are summarized in Appendix Q. The test of significance revealed that 96 of the 99 tests were retained. In only three instances were the tests of significance rejected. For the three rejected items the Least Significance Difference was computed. The results are shown in Appendices R, S and T.

Results of Factor Analysis

A factor analysis method was used for the purpose of determining the distinct factors which were present among the 99 competencies included in the study. This procedure permitted the identification of

clusters of competencies in which, according to generated factor loadings, there existed a high degree of correlation with the extracted factors. Only those competencies with a factor loading of $\pm .50$ or higher were included in a factor. The results of factor analysis were generated through the use of two factor analytic techniques, the Q-technique and the R-technique. Computations of the data are presented below.

Q-technique Analysis

The purpose of the Q-technique was to indicate the extent to which the respondents were alike or resembled each other relative to the 99 competencies. Essentially, it involved the ordering of respondents according to competencies included in the study and provided a measure of commonality among the business and distributive education instructors. Results of an eight-factor solution revealed that in all instances except one, factor loadings exceeded $+ .90$. The lowest factor loading was $+ .88$. The results of the Q-technique analysis may be found in Appendix U.

R-technique Analysis

The R-technique was considered to be the most important procedure used in the study. Cattell (1952) contends that the greatest majority of all factor studies have used the R-technique. Essentially,

the R-technique clusters competencies according to respondents. In all, the data were factor-analyzed three separate times using the R-technique with factor solutions of six, five, and four. Table 1 lists the common factor variance which was accumulated as six factors were generated.

Table 1. Percentage of common factor variance for R-technique analysis.

Factor	Percentage	Cumulative percentage
1	23.117	23.117
2	7.310	30.427
3	5.234	35.661
4	3.657	39.318
5	3.265	42.583
6	3.000	45.583

All factors which were generated by the R-technique resulted in high negative factor loadings. That is, all factors had $-.50$ or higher loadings. The five-factor solution had the largest number of competencies with factor loadings in excess of $-.50$ and was decidedly more balanced when compared with other solutions. It generated 47 competencies with factor loadings above $-.50$ and accounted for 43 percent of the total common factor variance. Results of the R-technique analysis using the five-factor solution appear in Tables 2 through 6. Each table is illustrative of a factor and presents competencies with factor loadings of $-.50$ or greater. Spurious competencies were defined as those which loaded highest under one factor but which

had factor loadings of less than $\pm .50$. Factors and subfactor names were assigned after the data were analyzed. These names were arbitrarily assigned and the titles are assumed to be indicative of the nature of the competencies which loaded under each factor.

Factor I. Program Management

A total of 20 competencies loaded under Factor I, Program Management. Three subfactors were clearly identifiable within this factor. The first subfactor, Program Development, contained seven competencies. One of these, Competency Number 90, had a factor loading above $-.50$ under Factor IV. This was the only instance in which factor loadings overlapped above the $-.50$ level. Five competencies were listed under the subfactor of Program Operation. The third subfactor, Program Coordination, included eight competencies. Factor I was the only factor with identifiable subfactors. Generally, competencies in Factor I had low mean scores, low mean rankings, and high standard deviations. Specific competencies included in Factor I are listed in Table 2.

Factor II. Professional Behavior

A total of eight competencies with factor loadings in excess of $-.50$ were generated for Factor II, which was entitled Professional Behavior. Mean scores ranged from 3.569 to 4.038. All except one

Table 2. Factor I - Program management.

Subfactor	Competency number	Competency	Factor loading	Mean	Standard deviation	Mean ranking
Program development	8	interpret the innovative provisions of the Vocational Act as amended in 1968	-.583	3.044	1.04	87
	16	interpret the history of vocational education	-.569	2.419	.97	98
	23	interpret the state specifications and requirements for vocational facilities	-.673	3.031	1.13	88.5
	41	use the State Plan for Vocational Education in securing reimbursement for vocational programs	-.637	3.125	1.18	81
Program coordination	42	organize or work with local vocational advisory committees	-.608	3.756	1.01	56.5
Program development	43	interpret the history of education	-.531	2.194	.97	99
	46	utilize state guidelines for curriculum planning	-.585	3.425	.96	73
Program operation	64	maintain necessary report forms required by state or federal agencies	-.612	3.006	1.18	91
	69	use the results of standardized test scores for job placement	-.622	3.013	1.02	90
	70	utilize the services of local and state vocational education agencies	-.650	3.250	.99	79
Program coordination	76	participate in outside trade, business or professional organizations related to your subject matter area	-.505	3.725	.90	59
	77	lead a conference	-.585	3.513	1.08	68
	84	identify acceptable community social behaviors for instructors	-.636	3.031	1.14	88.5
	86	identify local community power structures and pressure groups	-.596	2.925	1.11	92
Program development	90*	provide programs for the student with special needs	-.515	3.881	.86	44.5

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Table 2. (Continued)

Subfactor	Competency number	Competency	Factor loading	Mean	Standard deviation	Mean ranking
Program coordination	92	write articles for news releases	-.652	2.719	1.14	96
Program operation	94	conduct follow-up studies for purposes of determining effectiveness of instruction	-.515	3.869	.92	47
Program coordination	96	articulate your instructional program with other educational institutions or agencies	-.502	3.769	.93	54
Program operation	97	interpret safety rules and regulations to students	-.510	3.063	1.17	84.5
Program coordination	99	coordinate and supervise cooperative work experience programs	-.514	3.588	1.19	63
<u>Spurious Competencies</u>						
	4	involve yourself in civic community activities not directly related to the school	-.303	2.885	1.06	93
	14	participate in the supervision of non-vocational extracurricular activities	-.445	2.756	.95	95
	18	interpret state certification requirements for instructors	-.465	2.813	1.11	94
	19	assist in the development of the total community college program	-.469	3.756	.84	56.5
	20	prepare budgetary requests for vocational programs	-.428	3.769	.88	53
	21	locate available standardized tests	-.378	3.119	.98	82
	22	secure on-the-job training positions for students	-.363	3.488	1.11	70
	34	interpret the legal liabilities of a teacher	-.471	3.056	1.07	86
	35	direct, advise, or promote student participation in competitive events or youth organizations related to vocational education	-.481	3.188	1.02	80
	40	provide special training or assistance to disadvantaged and handicapped students	-.480	3.819	1.07	49

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Table 2. (Continued)

Competency number	Competency	Factor loading	Mean	Standard deviation	Mean ranking
44	build a display for instructional purposes	-.479	3.256	1.05	78
48	identify the similarities and differences between the goals of general and vocational education	-.410	3.506	1.03	69
52	interpret the objectives of vocational education to others	-.449	3.625	.99	62
57	assess the validity, reliability and difficulty of instructor made tests	-.342	3.993	.86	37
60	utilize written shop, classroom and laboratory equipment organized plans	-.434	3.669	1.00	61
63	distinguish between two or more educational philosophies	-.458	3.094	1.10	83
71	use counseling techniques to help students solve personal and social problems	-.464	3.544	1.11	66
83	interpret the socio-economic class structure of the local community in relation to students enrolled in vocational programs	-.469	3.400	1.05	75
98	select and screen students for your program	-.447	3.063	1.15	84.5

* Competency number 90 also had a factor loading over .50 under Factor IV.

of the competencies were in the middle one-third when ranked according to mean scores. Standard deviations in all instances but one were higher than 1.0. Table 3 presents specific competencies included in Factor II.

Factor III. Instructional Management

There were nine competencies clustered under Factor III, Instructional Management. Seven of the nine competencies had mean scores above 4.0, the lowest mean ranking being 50. Standard deviations were all less than 1.0. All of the competencies were related to duties which indirectly facilitate the teaching-learning process.

Competencies for Factor III are shown in Table 4.

Factor IV. Teaching-Learning Process

The factor with the second highest number of competencies was Factor IV, Teaching-Learning Process. There were ten competencies with factor loadings above $-.50$ clustered under this factor. Only two of the competencies in this factor had mean scores of less than 4.0. Eight of the ten mean scores ranked in the upper one-third of the total number of competencies included in the study. Standard deviations were generally low with all but one being below the $.90$ level. Competencies which clustered under Factor IV are presented in Table 5.

Table 3. Factor II - Professional Behavior.

Competency number	Competency	Factor loading	Mean	Standard deviation	Mean ranking
7	adapt your appearance and apparel to acceptable standards for instructors	-.607	3.950	1.13	39
28	maintain student performance or progress records	-.649	4.038	.98	31.5
29	adhere to the code of ethics adopted in your community college	-.816	3.888	1.14	43
58	maintain a clean, orderly laboratory or classroom	-.647	3.569	1.27	64
75	maintain discipline in the classroom, shop or laboratory	-.549	3.925	1.10	41
85	work cooperatively with people in the community	-.523	3.775	1.05	52
88	make use of available guidance and counseling services within the community college	-.664	3.781	1.03	51
89	interpret community college policies	-.605	3.394	1.01	76
<u>Spurious Competencies</u>					
12	interpret the goals of general education	-.397	3.763	.89	55
30	interpret the philosophy of the community college in providing vocational programs for the student	-.491	3.875	.93	46
33	motivate students in the classroom, shop or laboratory	-.482	4.650	.61	1
36	relate to students from different socio-economic backgrounds	-.453	4.056	.95	30
45	formulate your own educational philosophy	-.467	4.100	.95	27
51	relate the vocational program to other instructional programs	-.368	3.881	.86	44.5
62	make a daily lesson plan	-.283	3.475	1.22	71
66	identify students in need of counseling or guidance	-.444	4.069	.83	29
79	communicate your ideas or point of view to other instructors or administrators	-.423	4.021	.80	33
82	inform students of the nature and requirements of specific occupations	-.299	4.144	.76	22
87	operate duplicating equipment	-.478	3.294	1.34	77

Table 4. Factor III - Instructional management.

Competency number	Competency	Factor loading	Mean	Standard deviation	Mean ranking
3	conduct a shop or laboratory demonstration for an individual student	-.515	4.275	.91	13
9	select appropriate equipment and supplies for instructional purposes	-.598	4.450	.69	7
10	arrange and conduct field trips	-.520	3.794	.96	50
11	interpret the goals and objectives of vocational education	-.554	4.038	.95	31.5
13	provide practical shop or laboratory experiences to enhance classroom learning	-.633	4.481	.65	5
17	relate technological advances to laboratory and classroom instruction	-.517	4.344	.66	11
24	<u>develop</u> audio-visual materials for instructional purposes	-.550	4.013	.89	35.5
26	<u>select</u> appropriate audio-visual materials for instructional purposes	-.524	3.963	.79	38
27	revise courses in accordance with current occupational trends	-.651	4.463	.71	6
<u>Spurious Competencies</u>					
1	assist community college administrators initiate and maintain vocational programs	-.470	3.900	.76	42
5	promote and teach adult vocational programs	-.419	4.106	.91	25.5
6	ask questions during classroom presentations or demonstrations to aid student learning	-.402	4.575	.57	3.5
15	aid the student in obtaining job placement after training	-.324	3.556	.88	65
32	develop <u>objective</u> tests to measure achievement	-.478	4.244	.88	15
37	utilize individualized instruction materials and techniques	-.464	4.219	.73	17
39	interpret your vocational program to others	-.473	4.088	.80	28
54	write performance objectives	-.341	4.013	.90	35.5
55	conduct community surveys to improve instruction or plan programs	-.490	3.413	.89	74
74	develop performance tests to measure achievement	-.399	4.225	.83	16

Table 5. Factor IV - Teaching-learning process.

Competency number	Competencies	Factor loading	Mean	Standard deviation	Mean ranking
49	develop classroom instruction based upon the individual needs of the learner	-.562	4.350	.68	10
59	teach at the students' level and rate of learning	-.535	4.375	.72	9
61	maintain student attention during classroom presentations or demonstrations	-.599	4.394	.75	8
65	use a student-centered teaching style	-.594	4.163	.94	21
72	summarize classroom presentations	-.513	4.106	.83	25.5
73	aid students in entering educational or occupational training programs beyond the community college level	-.504	3.831	.84	48
78	develop student learning activities to facilitate instruction	-.652	4.206	.69	18
90*	provide programs for the student with special needs	-.504	3.881	.86	44.5
93	be stimulating in your work as an instructor	-.549	4.600	.67	2
95	evaluate teaching effectiveness by measuring student achievement	-.512	4.134	.86	24
<u>Spurious Competencies</u>					
31	select textbooks and instructional materials for the classroom, shop or laboratory	-.383	4.575	.58	3.5
38	relate the course of study to measurable performance objectives	-.468	4.250	.68	14
47	draw from personal avocational interests to enrich instruction	-.350	4.169	.82	20
50	provide appropriate practice for development of basic skills	-.431	4.306	.77	12
53	break down an occupation or job into its component parts for instructional or guidance purposes	-.457	4.025	.90	34
68	evaluate the effectiveness of a classroom or laboratory demonstration	-.453	4.138	.81	23
80	develop subjective tests to measure achievement	-.267	3.700	1.15	60

(Continued on next page)

Table 5. (Continued)

Competency number	Spurious Competencies	Factor loading	Mean	Standard deviation	Mean ranking
81	relate current events associated with your subject matter area to classroom instruction	-.353	4.194	.80	19
91	use programmed learning materials	-.383	3.519	1.00	67

*Competency number 90 also has a factor above .750 under Factor I.

Factor V. Community College Philosophy

The last factor, Factor V, contained only one competency with a factor loading above $-.50$. Three spurious competencies loaded highest under this factor. Mean scores, mean rankings, and standard deviations for the competencies listed under Factor V are contained in Table 6.

Results of Mean Score Ranks

Each of the 99 competencies was ranked from 1 to 99. Ranking was based upon the mean score for each of the competencies. The ten competencies with the highest mean scores are presented in Table 7. The ten competencies with the lowest mean scores are found in Table 8. Mean score ranks of all the competencies are included in Tables 2 through 6.

Three of the ten highest ranked competencies were spurious competencies with factor loadings of less than $-.50$. The remaining seven competencies all clustered around Factors III and IV. Included in the ten lowest ranked competencies were six competencies which loaded under Factor I. The other four were spurious competencies, three of which loaded highest under Factor I and one which loaded under Factor V.

An interpretation of all of the data presented in this chapter and the implications of the study are presented in Chapter V.

Table 6. Factor V - Community college philosophy.

Competency number	Competency	Factor loading	Mean	Standard deviation	Mean ranking
25	interpret the philosophy of the comprehensive community college	-.508	3.456	1.06	72
<u>Spurious Competencies</u>					
2	interpret the provisions of instructor tenure laws	-.420	2.631	1.08	97
56	use the information contained in professional journals for personal improvement or improvement of instruction	-.356	3.931	.79	40
67	participate in professional organizations related to your subject matter area	-.441	3.750	.95	58

Table 7. Ten highest ranked professional education competencies based upon mean scores.

Mean ranking	Competency number	Competency	Mean	Factor
1	33	motivate students in the classroom, shop or laboratory	4.650	Spurious* (II)
2	93	be stimulating in your work as an instructor	4.600	IV
3.5	6	ask questions during classroom presentations or demonstrations to aid student learning	4.757	Spurious* (III)
3.5	31	select textbooks and instructional materials for the classroom, shop or laboratory	4.757	Spurious* (IV)
5	13	provide practical shop or laboratory experiences to enhance classroom learning	4.481	III
6	27	revise courses in accordance with current occupational trends	4.463	III
7	9	select appropriate equipment and supplies for instructional purposes	4.450	III
8	61	maintain student attention during classroom presentations or demonstrations	4.394	IV
9	59	teach at the student's level and rate of learning	4.375	IV
10	49	develop classroom instruction based upon the individual needs of the learner	4.350	IV

* Spurious competencies were considered as those competencies with factor loadings of less than $-.50$.

Table 8. Ten lowest ranked professional education competencies based upon mean scores.

Mean ranking	Competency	Competency	Mean	Factor
90	69	use the results of standardized test scores for job placement	3.250	I
91	64	maintain necessary report forms required by state or federal agencies	3.006	I
92	86	identify local community power structures and pressure groups	2.925	I
93	4	involve yourself in civic community activities not directly related to the school	2.885	Spurious* (I)
94	18	interpret state certification requirements for instructors	2.813	Spurious* (I)
95	14	participate in the supervision of non-vocational extracurricular activities	2.756	Spurious* (I)
96	92	write articles for news releases	2.719	I
97	2	interpret the provisions of instructor tenure laws	2.631	Spurious* (V)
98	16	interpret the history of vocational education	2.419	I
99	43	interpret the history of education	2.194	I

* Spurious competencies were considered as those competencies with factor loadings of less than -.50.

CHAPTER V
CONCLUSIONS AND IMPLICATIONS

The Problem Restated

The central problem of this study was to determine the professional education competencies of selected community college vocational instructors. Respondents in the study included instructors of business and distributive education. Five major dimensions were considered:

1. the construction and validation of a Professional Education Competencies Instructor Questionnaire for community college vocational instructors;
2. the analysis of data to determine if there were any differences among the competency mean scores for the community colleges participating in the study;
3. the factor analysis of data to measure the extent to which respondents were alike or resembled each other in responding to the identified competencies;
4. the factor analysis of data to extract factors with common clusters or groupings of professional education competencies needed by community college instructors of business and distributive education;
5. the formulation of implications to be considered in the development of curriculum content, performance objectives,

and teaching strategies for teacher education institutions responsible for the preparation of community college instructors.

Procedures

The construction and validation of the instructor questionnaire were accomplished through a cooperative research effort by investigators of three concurrent companion studies. A review of related literature served as the basis for the initial identification of competencies to be included. A jury of experts representing each of the areas being researched evaluated the format, content, and clarity of the instructions and the competencies contained in the questionnaire. The questionnaire was field tested to determine whether or not any revisions were needed.

A mail survey questionnaire containing 99 professional education competencies together with a five-point Likert-type scale was used for the study. The dependent variable in the study was a score which was judgmentally assigned by respondents in the sample to denote the level of proficiency they felt was necessary for each of the 99 professional education competencies.

The study's population utilized the four western states of California, Colorado, Oregon and Washington. Forty community colleges, ten in each of the four states, were arbitrarily selected.

The sample for the study consisted of four randomly selected business or distributive education instructors from each of the community colleges identified in the population. Hence, the total sample consisted of 160 respondents.

The information from each returned questionnaire was checked, coded, and transferred to IBM cards for computer processing.

Analysis of the Data

The one-way classification analysis of variance measured community college differences and was used to test the hypothesis that there is no significant difference among community college responses. The test statistic used to analyze contrasts between the mean scores for each competency was the F statistic with the .01 level of significance being used to determine differences existing between the community colleges. A test of Least Significant Difference was used to determine where specific differences existed between means of community colleges which were rejected in the analysis of variance tests.

Further analysis of the data was accomplished through the use of two factor analytic techniques, the Q-technique and the R-technique. The Q-technique ordered respondents according to the 99 competencies included in the study. This analysis provided a measure of commonality among respondents and indicated the extent to which business and

distributive education instructors were alike or resembled each other. The R-technique was used to cluster competencies according to respondents. Competencies with rotated factor loadings of $-.50$ or higher were recorded as being clustered within a factor.

All of the 99 competencies were ranked according to mean scores. The ten highest ranked and ten lowest ranked competencies were identified and analyzed.

Factors and subfactor names were assigned after the data were analyzed. These names were arbitrarily assigned and the titles were assumed to be indicative of the nature of the competencies which loaded under each factor.

Conclusions

A number of conclusions may be drawn from the findings of this research on the common professional education competencies of community college instructors of business and distributive education. The considered judgment of the respondents regarding the level of proficiency needed by instructors for each of the 99 competencies is one approach to establishing meaningful teacher education programs designed to prepare professionally competent personnel. The following specific conclusions are a result of this endeavor.

1. The mail survey questionnaire containing 99 professional education competencies with a five-point Likert-type scale

was a satisfactory method of securing data for the study.

2. Generally, the testing of the competency mean scores indicated that the community colleges were alike in their responses. The one-way classification analysis was used to test the hypothesis that there is no significant difference among the competency mean scores for the 40 community colleges. The tests indicated that for 96 of the 99 competencies, the hypothesis was retained.
3. Factor analysis, using the Q-technique for measuring the commonality among respondents, revealed that community college instructors of business and distributive education were alike or resembled one another in their responses to the competencies contained in the instructor questionnaire.
4. Factor analysis using the R-technique was considered to be the most important procedure used in the study and resulted in the following findings:
 - A. Factors containing clusters or groupings of common professional education competencies can be generated through a method such as the R-technique used in this study. A five-factor solution generated factor loadings of $\geq .50$ or higher and accounted for 47 of the 99 competencies.
 - B. The factor containing the professional education

competencies with the lowest mean scores was that of Program Management which included the subfactors of Program Development, Program Operation and Program Coordination.

- C. Professional education competencies which clustered under the factors of Instructional Management and Teaching-Learning Process were judged by instructors to require a high level of proficiency.
 - D. The high standard deviations for competencies clustering under the factors of Program Management indicated a marked difference of opinion among the respondents concerning the level of proficiency needed in the performance of their jobs.
5. The ten professional education competencies requiring the highest level of proficiency when ranked according to mean scores are all competencies which may be considered to be directly related to effective instruction. Motivating the student in the classroom, shop, or laboratory was judged to be the competency requiring the highest level of proficiency on the part of the instructor.
 6. The ten competencies which ranked lowest according to mean scores were ones which were not directly related to the instructional process. The competency with the lowest

mean score was that of interpreting the history of education. Respondents believed that only slight proficiency was required to perform this competency.

7. Generally, respondents in the study felt that most of the competencies required a moderate or higher level of proficiency. In all, 91 of the 99 professional education competencies had mean scores in excess of 3.0.
8. The findings resulting from the research conducted in the present study indicate that Oregon State University is providing a pioneering effort in the development of a forward thrust designed to provide relevant in-service and pre-service teacher education programs for community college personnel.

Implications

As a result of the rapid growth of the community college movement, several colleges and universities are in the process of developing or improving pre-service and in-service programs for the preparation of community college instructors. An interpretation of the data collected and analyzed as a result of this research has significant implications for teacher education.

1. Teacher educators responsible for developing relevant programs designed to prepare community college instructors

should consider the reasoned judgment of practicing professionals as one means of identifying needed professional education competencies.

2. In most instances, the levels of proficiency needed to perform the professional education competencies were not significantly different among the community colleges studied.
★ Therefore, there is reason to believe that pre-service and in-service teacher education programs based upon common professional education competencies would provide satisfactory professional preparation to meet the needs of the community college instructors in all of the states participating in this study.
- ✓ 3. The high degree of commonality demonstrated by the 160 business and distributive education instructors in their responses to the 99 competencies should cause teacher educators to question the desirability of course or program proliferation frequently caused by separate departments for each of the vocational service areas.
4. A number of implications may be drawn from the findings reported as a result of R-technique factor analysis.
 - A. Factor analysis is an effective methodology for clustering common professional education competencies and may be used in developing programs of instruction

common to instructors of business and distributive education.

- B. Teacher education programs providing pre-service and in-service education for community college instructors should be based upon the common professional education competencies needed by the instructor to satisfactorily perform in his job. Such competencies could be used as criteria for the evaluation of existing program offerings.
 - C. The increasingly heavy demand for in-service programs to professionally prepare effective instructors in community colleges suggests that more attention should be given to instructor preparation. Results of this study indicate curricula should concentrate on the performance objectives which have a direct effect upon the competencies included under the factors of Teaching-Learning Process and Instructional Management.
5. Programs of teacher education should place increased emphasis on how students are motivated and on methods of providing individualized instruction to meet individual student needs.
 6. The adequacy of existing teacher education programs should be viewed in terms of what instructors are actually doing in

the performance of their jobs. It may well be that some practices or methods currently being used in teacher education programs need to be modified to more adequately relate to the competencies required on the job.

Suggestions for Further Study

Five suggestions are recommended for further study.

1. Data gathered as a result of the three concurrent companion studies should be analyzed for the purpose of identifying the common professional education competencies needed by community college instructors in all of the service areas studied.
2. Research should be conducted to determine the performance objectives and learning activities which will best prepare instructors to meet the levels of proficiency required for each of the professional education competencies.
3. Behavioral objectives and learning activities should be prepared and implemented on an experimental basis in teacher education programs responsible for the preparation of community college vocational instructors. Such programs should be evaluated using analysis of covariance.
4. An evaluation should be made of existing teacher preparation programs based upon the common professional education

competencies needed by community college instructors.

5. Research is needed to determine the professional education competencies needed by community college counselors and vocational administrators.

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APPENDICES

APPENDIX A

Oregon Business Education Council Members
Serving as Jury of Experts

Mrs. Illa Atwood
Business Education
Albany High School
Albany, Oregon

Mr. Leonard Carpenter
Assistant Director of
Career Education
Portland Public Schools
Portland, Oregon

Dr. Dorothy Hazel
Business Education
Linn-Benton Community
College
Albany, Oregon

Mr. John Holmstedt
Business Education
Clatsop Community
College
Astoria, Oregon

Mr. Jess Kauffman, Specialist
Business Education
Oregon Board of Education
Salem, Oregon

Mrs. Grace Palmer
Business Education
Beaverton High School
Beaverton, Oregon

Mr. Les Robertson
Business Education
Southern Oregon College
Ashland, Oregon

Mrs. Betty Pritchett, Director
Summer and Evening Program
Mt. Hood Community College
Gresham, Oregon

Mr. Sydney Thompson,
Specialist
Distributive Education
Oregon Board of Education
Salem, Oregon

Dr. Ted Yerian
Business Education
Oregon State University
Corvallis, Oregon

APPENDIX B

Instructor Questionnaire Revision Form

From: _____
 (name) (position) (institution)

SUBJECT: Suggested revisions to professional Education Competencies Instrument.

Item No.

Suggested Revisions

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Suggested Additions
(new items)

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Suggested Deletions

Item No.

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Note: If additional space is needed, please attach sheet to this memo.

APPENDIX C

Professional Education Competencies

of

Selected Community College

Vocational Instructors

INSTRUCTOR QUESTIONNAIRE

Oregon State University

(1970-1971)

Name
Community College
State

INSTRUCTOR QUESTIONNAIRE

The Professional Education Competencies of Selected Community College Instructors

Purpose of Questionnaire: The purpose of this questionnaire is to seek your assistance in providing information which will be useful in the development of curriculum for colleges and universities seeking to offer relevant teacher education courses and programs for community college instructors.

INSTRUCTIONS FOR COMPLETION OF THE QUESTIONNAIRE

- A. In the spaces provided below, check (x) the appropriate subject matter area in which you teach the majority of your courses.
- () Agriculture (Forestry, Horticulture, Production)
 - () Business and Office
 - () Distributive (mid-management and marketing)
 - () Health Occupations
 - () Home Economics
 - () Trade and Industrial
 - () Service Occupation
 - () Technical
 - () Other (specify) _____
- B. This questionnaire contains professional education competencies for community college instructors. You are being asked to indicate the level of proficiency YOU FEEL is NECESSARY for each competency in relation to YOUR JOB.
- C. Do not take too much time in thinking about any particular item. Please do not leave out any item--there are no right or wrong answers. We are primarily concerned with how YOU FEEL about the competencies needed by community college instructors.

- D. For each item please circle the rating (1, 2, 3, 4, 5) which most closely represents YOUR FEELING. If your exact feeling is not found in one of the choices, pick the one which comes closest to your true feeling.

Here is an example:

What proficiency must you have in your work as an instructor in the ability to:

1. develop objective tests to measure achievement

	<i>no</i>	<i>slight</i>	<i>moderate</i>	<i>considerable</i>	<i>complete</i>
	1	2	3	4	5

This person, in marking the "5" rating, felt that his job required complete proficiency with this activity.

PROFESSIONAL EDUCATION COMPETENCIES QUESTIONNAIRE

What proficiency must you have in your work as an instructor in the ability to:

- | | <i>no</i> | <i>slight</i> | <i>moderate</i> | <i>considerable</i> | <i>complete</i> |
|---|-----------|---------------|-----------------|---------------------|-----------------|
| 1. assist community college administrators initiate and maintain vocational programs | 1 | 2 | 3 | 4 | 5 |
| 2. interpret the provisions of instructor tenure laws | 1 | 2 | 3 | 4 | 5 |
| 3. conduct a shop or laboratory demonstration for an individual student | 1 | 2 | 3 | 4 | 5 |
| 4. involve yourself in civic community activities not directly related to the school | 1 | 2 | 3 | 4 | 5 |
| 5. promote and teach adult vocational programs | 1 | 2 | 3 | 4 | 5 |
| 6. ask questions during classroom presentations or demonstrations to aid student learning | 1 | 2 | 3 | 4 | 5 |
| 7. adapt your appearance and apparel to acceptable standards for instructors | 1 | 2 | 3 | 4 | 5 |
| 8. interpret the innovative provisions of the Vocational Act as amended in 1968 | 1 | 2 | 3 | 4 | 5 |
| 9. select appropriate equipment and supplies for instructional purposes | 1 | 2 | 3 | 4 | 5 |

What proficiency must you have in your work as an instructor in the ability to:

	<i>no</i>	<i>slight</i>	<i>moderate</i>	<i>considerable</i>	<i>complete</i>
10. arrange and conduct field trips	1	2	3	4	5
11. interpret the goals and objectives of vocational education	1	2	3	4	5
12. interpret the goals of general education	1	2	3	4	5
13. provide practical shop or laboratory experiences to enhance classroom learning	1	2	3	4	5
14. participate in the supervision of non-vocational extracurricular activities	1	2	3	4	5
15. aid the student in obtaining job placement after training	1	2	3	4	5
16. interpret the history of vocational education	1	2	3	4	5
17. relate technological advances to laboratory and classroom instruction	1	2	3	4	5
18. interpret state certification requirements for instructors	1	2	3	4	5
19. assist in the development of the total community college program	1	2	3	4	5
20. prepare budgetary requests for vocational programs	1	2	3	4	5
21. locate available standardized tests	1	2	3	4	5
22. secure on-the-job training positions for students	1	2	3	4	5
23. interpret the state specifications and requirements for vocational facilities	1	2	3	4	5
24. <u>develop</u> audio-visual materials for instructional purposes	1	2	3	4	5
25. interpret the philosophy of the comprehensive community college	1	2	3	4	5
26. <u>select</u> appropriate audio-visual materials for instructional purposes	1	2	3	4	5
27. revise courses in accordance with current occupational trends	1	2	3	4	5
28. maintain student performance or progress records	1	2	3	4	5
29. adhere to the code of ethics adopted in your community college	1	2	3	4	5
30. interpret the philosophy of the community college in providing vocational programs for the student	1	2	3	4	5
31. select textbooks and instructional materials for the classroom, shop or laboratory	1	2	3	4	5

What proficiency must you have in your work as an instructor in the ability to:

	no	slight	moderate	considerable	complete
32. develop <u>objective</u> tests to measure achievement	1	2	3	4	5
33. motivate students in the classroom, shop or laboratory	1	2	3	4	5
34. interpret the legal liabilities of a teacher	1	2	3	4	5
35. direct, advise, or promote student participation in competitive events or youth organizations related to vocational education	1	2	3	4	5
36. relate to students from different socio-economic backgrounds	1	2	3	4	5
37. utilize individualized instruction materials and techniques	1	2	3	4	5
38. relate the course of study to measurable performance objectives	1	2	3	4	5
39. interpret your vocational program to others	1	2	3	4	5
40. provide special training or assistance to disadvantaged and handicapped students	1	2	3	4	5
41. use the State Plan for Vocational Education in securing reimbursement for vocational programs	1	2	3	4	5
42. organize or work with local vocational advisory committees	1	2	3	4	5
43. interpret the history of education	1	2	3	4	5
44. build a display for instructional purposes	1	2	3	4	5
45. formulate your own educational philosophy	1	2	3	4	5
46. utilize state guidelines for curriculum planning	1	2	3	4	5
47. draw from personal avocational interests to enrich instruction	1	2	3	4	5
48. identify the similarities and differences between the goals of general and vocational education	1	2	3	4	5
49. develop classroom instruction based upon the individual needs of the learner	1	2	3	4	5
50. provide appropriate practice for development of the basic skills	1	2	3	4	5
51. relate the vocational program to other instructional programs	1	2	3	4	5
52. interpret the objectives of vocational education to others	1	2	3	4	5
53. break down an occupation or job into its component parts for instructional or guidance purposes	1	2	3	4	5

What proficiency must you have in your work as an instructor in the ability to:

	<i>no</i>	<i>slight</i>	<i>moderate</i>	<i>considerable</i>	<i>complete</i>
54. write performance objectives	1	2	3	4	5
55. conduct community surveys to improve instruction or plan programs	1	2	3	4	5
56. use the information contained in professional journals for personal improvement or improvement of instruction	1	2	3	4	5
57. assess the validity, reliability and difficulty of instructor-made tests	1	2	3	4	5
58. maintain a clean, orderly laboratory or classroom	1	2	3	4	5
59. teach at the student's level and rate of learning	1	2	3	4	5
60. utilize written shop, classroom, and laboratory equipment organizational plans	1	2	3	4	5
61. maintain student attention during classroom presentations or demonstrations	1	2	3	4	5
62. make a daily lesson plan	1	2	3	4	5
63. distinguish between two or more educational philosophies	1	2	3	4	5
64. maintain necessary report forms required by state or federal agencies	1	2	3	4	5
65. use a student-centered teaching style	1	2	3	4	5
66. identify students in need of counseling or guidance	1	2	3	4	5
67. participate in professional organizations related to your subject matter area	1	2	3	4	5
68. evaluate the effectiveness of a classroom or laboratory demonstration	1	2	3	4	5
69. use the results of standardized test scores for job placement	1	2	3	4	5
70. utilize the services of local and state vocational education agencies	1	2	3	4	5
71. use counseling techniques to help students solve personal and social problems	1	2	3	4	5
72. summarize classroom presentations	1	2	3	4	5
73. aid students in entering educational or occupational training programs beyond the community college level	1	2	3	4	5
74. develop performance tests to measure achievement	1	2	3	4	5

What proficiency must you have in your work as an instructor in the ability to:

	<i>no</i>	<i>slight</i>	<i>moderate</i>	<i>considerable</i>	<i>complete</i>
75. maintain discipline in the classroom, shop or laboratory	1	2	3	4	5
76. participate in outside trade, business, or professional organizations related to your subject matter area	1	2	3	4	5
77. lead a conference	1	2	3	4	5
78. develop student learning activities to facilitate instruction	1	2	3	4	5
79. communicate your ideas or point of view to other instructors or administrators	1	2	3	4	5
80. develop <u>subjective</u> tests to measure achievement	1	2	3	4	5
81. relate current events associated with your subject matter area to classroom instruction	1	2	3	4	5
82. inform students of the nature and requirements of specific occupations	1	2	3	4	5
83. interpret the socio-economic class structure of the local community in relation to students enrolled in vocational programs	1	2	3	4	5
84. identify acceptable community social behaviors for instructors	1	2	3	4	5
85. work cooperatively with people in the community	1	2	3	4	5
86. identify local community power structures and pressure groups	1	2	3	4	5
87. operate duplicating equipment	1	2	3	4	5
88. make use of available guidance and counseling services within the community college	1	2	3	4	5
89. interpret community college policies	1	2	3	4	5
90. provide programs for the student with special needs	1	2	3	4	5
91. use programmed learning materials	1	2	3	4	5
92. write articles for news releases	1	2	3	4	5
93. be stimulating in your work as an instructor	1	2	3	4	5
94. conduct follow-up studies for purposes of determining effectiveness of instruction	1	2	3	4	5
95. evaluate teaching effectiveness by measuring student achievement	1	2	3	4	5

What proficiency must you have in your work as an instructor in the ability to:

	<i>no</i>	<i>slight</i>	<i>moderate</i>	<i>considerable</i>	<i>complete</i>
96. articulate your instructional program with other educational institutions or agencies	1	2	3	4	5
97. interpret safety rules and regulations to students	1	2	3	4	5
98. screen and select students for your program	1	2	3	4	5
99. coordinate and supervise cooperative work experience programs	1	2	3	4	5

- - - - -

APPENDIX D

California Community Colleges
Participating in the Study

1. American River College
4700 College Oak Drive
Sacramento, California
95841
2. Butte College
2239 Midway
Durham, California
95938
3. Citrus College
18824 East Foothill
Boulevard
Azusa, California
91702
4. Foothill College
12345 El Monte Road
Los Altos Hills, California
94022
5. Fresno City College
1101 East University Avenue
Fresno, California
93704
6. Mt. San Jacinto College
21-400 Foothill Road
P. O. Box 248
Gilman Hot Springs,
California 92340
7. Orange Coast College
2701 Fairview Road
Costa Mesa, California
92626
8. Sacramento City College
3835 Freeport Boulevard
Sacramento, California
95822
9. San Bernardino Valley
College
701 South Mt. Vernon
Avenue
San Bernardino, Cali-
fornia 92403
10. Sierra College
5000 Rocklin Road
Rocklin, California
95677

APPENDIX E

Colorado Community Colleges
Participating in the Study

- | | |
|--|---|
| 11. Aims Community College
P. O. Box 69
Greeley, Colorado
80631 | 16. Community College of
Denver
West Campus
1209 Quail Street
Denver, Colorado
80215 |
| 12. Arapahoe Community College
5900 S. Santa Fe
Littleton, Colorado
81029 | 17. Lamar Community College
Lamar, Colorado
81205 |
| 13. Colorado Mountain
Community College
Leadville, Colorado
80461 | 18. Mesa Community College
Grand Junction,
Colorado
81648 |
| 14. Community College of
Denver
Central Campus
1250 Bannock
Denver, Colorado
80216 | 19. Northeastern Community
College
Sterling, Colorado
80751 |
| 15. Community College of
Denver
North Campus
1001 East 62nd Avenue
Denver, Colorado
80216 | 20. Trinidad State Junior
College
Trinidad, Colorado
81802 |

APPENDIX F

Oregon Community Colleges
Participating in the Study

- | | |
|--|--|
| 21. Blue Mountain Community College
2410 N. W. Carden Avenue
Box 100, Pendleton,
Oregon 97801 | 26. Lane Community College
4000 E. 30th Avenue
Eugene, Oregon
97405 |
| 22. Central Oregon Community College
College Way
Bend, Oregon
97701 | 27. Linn-Benton Community College
203 W. First Avenue
Albany, Oregon
97321 |
| 23. Chemeketa Community College
4389 Satter Drive N. E.
Salem, Oregon
97303 | 28. Mt. Hood Community College
26000 S. E. Stark
Gresham, Oregon
97030 |
| 24. Clackamas Community College
19600 S. Molalla Avenue
Oregon City, Oregon
97045 | 29. Portland Community College
12000 S. W. 49th Avenue
Portland, Oregon
97219 |
| 25. Clatsop Community College
16th and Jerome
Astoria, Oregon
97103 | 30. Southwestern Oregon Community College
Coos Bay, Oregon
97420 |

APPENDIX G

Washington Community Colleges
Participating in the Study

- | | |
|--|---|
| 31. Centralia Community College
P. O. Box 639
Centralia, Washington
98531 | 36. Olympic College
1519 Chester Avenue
Bremerton, Washington
98310 |
| 32. Columbia Basin Community College
2600 N. Chase Avenue
Pasco, Washington
99301 | 37. Peninsula College
Laurisdan and Ennis
Port Angeles, Washington
98362 |
| 33. Green River Community College
12401 S. E. 320th Street
Auburn, Washington
98002 | 38. Shoreline Community College
16101 Greenwood Avenue
N.
Seattle, Washington
98133 |
| 34. Highline Community College
S. 240th at Pacific Hwy. S.
Midway, Washington
98031 | 39. Spokane Community College
E. 3403 Mission Avenue
Spokane, Washington
99204 |
| 35. Lower Columbia Community College
1600 Maple Street
Longview, Washington
98632 | 40. Walla Walla Community College
340 South Park
Walla Walla, Washington
99362 |

APPENDIX H

Q-Mode Control Cards

7 JOB, 708054, XXXX, JACK D. MILLER
 8*FORMS, 61
 7 TIME=1800
 8 MFBLKS=500
 CONTROL CA 8 COPY, =80
 *GO
 *DATA, TRANS, CARDS=2, ITEMS=99, OUTPUT.
 *CORR, QMODE, DIAG-ONE, OUTPUT.
 *FACTOR, NUMFAC=8, EIGEN, OUTPUT.
 *ROTATE, VARI, OUTPUT.
 *PROJECT, OUTPUT.
 *TITLE BEDPROF ED COMP
 *LABEL, G001\$G002\$G003\$ G01\$
 G015\$ G030\$
 G031\$ G046\$
 G047\$ G062\$
 G063\$ G078\$
 G079\$ G094\$
 G095\$ G110\$
 G111\$ G126\$
 G127\$ G142\$
 G143\$ G158\$
 G159\$ G160\$
 *FORMAT (9X, 71F1.0/9X, 28F1.0)
 Data cards inserted here
 **
 88
 8REWIND 80 8*FAST 8LOGOFF

APPENDIX I

R-Mode Control Cards

```

JOB, 708054, XXXX, JACK D. MILLER
*FORMS, 61
TIME=1000
MFBLKS=500
COPY, =80
*GO
*DATA, CARDS=2, ITEMS=99, OUTPUT.
*CORR, RMODE, DIAG=ONE, PRINTCUT=BOTH, OUTPUT.
*FACTOR, NUMFAC=8, EIGEN, OUTPUT.
*ROTATE, VARI, OUTPUT.
*PROJECT, OUTPUT.
*TITLE BEDPROF ED COMP
*LABEL, SO1$SO2$SO3$ . . . . .S18$
S19$ . . . . .S38$
S39$ . . . . .S58$
S59$ . . . . .S78$
S79$ . . . . .S98$
S99$.
*FORMAT (9X, 71F1.0/9X, 28F1.0)
*END
Data cards inserted here
**
REWIND, 80
FAST
LOGOFF

```

APPENDIX J

The California Junior College R and D
Committee Response Letter

December 1, 1970

AIRMAIL

Dr. Jack D. Miller
309 Waldo Hall
Oregon State University
Corvallis, Oregon 97331

Dear Dr. Miller:

The California Junior College Association R and D Committee met yesterday in San Francisco and the group was requested to submit names of potential participants for the vocational education study. Following Lee Stevens' suggestion, we should include the following colleges:

American River College	
Sacramento City College	
Cosumes River College	Contact: Lorine Aughinbaugh
Shasta College	
Redding, California	Contact: Walter Brooks
Foothill College	
De Anza College	Contact: Lee Stevens
Santa Barbara City College	Contact: Tom MacMillan
College of San Mateo	Contact: Bill Wenrich
Napa College	Contact: Arlin Taylor
San Diego Community College	Contact: Otto Heinkel
El Camino College	Contact: Jerry Garlock
San Jose City College	Contact: Paul Preising
Cabrillo College	Contact: John Hinton

Dr. Jack D. Miller
December 1, 1970

Page Two

We will contact Lloyd Messersmith, Director of CJCA, immediately to confirm our endorsement of the research proposal. I would recommend that you send a copy of the instructional questionnaire to each of the contact people prior to contacting the three vocational instructors individually.

The R and D Committee will not be able to provide lists of the vocational education on each of the campuses, but we are sure that a telephone call to each of the contact people will get the list to you as quickly as possible. We recommend that either you or Lee make the individual campus contacts.

It would be nice if you shared the results of the study with us. I look forward to working with you on the project. Please feel free to contact me if you need any additional help.

Very truly yours,

Thomas F. MacMillan, Ed. D.
Chairman
R and D Committee

Letter Mailed to Community College Presidents

OSU**OREGON STATE UNIVERSITY**

SCHOOL OF EDUCATION

CORVALLIS, OREGON 97331 November 5, 1970

Dr. Ed K. Erickson
President
Washington Community College District VI
College Administration Center
1718 Broadway
Seattle, Washington

Dear Dr. Erickson:

The Division of Vocational, Adult and Community College Education at Oregon State University is in the process of developing a program for community college vocational instructors. Instructors in four states, California, Colorado, Oregon and Washington will be surveyed to determine the common professional education competencies needed by community college vocational instructors. This represents the first step of a comprehensive plan to develop a performance based curriculum at the university level. The data you provide will have significant implications for curriculum development relative to the preparation of community college vocational staff.

Instructors from participating community colleges will be randomly selected and asked to complete a questionnaire. A copy of the questionnaire is enclosed for your review. A summary of the findings will be made available to all participants however the names of institutions and respondents will not be identified in the final report. Our schedule calls for this questionnaire to be mailed to respondents by the first week in December and to be returned by December 18.

Mr. Richard Moe, Assistant Director for Instruction, Washington State Board for Community Colleges, has indicated that he is supportive of our efforts and has encouraged our contacting you for the purpose of soliciting your cooperation. Dr. Erickson, your help is needed and we would appreciate the approval of your institution's participation.

Enclosed is a self-addressed response card to indicate your willingness to participate. We shall be looking forward to hearing from you at your earliest convenience.

Thank you,
Redacted for Privacy

Dr. Henry TenPas, Director
Division of Vocational, Adult and
Community College Education

mlo

Enclosures

APPENDIX L

Response Cards Mailed to
Community College Presidents

Division of Vocational, Adult and
Community College Education
Waldo Hall 309
Oregon State University
Corvallis, Oregon 97331

_____ Community College
(will) (will not) participate in the study.

Signed _____

Title _____

Please list the name of the staff member with whom we
should communicate.

Name _____

Title _____

Letter Mailed to Respondents in the Study

OSU

CORVALLIS, OREGON 97331

OREGON STATE UNIVERSITY
SCHOOL OF EDUCATION

December 5, 1970

Research is currently underway at Oregon State University to determine the professional education competencies needed by community college instructors. Your community college is one of 40 community colleges in four western states selected to participate. Your college administration, as well as the appropriate state agency, has been contacted and in both cases have given their support to this research. They encourage your participation. The data you provide will have significant implications for curriculum development relative to the preparation of community college instructors.

We are aware of the demands on your time and are very appreciative of your professional assistance. The enclosed questionnaire takes only a few minutes to complete and should be returned in the enclosed self-addressed stamped envelope. Your early response by December 18 is appreciated.

Although names of institutions or respondents will not be identified in the final report, a summary of the findings will be made available to all participants.

Cordially,
Redacted for Privacy

Jack D. Miller
Division of Vocational, Adult and
Community College Education
309 Waldo Hall

JDM/mjs
Encs:

Initial Follow-up Memorandum Mailed to Respondents

OSU

OREGON STATE UNIVERSITY

SCHOOL OF EDUCATION

CORVALLIS, OREGON 97331

December 11, 1970

TO:

FROM: *Jack D. Miller*
Division of Vocational, Adult,
and Community College Education
Waldo Hall 309
Oregon State University
Corvallis, Oregon 97331

SUBJECT: Professional Education Competencies
Instructor Questionnaire

We recently mailed to you a questionnaire requesting your help in evaluating a list of professional education competencies for community college instructors. The data you provide will be extremely useful in the development of community college curricula. If you have already completed and returned the questionnaire, please consider this memorandum as an expression of our appreciation.

If you have not responded please do so within the next few days. For your convenience we have enclosed another questionnaire in the event that the first one was misplaced. Please send the completed questionnaire to the above address.

Thank you again for your cooperation!

Second Follow-up Memorandum Mailed to Respondents

OSU

CORVALLIS, OREGON 97331

OREGON STATE UNIVERSITY

SCHOOL OF EDUCATION

December 18, 1970

TO:

FROM:

Jack Miller
Division of Vocational, Adult,
and Community College Education
Waldo Hall 309
Oregon State University
Corvallis, Oregon 97331

SUBJECT: Professional Education Competencies
Instructor Questionnaire

We recently mailed to you a questionnaire requesting your help in evaluating a list of professional education competencies for community college instructors. The data you provide will be extremely useful in the development of community college curricula. If you have already completed and returned the questionnaire, please consider this memorandum as an expression of our appreciation.

If you have not responded please do so within the next few days by sending the completed questionnaire to the above address. It is only through your cooperation that this research project will be successful.

Thank you again for your cooperation!

APPENDIX P

Coding of Data Cards

Data for each of the 160 respondents was coded on two cards as follows:

A) Card 1

<u>Column</u>	<u>Code</u>
1-4	G001 to G160. Represents one of the 160 instructors.
5-6	1 to 40. Represents one of the 40 community colleges.
7	1 to 4. Represents one of the four states.
8	1 to 8. Represents one of the eight subject matter areas in which respondents taught.
9	1. Data card number one.
10-80	Data. Response values of 1, 2, 3, 4, or 5 which were assigned to 71 competencies.

B) Card 2

<u>Column</u>	<u>Code</u>
1-8	Same as above.
9	2. Data card number two.
10-37	Data. Responses values of 1, 2, 3, 4, or 5 which were assigned to 28 competencies.

APPENDIX Q

Results of Analysis of Variance Using the F Statistic.*

Competency	Computed F	Hypothesis	Competency	Computed F	Hypothesis
1	.639	retain	44	1.622	retain
2	.916	"	45	1.156	"
3	1.107	"	46	1.404	"
4	1.591	"	47	.881	"
5	.740	"	48	1.346	"
6	.712	"	49	1.124	"
7	.952	"	50	1.158	"
8	.694	"	51	1.729	"
9	.800	"	52	.944	"
10	1.525	"	53	.878	"
11	1.260	"	54	1.090	"
12	.850	"	55	1.008	"
13	1.002	"	56	1.486	"
14	1.165	"	57	1.381	"
15	1.515	"	58	.865	"
16	1.213	"	59	.876	"
17	1.393	"	60	1.841	reject**
18	1.252	"	61	.960	retain
19	.901	"	62	1.131	"
20	1.072	"	63	1.140	"
21	1.265	"	64	.871	"
22	1.168	"	65	.815	"
23	.782	"	66	1.073	"
24	.982	"	67	1.421	"
25	.996	"	68	1.234	"
26	2.216	reject**	69	.834	"
27	.914	retain	70	1.583	"
28	1.205	"	71	.985	"
29	.897	"	72	1.163	"
30	.933	"	73	.911	"
31	1.167	"	74	1.789	reject**
32	1.748	"	75	1.108	retain
33	.872	"	76	1.421	"
34	1.322	"	77	.939	"
35	1.119	"	78	.814	"
36	.795	"	79	.940	"
37	.917	"	80	.892	"
38	1.302	"	81	.771	"
39	1.197	"	82	.939	"
40	1.057	"	83	1.490	"
41	1.130	"	84	1.275	"
42	.684	"	85	.618	"
43	1.062	"	86	1.092	"

(Continued on next page)

Appendix Q. (Continued)

Competency	Computed F	Hypothesis	Competency	Computed F	Hypothesis
87	1.198	retain	93	1.207	retain
88	1.238	"	94	1.171	"
89	.989	"	95	1.073	"
90	.971	"	96	.950	"
91	.923	"	97	1.252	"
92	.872	"	98	.683	"
			99	1.003	"

* The level of significance was the .01 level and the critical region with 40 degrees of freedom for the numerator mean square and 120 degrees of freedom for the denominator mean square was $F = 1.76$.

** The least significant difference test (L. S. D.) was used to compare means for the rejected items.

APPENDIX R

Test of Least Significant Difference
for Competency 26

Mean	Community college	Mean	Community college
5.00	4	4.00	37
4.75	1	3.75	5
4.75	9	3.75	20
4.75	10	3.75	23
4.75	34	3.75	25
4.50	2	3.75	26
4.50	12	3.75	27
4.50	22	3.75	29
4.50	24	3.75	31*
4.50	28	3.50	21
4.25	3	3.50	38
4.25	6	3.50	39
4.25	16	3.25	15
4.00	7	3.25	17
4.00	8	3.25	18
4.00	11	3.25	35
4.00	13	3.25	36
4.00	19	3.25	40
4.00	30	3.00	14
4.00	32	3.00	33

* At the .01 level, the computed F of 2.22 is greater than the tabular F of 1.76 resulting in a rejection of the test of significance. The computed L. S. D. is 1.26. The 3.75 mean score reflects the lowest point at which there is no significant difference. All responses below the 3.75 level exceed the computed L. S. D. of 1.26.

APPENDIX S

Test of Least Significant Difference
for Competency 60

Mean	Community college	Mean	Community college
4.75	1	3.75	29
4.75	10	3.75	36
4.75	35	3.50	3
4.50	6	3.50	17
4.25	19	3.50	32
4.25	22	3.50	38
4.25	24	3.25	8
4.25	26	3.25	9
4.25	27	3.25	23
4.25	31	3.25	34*
4.25	40	3.00	15
4.00	2	3.00	25
4.00	4	3.00	33
4.00	7	3.00	39
4.00	11	2.75	5
4.00	16	2.75	12
4.00	37	2.75	20
3.75	13	2.75	21
3.75	14	2.75	28
3.75	18	2.75	30

* At the .01 level, the computed F of 1.84 is greater than the tabular F of 1.76, resulting in a rejection of the test of significance. The 3.25 mean score reflects the lowest point at which there is no significant difference. All responses below the 3.75 level exceed the computed L. S. D. of 1.66.

APPENDIX T

Test of Least Significant Difference
for Competency 74

Mean	Community college	Mean	Community college
5.00	8	4.25	25
5.00	20	4.25	26
4.75	1	4.25	35
4.75	6	4.25	39
4.75	24	4.25	40
4.75	27	4.00	3
4.75	28	4.00	7
4.75	32	4.00	17
4.75	34	4.00	18
4.75	38	4.00	22
4.50	4	4.00	23
4.50	5	4.00	30
4.50	10	4.00	37
4.50	11	3.75	13
4.50	29	3.75	21
4.50	31	3.75	33*
4.25	2	3.50	36
4.25	9	3.25	15
4.25	14	3.00	12
4.25	19	2.75	16

* At the .01 level, the computed F of 1.79 is greater than the tabular F of 1.76 resulting in a rejection of the test of significance. The 3.75 mean score reflects the lowest point at which there is no significance. All responses below the 3.75 level exceed the computed L. S. D. of 1.39.

APPENDIX U

Results of Q-mode Analysis

Respondent number	Factor loading	Respondent number	Factor loading	Respondent number	Factor loading
001	.991	038	.984	075	.979
002	.989	039	.986	076	.972
003	.984	040	.936	077	.954
004	.968	041	.944	078	.971
005	.986	042	.972	079	.989
006	.993	043	.989	080	.971
007	.983	044	.985	081	.961
008	.984	045	.967	082	.980
009	.951	046	.970	083	.952
010	.986	047	.973	084	.976
011	.933	048	.975	085	.988
012	.979	049	.987	086	.977
013	.958	050	.978	087	.988
014	.966	051	.981	088	.989
015	.981	052	.980	089	.974
016	.975	053	.947	090	.990
017	.987	054	.976	091	.978
018	.993	055	.988	092	.883
019	.980	056	.922	093	.988
020	.876	057	.977	094	.978
021	.985	058	.978	095	.982
022	.965	059	.980	096	.982
023	.959	060	.957	097	.958
024	.979	061	.981	098	.985
025	.977	062	.976	099	.954
026	.970	063	.947	100	.973
027	.971	064	.973	101	.945
028	.969	065	.987	102	.989
029	.984	066	.971	103	.981
030	.969	067	.988	104	.974
031	.944	068	.979	105	.964
032	.987	069	.982	106	.980
033	.918	070	.982	107	.991
034	.979	071	.976	108	.982
035	.960	072	.982	109	.908
036	.965	073	.992	110	.980
037	.980	074	.988	111	.982

(Continued on next page)

Appendix U. (Continued)

Respondent number	Factor loading	Respondent number	Factor loading	Respondent number	Factor loading
112	.982	128	.975	144	.971
113	.983	129	.980	145	.985
114	.989	130	.965	146	.990
115	.949	131	.961	147	.976
116	.983	132	.981	148	.987
117	.973	133	.983	149	.980
118	.969	134	.984	150	.955
119	.962	135	.972	151	.976
120	.978	136	.967	152	.975
121	.952	137	.986	153	.982
122	.975	138	.985	154	.975
123	.980	139	.976	155	.978
124	.985	140	.987	156	.976
125	.981	141	.971	157	.987
126	.984	142	.979	158	.973
127	.912	143	.983	159	.989
				160	.982