

AN ABSTRACT OF THE THESIS OF

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TITLE: COMMONALITIES IN THE PROFESSIONAL EDUCATION COMPETENCIES OF
SELECTED COMMUNITY COLLEGE VOCATIONAL INSTRUCTORS

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Abstract Approved: _____
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The purpose of this research was to determine, if there are and the nature of, the common professional education competencies of selected community college vocational instructors. The respondents in the study represented four instructors from each of 40 community colleges selected from the four western states of California, Colorado, Oregon and Washington. The respondents were selected from the vocational program areas of agriculture, health, home economics, and service occupations.

Five major dimensions were included in the study: 1) Construction of a professional education competency questionnaire. 2) Data analysis to determine if significant differences existed among the competencies for the community college. 3) Factor analysis of data to determine the common professional education competencies needed by community college vocational instructors. 4) Factor analysis of data to determine the extent of resemblance between the instructors according to ratings given to professional education competencies. 5) The formulation of implications to be considered in the professional development of community college vocational instructors.

The dependent variable in the study was a score judgmentally assigned by respondents to a five-point Likert-type scale for each of the 99 professional education competencies included in the mail-survey questionnaire. The data resulting from the 160 responses to the questionnaire were analyzed for variance with rejected competencies tested for least significant differences.

The major interest in the study was to factor analyze the data using both the R- and Q-techniques. The Q-technique ordered respondents according to competencies, while the R-technique ordered competencies according to factor loadings. The R-technique factor analysis was programmed to compute a six-factor solution. This procedure yielded five interpretable factors, 54 competencies receiving factor loadings at a significant level for inclusion in the factors (clusters).

Analysis of data revealed that there was no significant difference among the mean scores for community colleges and that commonality existed among the vocational instructors in these colleges in terms of responses to competency items. The data further revealed that the most important competencies were those relating to instructional management, such as teaching and guidance strategies. Lowest ranking competencies were those relating to program management, including interpretation of history, philosophy, requirements, and laws dealing with education.

The generated commonalities indicate that community college vocational instructors, regardless of program area, state, or college, need proficiency in a common core of performance-based professional education competencies.

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of Selected Community College
Vocational Instructors

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COMMONALITIES IN THE PROFESSIONAL EDUCATION COMPETENCIES OF SELECTED COMMUNITY COLLEGE VOCATIONAL INSTRUCTORS

CHAPTER I

INTRODUCTION

The Problem

If there is one dominant theme in vocational education today, it is the pursuit of excellence, serving the needs of all without sacrificing quality. Teacher education must continue to play a leading role in this search for excellence. The future of vocational education will be determined in large measure, by the program of teacher education, p. 28.

Dr. William B. Logan (1968), past President of the American Vocational Association made the above statement at a recent national seminar on vocational teacher education and it sets the tone for this study.

Dr. Logan stated that the preparation of community college instructors for the future must be given specific attention. The professional preparation must concern itself with providing all the experiences required by the nature of the level of operation. Again, it is the individual needs of the group to be served that should dictate the nature of the preparation.

The Oregon Board of Education (1970) priorities express a real need to know more about teacher competencies and performance factors. The priorities further state that instructors need to be trained to perform those activities which they will be doing on the job as instructors.

The broad objective concerning teacher education as set forth by the Oregon Board of Education is:

Assure that Oregon teachers are qualified through training, experience, and competence for the responsibilities they hold; place greater stress on the 'performance' factor in teacher education and certification, p. 1.

Purpose of the Study

The purpose of this study was to determine the common professional training needs and proficiency requirements of selected community college instructors. Respondents in the study were instructors who teach in the following areas: agriculture, health, home economics, and service occupations vocational programs.

In this study 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 significant differences existed among the competency mean scores for the community colleges.
3. The factor analysis of data to determine the common professional education competencies needed by community college vocational instructors of the selected vocational program areas.
4. The factor analysis of data to determine the extent of resemblance between the instructors according to ratings given professional education competencies.

5. The formulation of implications to be considered in the development of curriculum content, performance objectives, and teaching strategies for community college vocational teacher education courses.

The Background

The need for highly qualified faculty is a problem at all levels of education as viewed by Zane (1969). This need is especially evident at the community college level. No other segment of American education has approached its growth in programs or enrollments in recent years. The turn of the century saw only eight such colleges, with fewer than 100 students. Ten years ago there were 677 community colleges with 905,062 students enrolled. Today there are approximately 1000 community colleges in the United States with over 84,427 teachers. These schools enrolled over 1,954,116 students. It is predicted that by 1980, student enrollment is expected to swell beyond 3,000,000 in 1,200 community colleges. This increase means that nearly one of every two students entering higher education will enter the community college. Furthermore, at the present rate of growth, junior community colleges will require between 7,000 to 10,000 teachers yearly or nearly 100,000 by 1980.

According to the Carnegie Commission on Higher Education (1970), occupational programs in community colleges are constantly increasing in scope and variety. The larger and more complex the labor market, the more varied the occupational curriculum of the community college is likely to be.

The commission stated that although enrollment in transfer programs was predominant throughout the 1960's, there was an increase in the proportion of students enrolled in occupational programs in the same period, perhaps one third or more of all students enrolled. Because of this increase in occupational education the commission made the following formal recommendation:

The commission recommends coordinated efforts of the federal, state, and local levels to stimulate the expansion of occupational education in community colleges and to make it responsive to changing manpower requirements, p. 21.

The Annual Descriptive Report on Vocational Education of the Oregon Board of Education (1970) states that during the 1969-70 school year, 20,785 full-time equivalent students were enrolled in lower division transfer, vocational preparatory, and vocational supplementary state reimbursed programs in Oregon's 12 community colleges. Of this total, 10,180 were enrolled in vocational preparatory and supplementary programs.

The number of vocational teachers in community colleges was 414 full-time and 762 part-time instructors during the 1969-70 school year. Continued expansion is expected in the future with proportionally increased demands for instructors.

The Need

Courtney (1966) and Hammond (1970) et al., have stated that no area of vocational education is in greater need of creative examination and development than teacher education. The need is urgent for colleges and universities with vocational education programs to launch a vigorous, imaginative, and comprehensive approach to teacher education in a variety

of levels and occupational fields. If teacher education programs are going to make any measurable dent in the preparation of faculty for the community college, they must develop a student-centered performance-based program. The future of vocational education rests largely on the kind of teachers and other professional personnel that are prepared.

Logan (1968) stated that it is unknown whether the same program of preparing high school vocational teachers can be used effectively for those who aspire to teach in the community college. It will be necessary to identify the unique skills and knowledge needed by these instructors and to plan curriculum accordingly.

The specific recommendations for action in career education as stated in the first annual evaluation report of the Oregon Governor's Advisory Council (Baker, 1970) present teacher education with three additional challenges for vocational education:

1. The Oregon Board of Education should make herculean efforts to expand, intensify, and improve career education programs from kindergarten through graduate school (including teacher education) p. 4.
2. The Board should take prompt and decisive action to precipitate major expansion, change and improvement in pre-service career teacher education, p. 5.
3. The Board should promote changes in teacher education to emphasize performance rather than the lock-step for four or five years procedure which has been so prevalent, p. 5.

Investigator's Role

The comprehensive nine year study of professional vocational teacher educator competencies being conducted by the Center for Study in Vocational-Technical Education at the Ohio State University by Cotrell and Miller (1969) and the professional education secondary school vocational instructor competency studies at Stout State University by Halfin and Courtney (1970) were identified as valid base studies to build upon. While the Halfin-Courtney study stressed the secondary school level, the Cotrell-Miller study stressed the professional education level, identifying the very obvious need for research at the community college level. Because of the magnitude of the needed research, three companion concurrent studies were designed by Gunderson (1971), Miller (1971), and Lindahl (1971). A flow chart depicting the relationship of the studies is shown in Appendix A.

Procedure

To build upon the recent and relevant research, this investigation specifically selected community college vocational instructor professional education competencies for further study. The Cotrell-Miller and the Halfin-Courtney studies drew heavily upon eastern and southern states for their populations, and it was determined that a western region study would add a useful geographical dimension for purposes of curriculum development in Oregon.

A review of the related literature assisted in the development of the instrument and research design. A panel of experts tested the survey questionnaire of 99 items and it was pilot tested on 21 community

college instructors, before being administered to the sample of 160 randomly selected community college vocational instructors from the four western states including California, Colorado, Oregon, and Washington. The population consisted of ten community colleges selected from each of the four states.

Instructors were asked to rate each professional education competency item on a five-point Likert-type scale. The dependent variable in this study then became this score, judgmentally assigned by the respondents denoting their respective feelings about the necessity for the competency. The basic data analysis design for the study was a factor analysis utilizing both the Q- and R-techniques. A one-way analysis of variance was used to test for community college effect and the test for Least Significant Difference was conducted on the rejected competencies.

Definition 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. Agricultural education - vocational education concerned with the production of food and fiber, as well as the processing, distribution, management, and services related to such production. It is formalized and systematic instruction designed for students who wish to explore or enter the agricultural work force. For purposes of this study, forestry and wood product instructors were included.

2. Behavioral Objectives - A well defined expected behavior outcome which meets specific criteria of design based on a learning experience.
3. Cluster is a matrix of competencies whose inter-correlations are high and positive or negative with factor loadings of $\pm .50$ or higher. A cluster is also referred to as factor.
4. 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.
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 among the junior college, the community college, and the comprehensive community college.
6. 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.

7. Factor loading is the correlation of any particular competency with the other competencies being extracted in the same factor.
8. Factor solution refers to the number of factors the computer program was set to generate. The different factor solutions were studied in accordance with pre-set criteria in order to select the most appropriate numbers of factors for analysis.
9. Health Occupations - An organized instructional program designed to prepare pupils for occupational objectives concerned with assisting qualified personnel in providing diagnostic, therapeutic, preventive, restorative, and rehabilitative services to people, including understandings and skills essential to provide care and health services to patients.
10. Home Economics - Home economics comprises the group of related courses or units of instruction organized for purposes of enabling pupils to acquire knowledge and develop understanding, attitudes, and skills relevant to (a) personal, home, and family life, and (b) occupational preparation using the knowledge and skills of home economics.

11. Jury of Experts - Individuals recognized by others in their respective program areas as being knowledgeable of community college vocational instructors professional education competencies. The five-member panel used in this study consisted of one representative from each of the program areas under investigation in this study plus one member at large with a broad across-the-program area experiences.
12. Professional Education Competency refers to a specific knowledge, understanding, task, duty, responsibility, or expected behavior needed by a vocational instructor in the performance of his job.
13. Proficiency is the level or degree of expertness required in the performance of a professional education competency.
14. Q-Technique is a factor analytic method which correlates persons, in this instance respondents, by working out all the correlations among the rows instead of among the columns resulting in a correlation matrix among people.
15. R-Technique is a factor analytic method 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. The literature frequently refers to the R-technique as the R-mode.

16. Service Occupations - Planned learning experiences concerned with the following:
1. Training for the performance of occupations in local, state, and federal government agencies. These occupations usually are concerned with specialized activities normally limited to local, county, state, and federal governments.
 2. Rendering a variety of personal services related to the physical appearance or comfort of individuals.
17. 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 may be less than $\pm.50$.
18. Uninterpretable factor is a rotated factor generated with no competency items receiving factor loadings of $\pm.50$ or larger.
19. Vocational education as used in this study is intended to encompass such terms as occupational education, career education, and technical education and refers to courses, programs, and related instruction designed to prepare the learner for job entry into an occupation or advancement in a current job.
20. Vocational instructor in this study is limited to an individual who, in completing the instructor questionnaire, has identified his primary teaching responsibility

to be in one or more of the specialized program areas of vocational education representing agriculture, health, home economics, or service occupations.

21. Vocational Program area, Occupational area, Category, Group - These terms are used synonymously in referring to one of the four instructor groups of agriculture, health, home economics, and service occupations.

Possible Implications

Elizabeth J. Simpson (1970), past president of the American Vocational Association, in writing concerning commonalities of instructor competence, stated that there are good reasons to bring together the various program areas of vocational education regardless of the level of professional preparation and that it is an educationally sound practice. The vocational program areas have much in common in their related objectives, knowledge, and methodology.

Simpson stated that by taking these commonalities into account, curriculum planning, organization and administration, and classroom instruction can result in enrichment of the learning situation, particularly with respect to helping students see relations and making application of learning . . . Greater economy and efficiency in relation to staff utilization and funds can result . . . Cooperative efforts can contribute toward the good of serving the needs of people rather than programs.

Venn (1970) in "Man, Education, and Manpower", adds still another implication:

The next three decades, or less, will determine if our educational system will change enough to serve all of the people and the manpower needs of a nation which has little use for the uneducated and unskilled. Or will another social system or institution replace the schools as the instrument of education for many of our citizens? p. 69.

CHAPTER II

REVIEW OF RELATED LITERATURE

In order to obtain a thorough understanding of the problem, literature dating from the late 1940's to 1970's was studied. A review of the "Educational Index", "The Reader's Guide to Periodical Literature", "Dissertation Abstracts", "Encyclopedia of Education Research", "Research Studies in Education", "Education Research Information Center", and a review of texts written on the subject of job and factor analysis and teacher education were made.

Research within the Program Areas

Holloway and Kerr (1969) in their review and synthesis of research in health occupations, which was a very extensive review of all health occupations research over the last several years, found that there appeared to be no health occupations teacher education research or studies which tried to analyze the competencies necessary for a successful health occupation's instructor at the community college level or at any level. There were some studies to examine the basic learning process as well as teaching methods and approaches to teaching within the health occupations. However, The Research Foundation (1970) in a health services mobility study reports on-going progress in a very extensive investigation to identify common tasks and skills in the various allied health occupations. This investigation revealed that a factor analysis using a Varimax rotation was appropriate. Four interpretable factors were generated.

Dunlap (1964) found a definite need for special preparation of the faculty for associate-degree programs in nursing. The majority of the associate-degree nursing programs are found in the community colleges. Also to support this, Kinselle (1967) found that community college nursing faculties lacked an understanding in a common concern for the community college philosophy and its objectives. There was no unanimity in the role of the community college nursing instructors. To further support this finding, Birmingham (1967) in her study showed a need for a strong orientation program in the area of community college philosophy and individual needs. O'Laughlin (1967) did an extensive study of team teaching within health occupations at the community college level and found that the instructors definitely needed help in their teaching methods and particularly in the area of team teaching.

In the final report of an institute conducted at Iowa State University, Holloway (1968) indicated that health occupations instructors needed help in writing and using behavioral objectives, selecting the appropriate types of learning experiences and decision-making based upon the knowledge of the learning process.

The foregoing mentioned health occupations studies tend to support the need for additional studies in specific competencies of community college instructors with reflections on specific teacher-training programs for these instructors.

Studies reviewed in vocational agriculture did not reveal specific competencies of community college instructors. Sidney (1968), however, reports on a series of regional national institutes held under the title of "Methods of Teaching Agricultural Occupations in Community Colleges

and Area Vocational Schools". He expressed a need for a strong orientation program to post-high school vocational education with emphasis upon the community college philosophy, job analysis, and student placement of community college agricultural-related graduates.

Dillan (1965) in a comparison of certain abilities needed for workers in licensed nurseries and licensed ornamental horticulture businesses found that 30 percent of the curriculum could be overlapped. He also indicated that further study would show that there would be overlaps with other areas of training in agriculture on the post-secondary level.

Research within the program area of home economics related to community college instructor competencies has been limited. However, Hoeflin (1970) reported success in training community college instructors through the assistance of a grant from the Educational Professions Development Act. The results of this Kansas-based program indicated that accelerated growth and development of participants occurred, a closer relation between Higher Education and Community Colleges was achieved and a higher quality of graduate was produced.

A competency-oriented individualized continual progress vocational teacher education project is underway at Oregon State University. The Division of Vocational, Adult and Community College Education (1970) stated that the purpose of this Proposal for Change is to build an empirically-based training program which is validly related to those tasks which the beginning teacher will find himself confronted within the actual teacher-learning process.

Methodological Studies

A study by Halfin and Courtney (1970) entitled "The Identification of the Common Professional Training Requirements of Vocational Education Teachers" is basic. This study was conducted at Stout State University in Wisconsin, sponsored by the Board of Regents of the Wisconsin State Universities. The major interest of this study was directed toward determining the common training requirements of the secondary-level vocational education teachers. The plan of this study was to factor-analyze the responses of 150 randomly selected vocational teachers representing each geographical region encompassing ten states. Proficiency scores were obtained from the responses using a vocational education training needs instrument, which was developed earlier by Courtney and Halfin. Through the use of the theoretical teacher model and a series of factor analysis procedures, a common core of curriculum experiences was identified for the choice of occupational subjects. The ten-state study utilized a Likert-format instrument and factor analysis which rotated the 130 items orthogonally according to the Varimax procedure. The analysis accounted for 44 percent of the common variance and generated six interpretable factors. Subfactors were described through a comparison with elements of a theoretical teacher model. Sedgwick's (1966) study and teacher model contributes much to this investigation. Sedgwick states:

It seems logical to determine what the end product, or teacher, should be like and then build a curriculum which seems likely to succeed in developing the sort of teacher desired, p. 3.

In the general area of job classification studies, Sjorgen (1967) developed an extensive review of research on job analysis in connection with his study which proposes to identify visual, manual, and communicative skills common to a variety of occupations. The basic premise followed by this researcher is that vocational curricula designed to teach skills, knowledge, and understandings related to a number of jobs followed by specific training for a single job are more efficient and effective than vocational curriculum designed to teach certain specific jobs.

A supportive study by Thomas (1970) related to method was a comparative-and-factor analytic study of knowledge and skills needed by employees in agricultural supply business. Thomas found that factor analysis was very appropriate in analyzing employees ratings of needed skills and knowledges. Also studies by Coster and Courtney (1965) and Coster and Penrod (1965) reinforce the appropriateness of factor analysis as a reliable research procedure.

Smith and Moss (1970) present strong support for occupational clustering, task and factor analysis as a valid basis for improving vocational education instruction. In this Moss states:

The first step in the curriculum development process needs to be the specification of the role for which training is to be provided . . . A systems analysis can be conducted to define the scope and function of each "job" that needs to be done within the system in order to accomplish the system's mission, p. 3.

An in-progress nine-year study by Cotrell and Miller (1969), Design for Developing a Model Curriculum for Teacher Education, serves as a basis for research in both competencies and procedures. Cotrell states

. . . that model curriculum clusters based upon realistic performance needs of the vocational-technical teacher and the associated performance oriented objectives will make possible a great degree of flexibility in the design and implementation of teacher-training packages, p. 29.

Competency Studies

The California Teachers Association (1964) conducted a number of studies in the area of teacher competence and have identified and analyzed six teacher roles, namely, Director of Learning, Counselor and Guidance worker, Mediator of the Culture, Link with the Community, Member of the State, and Member of the Profession.

This report states a need for the identification of the personal qualities necessary for competent performance of all the teacher roles. In practice, these characteristics fall into two general categories:

1. Those scholarly abilities necessary for success in college work, such as intellectual achievement, reading skills, and adequate study habits . . .
2. The personal attributes essential for success in performance of the teacher roles. These include emotional maturity, interest in children and some of the other commonly accepted qualities, p. 50.

The report concluded that the leadership responsibility of the teacher education institution is clear and inescapable. Essentially this institution is the heart of the profession. It has obligation

for activities in the field as well as for preparing competent practitioners.

Sampson (1968) stated concerning research in staff competence:

For the profession to obtain a sharper focus on the problem of vocational and practical arts teacher education, future studies should . . . determine the characteristics that are significant predictors of success and persistence in different subject areas and levels; . . . evaluate the influence of various staff utilization plans and curricular innovations on teacher preparation; ascertain preparation requirements of new staff . . . competence in educational technology; and assess the nature of needs for in-service education, p. 413.

In attempting to describe minimum standards of competencies, Fritschel (1967) notes that one cannot define teacher competency by what a teacher is -- but by what he does, what action he performs, what role he plays, and how he carries out his responsibility. Fritschel defines these areas of minimum competence as reflecting a person who (a) is a director of learning, knowing about his learner and how he learns, knowing his subject matter, and being a member of a teaching team, (b) has human relations skills, and (c) is an agent of change.

Johnson and Shearron (1968) in building a teacher education program stated:

By defining what the job actually is, the competencies necessary to perform specific tasks may be adequately determined. In other words, it would logically follow that the content of a teacher education program should be based on the teaching act itself. Studies of teaching and teaching behaviors provide a partial base on which to build, p. 2.

Parkinson (1969) states in a proposal for a performance based teacher education program that the basic principles for establishing an effective program are in part:

1. Analysis of on-the-job performance requirements of teachers must form the basis of the goals of the Teacher Training Program. Irrelevant training must be deleted.
2. These goals must be spelled out in behavioral terms and move the trainee through a series of successive approximations to the final desired performance.
3. Throughout the training program practice of teaching skills under conditions similar to those in which a teacher will perform must be provided.
4. The training program must provide the contingencies which will maintain the learned skill after the teacher gets on the job, p. 6.

Biddle and Ellena (1964) present a contrasting view related to the confusion surrounding instructor competence:

Teachers may see performance in the classroom as a highly personal affair . . . Some administrators, in contrast, convinced of their ability to judge teacher competence, see no reason for research on the subject. School boards after all are concerned primarily with finding enough teachers -- competent or incompetent. Even the teacher educators are guilty of ignoring the problem. To each of these groups must be repeated what the majority of educational researchers have been saying . . . : we do not know how to define, propose, or measure teacher competence, p. 3.

Some of the reasons for this attitude are:

1. No past research has been adequate in methodology.
2. So many studies exist that usable and appropriate methods are lost among the welter of poor research results.
3. Teacher behaviors are so complex that the behavioral sciences, in their present stage of development, cannot deal with the problem.
4. Research on such a practical problem as teacher competence is bound to fail because only "basic research" produced real break throughs.
5. Teachers are constitutionally and professionally opposed to having their performances evaluated and refuse to cooperate with research, p. 232.

Dr. Wattenbarger (AAJC, 1970) chief architect of Florida's burgeoning community college program, found amidst the variety of views certain "commonalities": superior two-year college teachers must develop competence in subject matter, competence in teaching skills, a sensitivity to students, and experience and understanding of their roles.

The review of the literature reveals that much pertinent action and data are available in the area of competencies. The investigation at the community college and the developing of a core of behavioral-based performance is timely.

CHAPTER III

THE DESIGN OF THE STUDY

In Chapter I a general description of the procedures was stated. The more specific aspects are being dealt with in this chapter.

The Dependent Variable

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. Respondents, which included community college vocational instructors of agriculture, health, home economics, and service occupations, were asked to evaluate the importance of each competency in relation to their jobs. All of the competencies were assigned ratings based upon a Likert-type scale as presented in Appendix C. Each competency was scored independently, or a total of 99 dependent variables.

The Preparation of the Instrument

The instrument used in this study was a mail survey questionnaire containing 99 professional education competency items utilizing a five-point Likert scale which enabled the respondent to judgmentally score the level of proficiency necessary for each competency. The development of the instrument was accomplished in conjunction with two companion studies being done concurrently, one by Gunderson (1971) in trade and industrial education and the other by Miller (1971) in business and distributive education.

The initial step in the development of the instrument was to review the literature on teacher competence 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. Studies by Crawford (1967) and Samson (1968) were also reviewed. The instrument presented by Halfin and Courtney (1970) provided the base 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 item was checked to determine its appropriateness to community college teaching. Items which appeared to be redundant or inappropriate were deleted. An initial instrument containing 140 items was developed and subsequently revised as a result of suggestions from committee members of each of the three investigators. The revised instrument contained 99 competencies or dependent variables.

The questionnaire was then presented to a jury of experts for the purpose of evaluating its format, content, clarity, and comprehensiveness. A jury of experts was selected for each of the three concurrent studies with membership representing each program area selected for study. The Oregon Vocational Association appointed a jury of experts to serve as the jury for this specific study. Composition of the jury included a representative from each of the program areas represented in the study. Each juror was mailed an instrument with check lists prior to an interview by this investigator. Each juror was asked to review the questionnaire and to list any recommendations or suggestions he had for revision. A list of members who served on the jury along with a sample letter and

suggested revision sheet sent to each juror is shown in Appendix B. The investigators then compiled and reviewed each list of suggestions and recommendations. Several items were revised for clarity, one item was deleted and five competencies were added resulting in a questionnaire containing 99 dependent variables.

The field test was next. 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 difficult to understand. Following the field-testing phase, only minor revisions were required prior to the preparation of the final draft of the instrument as shown in Appendix C.

The Selection of the Sample

The study's population utilized the four western states of California, Colorado, Oregon, and Washington which were selected because they represented the comprehensive community college movement in the western states. Two criteria were considered prior to the selection of the sample states. First, a state had to have at least ten community colleges. Second, the community colleges of the state had to have a comprehensive vocational program. Comprehensiveness was essential because the three concurrent studies covered many vocational program areas. The four states selected met these requirements. The state and community colleges selected are shown in Appendix D.

Forty community colleges, ten in each of the four states, were selected for the study. The sample for the study consisted of four 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. No attempt was made to select an equal number of instructors from each program area. Names of instructors in the community colleges from which the randomizations were made were obtained from instructor lists prepared by cooperating agencies.

The Statistical Design

The central problem of this study was to determine the common professional education competencies needed by community college vocational instructors of agriculture, health, home economics, and service occupations. Research by Sedgwick (1966), Halfin and Courtney (1970) and Cotrell (1969) provides the basis for the general design of this study which includes the following:

1. The population for the study was representative of agriculture, health, home economics, and service occupations instructors at the community college level. A random sample of 160 instructors provided data by completing and returning a 99 item questionnaire which was mailed directly to them by the investigator.
2. Respondents were asked to react to each of the 99 items in the instrument by recording the level of proficiency they felt was required on a 5-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 used 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 for community college differences; it also tested 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 among 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 was rejected in the analysis of variance.
4. Data were analyzed through the use of two factor analytic techniques -- the R-technique and Q-technique. The techniques take on the following characteristics for the study:
 - a. 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 variable (competencies)

intercorrelation matrix based upon data collected from 160 respondents was generated following the R-technique rotation method. 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 L.

- b. The Q-technique basically involved the ordering of respondents according to the competencies which were included for the study. A 160-variable (respondents) intercorrelation matrix based upon data furnished on 99 competencies was generated following the Q-technique rotation method. Thus, this form of analysis provided a measure of commonality among respondents and indicated the extent to which selected vocational education instructors 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 K.
- c. Competencies with rotated factor loadings of $\pm .50$ or higher were recorded as being clustered within a factor.

The Premise

This investigation was based upon the premise that the study could identify those professional education competencies that are common to all teachers in the several selected vocational program areas.

The Collection of Data

The director of the Division of Vocational, Adult, and Community College Education, Oregon State University, gave division leadership in securing appropriate agency and community college participation in each state. In California, additional assistance 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. 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. Letters from California are shown in Appendix E. In Colorado, state agency endorsement 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 permission 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 presidents of each of the 40 community colleges selected for the study were contacted by letter to request their participation. A sample letter is shown in Appendix F. This alerted them to the

selected respondents from their institution. Enclosed with the letter was a copy of the Instructor Questionnaire and Response Card, shown in Appendix G, which was to be completed and returned to the investigator. The Response Card asked them 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 randomly selected instructors in each institution. The explanatory letter is shown in Appendix H. The initial mailing included California, Colorado, Oregon, and Washington.

Instructors who did not respond by the date requested were first sent an additional questionnaire and a memorandum as shown in Appendix I. To those still not responding, a second memorandum was sent as shown in Appendix J. 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. When 100 percent return of the questionnaires was achieved, the questionnaires were checked and coded before the data was transferred to IBM cards for computer processing. In all of these procedures and steps, an Oregon State University statistician with the assistance of a professional education researcher gave invaluable help and guidance.

CHAPTER IV

DATA ANALYSIS

The results of this study are presented in the following four sections: Results of the analysis of variance, Results of Q-Technique factor analysis, Results of R-Technique factor analysis, and Results of mean score rankings.

Results of the Analysis of Variance

Responses for the 40 community colleges were tested to see if a significant difference existed among their mean scores. The testing generally indicated that the colleges were alike in their responses. In all, a total of 99 one-way analysis-of-variance tests were made for the study. The results, including the computed F score², are shown in Appendix M. The means for the colleges were found to be different for only three of the 99 competencies. The three competencies upon which the hypothesis were rejected are shown in Appendix N.

The Least Significant Difference test was computed for each of the three rejected competencies. The results of these tests are summarized in Appendix O.

Results of Q-Technique Factor Analysis

The Q-technique factor analysis was conducted on the data to order people (respondents) according to competencies. The analysis determined the extent to which instructors resembled one another according to values assigned to each of the 99 competencies.

The Q-technique generated only one factor. The results showed that 159 instructors had factor loadings exceeding the .90 level. One instructor had a factor loading of .87. The oneness or alikeness of the results was indicated by the fact that the one factor which was generated accounted for 94.57 percent of the common variance among the instructors of agriculture, health, home economics, and service occupations. The results of the Q-technique are shown in Appendix P.

Results of R-Technique Factor Analysis

The R-technique factor analysis results determined the common professional education competencies in this study. Hence, the R-technique was considered to be the most important procedure utilized in this study. Factor loadings of $\pm .50$ or higher were considered as adequate factor loading cut-off values when identifying a factor. Fruchter (1954) stated that loadings of .20 or less are usually regarded as insignificant, loadings of .20 to .30 as low, .30 to .50 as moderate, .50 to .70 as high.

The R-technique factor analysis was set to compute a six-factor solution. The analysis accounted for 44.50 percent of the common variance and resulted in five interpretable factors and one uninterpretable factor. The percentage of common variance accounted for by each factor solution is shown in Appendix Q.

In each factor, professional education competencies were identified as spurious because they received factor loadings of $\pm .50$ or less. The spurious competencies are shown in Appendix R.

The results of the R-technique factor analysis are shown in Tables 1 through 5. The factors were studied, sub-factored, and named to best

arrange and describe the competencies which made up that factor or sub-factor. The tables include professional education competencies with factor loadings of $\pm .50$ or higher, means, standard deviations, and mean rankings.

Factor 1 was named Instructional Management and is shown in Table 1. Factor 1 contained 29 professional education competencies with factor loadings of .50 or higher. The 29 competencies had mean scores which ranged from a high of 4.74 to a low of 3.46. The standard deviations ranged from a high of 1.16 to a low of .49. The 29 competencies were studied and grouped into three sub-factors. Sub-factors and their names are also shown in Table 1.

In this factor, mean scores were generally high and standard deviations were low. This fact indicates that the factor had been assigned homogeneous responses by the instructors.

Factor 1 accounted for 23.95 percent of the common variance. The factor also generated 14 spurious competencies as shown in Appendix R.

TABLE 1. Results of R-Technique Factor Analysis.
Factor 1 - Instructional Management

Sub Factor	Item No.	Competency	Factor loading	Mean	Standard deviations	Mean ranking
A	6	ask questions during classroom presentations or demonstrations to aid student learning	.55	4.47	.67	9
	13	provide practical shop or laboratory experiences to enhance classroom learning	.53	4.74	.47	1
	28	maintain student performance or progress records	.65	4.31	.83	17

TABLE 1 (Continued)

Sub Factor	Item No.	Competency	Factor loading	Mean	Standard deviations	Mean ranking
A	30	interpret the philosophy of the community college in providing vocational programs for the student	.54	3.82	1.05	57
	31	select textbooks and instructional materials for the classroom, shop or laboratory	.53	4.64	.61	3.5
	33	motivate students in the classroom, shop or laboratory	.53	4.73	.56	2
	36	relate to students from different socio-economic backgrounds	.62	4.05	.95	41
	50	provide appropriate practice for development of basic skills	.66	4.45	.79	12
	58	maintain a clean, orderly laboratory or classroom	.60	3.84	1.16	53
	59	teach at the student's level and rate of learning	.61	4.50	.73	6.5
	61	maintain student attention during classroom presentations or demonstrations	.55	4.45	.71	11
	66	identify students in need of counseling or guidance	.55	4.25	.82	21
	72	summarize classroom presentations	.52	4.13	.76	32
	75	maintain discipline in the classroom, shop, or laboratory	.55	4.06	1.08	39

TABLE 1 (Continued)

Sub Factor	Item No.	Competency	Factor loading	Mean	Standard deviations	Mean ranking
A	78	develop student learning activities to facilitate instruction	.56	4.25	.52	21
	88	make use of available guidance and counseling services within the community college	.61	3.83	.95	55
	93	be stimulating in your work as an instructor	.54	4.63	.57	5
	97	interpret safety rules and regulations to students	.63	4.09	1.09	37
<hr/>						
B	27	revise courses in accordance with current occupational trends	.52	4.50	.67	6.5
Curricular develop- ment & evaluation	38	relate the course of study to measurable performance objectives	.61	4.40	.75	15
	54	write performance objectives	.60	4.23	.94	23
	56	use the information contained in professional journals for personal improvement or improvement of instruction	.53	4.16	.77	29
	62	make a daily lesson plan	.53	3.84	1.15	53.5
	68	evaluate the effectiveness of a classroom or laboratory demonstration	.53	4.40	.66	14
	95	evaluate teaching effectiveness by measuring student achievement	.50	4.20	.81	27.5

TABLE 1 (Continued)

Sub Factor	Item No.	Competency	Factor loading	Mean	Standard deviations	Mean ranking
C Ethics, policies & profes- sionalism	29	adhere to the code of ethics adopted in your community college	.69	4.16	1.10	31
	39	interpret your vocational program to others	.50	4.23	.86	24
	67	participate in professional organizations related to your subject matter area	.54	4.11	.93	36
	89	interpret community college policies	.53	3.46	1.06	73

Spurious Competencies are shown in Appendix R.

Factor II was studied and named Program Management and it is shown in Table 2. In this factor 19 professional education competencies received factor loadings of $\geq .50$ or higher for inclusion in the factor. The 19 competencies were grouped into two sub-factors and named. The mean scores ranged from a high of 3.83 to a low of 2.64. The standard deviations ranged from a high of 1.28 to a low of .86. This factor accounted for 7.05 percent of the common variance. The factor also generated 17 spurious competencies as shown in Appendix R.

Factor II mean scores were moderately low and standard deviations were high. This indicated that the factor had been assigned heterogeneous responses by the instructors.

TABLE 2. Results of R-Technique Factor Analysis.
Factor 2 - Program Management.

Sub Factor	Item No.	Competency	Factor loading	Mean	Standard deviation	Mean ranking
A Inter- pretations & philosophy	2	interpret the pro- visions of instructor tenure laws	-.54	2.73	1.28	93
	8	interpret the inno- vative provisions of the Vocational Act as amended in 1968	-.73	3.04	1.19	89
	16	interpret the history of vocational educa- tion	-.65	2.42	1.04	98
	18	interpret state certi- fication requirements for instructors	-.66	3.07	1.23	87
	23	interpret the state specifications and requirements for vocational facilities	-.72	3.03	1.23	90
	25	interpret the phi- losophy of the compre- hensive community college	-.56	3.39	1.16	76
	43	interpret the history of education	-.72	2.18	1.04	99
	48	identify the simi- larities and differ- ences between the goals of general and vocational education	-.57	3.33	1.09	79
	52	interpret the objectives of voca- tional education to others	-.52	3.70	1.06	61
	63	distinguish between two or more educa- tional philosophies	-.64	3.05	1.14	88

TABLE 2 (Continued)

Sub Factor	Item No.	Competency	Factor loading	Mean	Standard deviation	Mean ranking
B Program Develop- ment	1	assist community college administrators to initiate and maintain vocational programs	-.55	3.83	.96	56
	19	assist in the development of the total community college program	-.52	3.33	1.04	79
	21	locate available standardized tests	-.57	2.95	1.14	92
	55	conduct community surveys to improve instruction or plan programs	-.58	3.19	1.09	84
	41	use the State Plan for Vocational Education in securing reimbursement for vocational programs	-.71	3.09	1.23	86
	46	utilize state guidelines for curriculum planning	-.59	3.55	1.06	69
	69	use the results of standardized test scores for job placement	-.59	2.64	1.17	97
	70	utilize the services of local and state vocational education agencies	-.58	3.34	1.13	77
	92	write articles for news release	-.58	2.73	1.25	94

Spurious Competencies are shown in Appendix R.

Factor III was considered an uninterpretable factor and remained unnamed because it received no competency items with factor loadings of $\pm .50$ or over. The factor received four competencies, one of which had a high mean score of 4.45 giving it a mean ranking of 10.5. This

factor accounted for 4.46 percent of the common variance. The spurious competencies which loaded in this factor are shown in Appendix R.

Factor IV was studied and named Coordination of Work Experience and Placement and is shown in Table 3. Three competencies received factor loadings of .50 or over for inclusion in the factor. Within these 3 competencies the mean scores ranged from a high of 3.76 to a low of 3.47. The standard deviations ranged from a high of 1.28 to a low of 1.05. This factor accounted for 3.70 percent of the total common variance. No sub-factors were named. Two spurious competencies were generated and are shown in Appendix R.

TABLE 3. Results of R-Technique Factor Analysis.
Factor 4 - Coordination of Work Experience and Placement

Sub Factor	Item No.	Competency	Factor loading	Mean	Standard deviation	Mean ranking
A	15	aid the student in obtain- ing job placement after training	.57	3.63	1.05	63
Place- ment & work experi- ence	22	secure on-the-job train- ing positions for students	.63	3.47	1.28	72
	99	coordinate and supervise cooperative work experi- ence programs	.65	3.76	1.18	58.5

Spurious Competencies are shown in Appendix R.

Factor V was studied and named Community Relations and is shown in Table 4. Two professional education competencies received factor loadings of .50 or over for inclusion in this factor. Competency mean scores ranged from a high of 3.99 to a low of 3.24. The standard deviations ranged from a high of 1.02 to a low of .95. This factor

accounted for 2.72 percent of the total common variance. The three spurious competencies generated in this factor are shown in Appendix R.

TABLE 4. Results of R-Technique Factor Analysis.
Factor 5 - Community Relations

Sub Factor	Item No.	Competency	Factor loading	Mean	Standard deviation	Mean ranking
A Community Relations	4	involve yourself in civic community activities not directly related to the school	.57	3.24	.95	82
	85	work cooperatively with people in the community	.54	3.99	1.02	45

Spurious Competencies are shown in Appendix R.

Factor VI was studied and named Aiding Students and is shown in Table 5. Only one competency received a factor loading of .50 or over, This competency has a mean score of 3.76 and a standard deviation of 1.03. This factor accounted for 2.56 percent of the total common variance. Five spurious competencies were generated in this factor and they are shown in Appendix R.

TABLE 5. Results of R-Technique Analysis.
Factor 6 - Aiding Students

Sub Factor	Item No.	Competency	Factor loading	Mean	Standard deviation	Mean ranking
A Aiding Students	73	aid students in enter- ing educational or occupational training programs beyond the community college level	.58	3.76	1.03	58.5

Spurious Competencies are shown in Appendix R.

In summary of the R-technique factor analysis, a total of 54 professional education competencies with factor loadings of $\pm .50$ or higher were identified. Mean scores for the 54 competencies ranged from a high of 4.74 to a low of 2.64. Standard deviations ranged from a high of 1.28 to a low of .49. The highest mean ranked competency was item number 13, provide practical shop or laboratory experiences to enhance classroom learning. This competency also had the lowest standard deviation in the study.

Results of Ranking Mean Scores

The mean score ranking for each competency was reported in the Tables 1 through 5. Further analysis of these mean rankings was made to show the pattern of high and low competencies. Table 6 shows the ten high competency mean score rankings and the ten low competency mean score rankings.

TABLE 6. High and Low Mean Competency Scores

Item Number	Competency	Ranked mean	Standard deviation	Clustered factor
<u>HIGH</u>				
13	provide practical shop or laboratory experiences to enhance classroom learning	4.74	.49	1-A
33	motivate students in the classroom, shop or laboratory	4.73	.62	1-A
9	select appropriate equipment and supplies for instructional purposes	4.64	.62	1*
31	select textbooks and instructional materials for the classroom, shop or laboratory	4.64	.61	1*

TABLE 6 (Continued)

Item Number	Competency	Ranked mean	Standard deviation	Clustered factor
<u>HIGH</u>				
93	be stimulating in your work as an instructor	4.63	.57	1-A
27	revise courses in accordance with current occupational trends	4.50	.67	1-B
59	teach at the student's level and rate of learning	4.50	.73	1-A
32	develop <u>objective</u> tests to measure achievement	4.48	.77	1*
6	ask questions during classroom presentation or demonstrations to aid student learning	4.47	.67	1-A
17	relate technological advances to laboratory and classroom instruction	4.45	.64	3*
<u>LOW</u>				
23	interpret the state specifications and requirements for vocational facilities	3.03	1.23	2-A
86	identify local community power structures and pressure groups	3.02	1.22	5*
21	locate available standardized tests	2.95	1.14	2-B
2	interpret the provisions of instructor tenure laws	2.73	1.28	2-A
92	write articles for news release	2.73	1.25	2-B
14	participate in the supervision of non-vocational extracurricular activities	2.70	1.09	5*
87	operate duplicating equipment	2.68	1.36	3*

TABLE 6 (Continued)

Item Number	Competency	Ranked mean	Standard deviation	Clustered factor
69	use the results of standardized test scores for job placement	2.64	1.17	2-B
16	interpret the history of vocational education	2.42	1.04	2-A
43	interpret the history of education	2.18	1.04	2-A

*Clustered as a spurious competency

Two important trends were identified in the results of the mean score rankings. First, all but one of the 10 highest ranked competencies were clustered in Factor I and all standard deviations for these competencies tended to be low. Secondly, seven of the ten lowest mean ranked competencies were clustered in factor II, and standard deviations for these items tended to be high.

In the next chapter the purpose, procedures, and findings will be summarized. Conclusions, implications, and suggestions for further study will also be developed based on the analysis of data and the review of the literature.

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Restatement of Purpose

The purpose of this study was to determine the common professional training needs and proficiency requirements of selected community college vocational instructors of agriculture, health, home economics, and service occupations.

The study had five major dimensions:

1. The construction of a Professional Education Competencies Instructor Questionnaire.
2. The analysis of data used the F statistic to determine if significant differences existed among community colleges.
3. The factor analysis of data to determine the common professional education competencies proficiency needs of community college instructors.
4. The factor analysis of data to determine the extent of resemblance among the instructors according to ratings given professional education competencies.
5. The formulation of implications to be considered in the development of curriculum content, performance objectives and teaching strategies for community college vocational teacher education courses.

Restatement of Procedures

The study was accomplished through the construction, validation, and utilization of a professional education competency mail-survey questionnaire of 99 competencies with a five point Likert-type scale.

The collected data were analyzed by analysis of variance to test for differences among community college mean scores. A test of Least Significance Differences was administered on the three competencies which were rejected by the analysis of variance.

The major data analysis in this study utilized the R-technique factor analysis which identified the common professional education competencies. The Q-technique was also conducted on the data to determine the extent of resemblance among instructors according to the ratings given to the competencies.

Summary of the Findings

The findings of the study are summarized as follows:

1. The results of the analysis of variance indicated that there was no significant difference among competency mean scores for the community colleges.
2. The Q-technique factor analysis determined that agriculture, health, home economics, and service occupations instructors resembled one another in the way they rated professional education competencies. The analysis extracted only one factor with 159 instructors having factor loadings of .90 or higher.

3. The R-technique factor analysis set for a six-factor solution generated 54 common professional education competencies with factor loadings of $\pm .50$ or higher.

The factors extracted were named as follows:

Factor I	Instructional Management
Factor II	Program Management
Factor III	Uninterpretable (unnamed)
Factor IV	Coordination of Work Experience and Placement
Factor V	Community Relations
Factor VI	Aiding Students

The competencies included in Factor I, named Instructional Management, were rated by the instructors as requiring the highest proficiency levels as indicated by the high mean scores given the competencies.

Conclusions

Based on the review of the related literature and the results of this study, the following conclusions were drawn:

1. Generally there were no significant differences among the community college professional education competency mean scores in the four different states included in this study. In only three instances did differences occur for the study.
2. The 160 community college vocational instructors of agriculture, health, home economics, and service occupations resembled one another in terms of how they responded to the professional education competencies in the study.
3. The common professional education competencies identified in this study verify that the professional

education competencies needed by instructors within the vocational program areas represented in this study may logically be offered in a common teacher training effort.

4. The results indicated that factor analysis is appropriate for developing groupings of common professional education competencies that may be used as a basis for community college curricula development for the purpose of training instructors of the type included in the study.
5. An examination of the factors generated by the R-technique factor analysis revealed clusters of common professional education competencies that have a logical relationship to one another. Further examination revealed that Factor I, entitled Instructional Management, was rated by the respondents as requiring the highest levels of proficiency in that the factor received the highest mean scores, and the lowest standard deviations. In contrast, respondents rated the Factor II (Program Management) competencies as requiring the least proficiency, indicated by the low mean scores and high standard deviations.
6. Several spurious professional education competencies which did not cluster in any factor received high mean scores. It was concluded that these competencies should not be ignored in the process of curriculum development for community college instructors.

7. The literature reveals that teacher education institutions should stress behavioral objectives and/or a performance-based curriculum when designing or developing curricula for the professional preparation of teachers. It can be further concluded that Oregon State University is a leader in the western states as indicated by its efforts to design a relevant performance-based professional education curriculum for the preparation of vocational educators.

Implications

Based upon the preceding review of the literature, the data analysis of this study and subsequent conclusions, the following implications are proposed:

1. The commonality that exists among the community college instructors would indicate that the need for proliferating courses to accommodate the pedagogical instruction within the various vocational program areas seems both undesirable and unnecessary in vocational teacher education.
2. The common professional education competencies identified in this study can be used as a source of performance-based competencies upon which to build curricula. The professional educator has the responsibility of taking these common competencies and reorganizing them into a learning system. Caution should be taken in using each cluster (factor) or sub-factor as a unit or course in itself. Instead, the implementation should be to either

fit the items into existing courses, individualize them into instructional packages, or develop a series of mini-courses which would use them as competencies stated in behavioral form.

3. Professional teacher education offerings designed to prepare vocational community college instructors of agriculture, health, home economics, and service occupations for the four western states included in this study need not differ in content for those competencies studied. This has further implications for the preparation of community college vocational instructors on a regional or interstate cooperative basis.
4. The data revealed by the R-technique factor analysis indicates implications for the de-emphasis of certain traditional teacher education pedagogical courses such as history of education, philosophy of education, etc. However, high proficiency needs, as expressed by the instructors, in the areas of teaching and guidance strategies, curriculum development, and evaluation, etc., imply that these types of competencies be stressed in the teacher education curricula designed for the preparation of community college instructors.

5. Because of the expected growth of community colleges both in enrollment and numbers, state boards of education; teacher education institutions, and community colleges need to work cooperatively together if the need for competent instructors is going to be met in an efficient and effective manner.

Suggestions for Further Study

1. Additional studies of community college instructor competencies should focus on:
 - a. developing taxonomic levels for the competencies generated in this study.
 - b. designing and conducting experimental research to contrast the results of traditional community college instructor preparation against the results obtained from a performance-based curriculum.
2. The limited amount of literature in the area of community college administrator competencies and vocational exploratory instructor competencies indicates a need for additional professional education competency studies of these two levels of education.
3. A study should be conducted to determine if there have been any attempts to prepare community college instructors on a regional basis and to assess the success or failure of such attempts.

4. By producing a study utilizing a questionnaire with more professional education competencies, spurious competencies could possibly load in factors which were not generated in this study.
5. There is a need to write behavioral objectives and individualized instructional packages and to evaluate them in a field setting using the analysis of covariance technique.
6. A composite data analysis needs to be conducted on the data gathered through the three companion concurrent studies by Gunderson (1971), Lindahl (1971), and Miller (1971).

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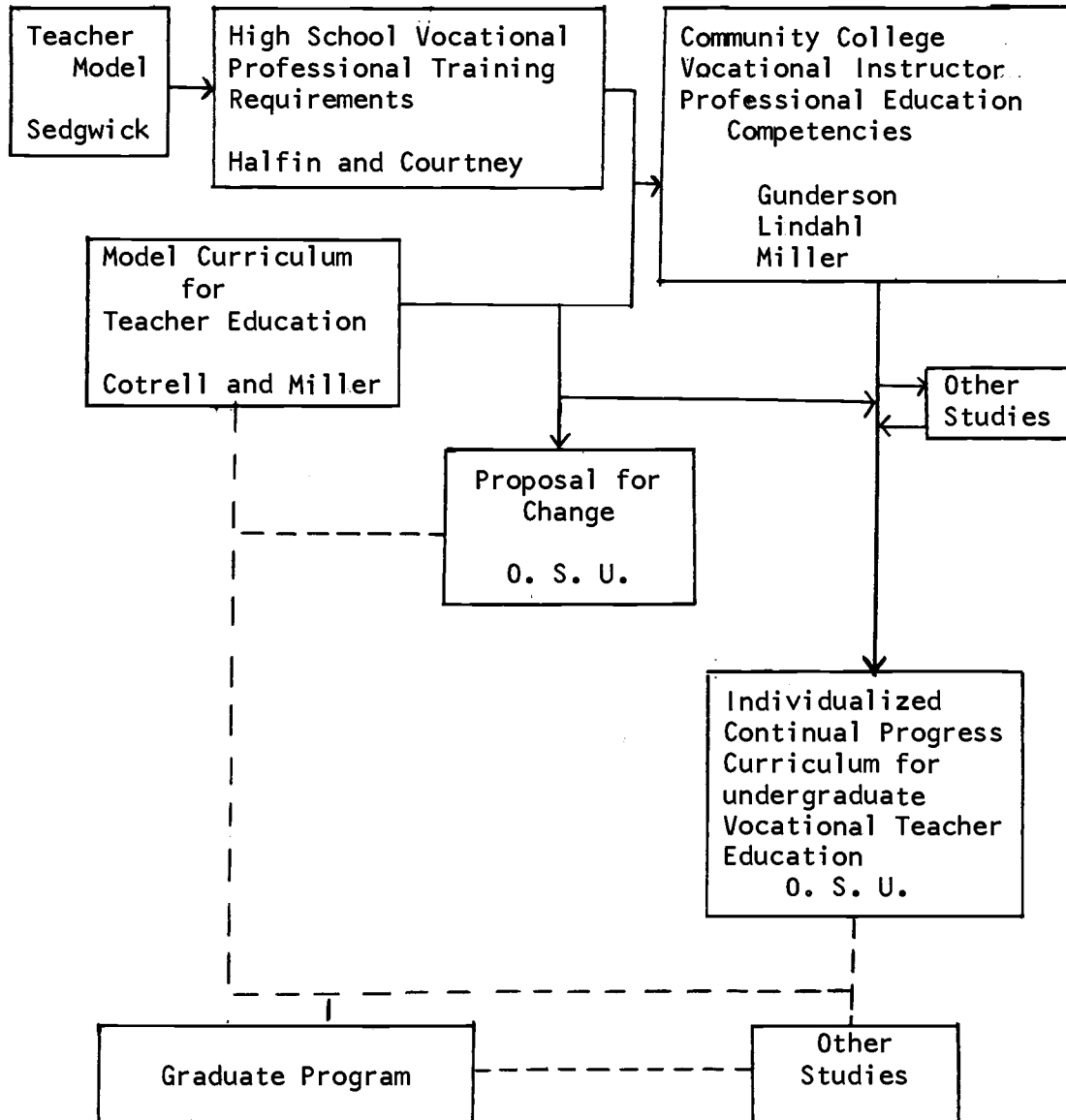
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APPENDICES

APPENDIX A

Flow Chart of Competency Studies

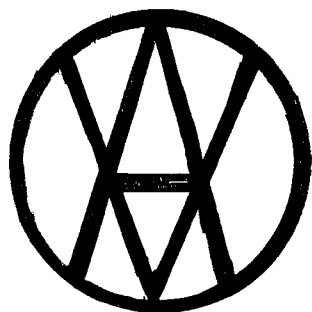
"A Systems Approach"



Feed back lines - - - - -

Critical paths _____

APPENDIX B



Jury of Experts Letter

OREGON VOCATIONAL ASSOCIATION
4382 - 45th Avenue, N.E.
Salem, Oregon 97303

October 30, 1970

Mr. Don Lindahl
Specialist Service Occupation
Oregon Board of Education
942 Lancaster Drive, N.E.
Salem, Oregon 97310

Dear Mr. Lindahl:

Pursuant to our conversation earlier this week, I am pleased to recommend to you the following vocational educators as possible members of a jury of experts to assist in the identification of community college vocational-technical teacher competencies:

Mr. James Piercey Associate Dean of Instruction Southwestern Oregon Comm. Coll. Coos Bay, Oregon 97420	Dr. Curt Loewen, Consultant Agriculture Education Oregon Board of Education 942 Lancaster Drive N.E. Salem, Oregon 97310
Mr. Robert Mobley Chemeketa Community College 4389 Satter Drive, NE Salem, Oregon 97303	Miss Gail Green Linn Benton Community College 203 W. 1st Avenue Albany, Oregon 97321

Mrs. Gladys Belden
Chairman, Department of Home Economics
Lane Community College
4000 E. 30th Avenue
Eugene, Oregon 97405

I'm sure that these persons will serve the needs of your study admirably and that all of them will be willing to participate. If I can be of further assistance to you please do not hesitate to contact me.

Sincerely,

Daniel B. Dunham
President

OREGON STATE UNIVERSITY
School of Education

November 1, 1970

Mrs. Gladys Belden
Home Economics Department
Lane Community College
4000 East 30th Avenue
Eugene, Oregon 97405

Dear Mrs. Belden:

The Division of Vocational, Adult and Community College Education at Oregon State University is undertaking a study to determine the professional education needs and competencies of the community college occupational instructors. The first phase of the study will involve the development and validation of a Professional Education Competencies Instrument.

The Oregon Vocational Association was asked to name a jury of experts to evaluate the appropriateness and comprehensiveness of the instrument. I am pleased to inform you that the Oregon Vocational Association has selected you to serve as one of the jury members.

Would you please review the enclosed questionnaire and make comments concerning any revisions, additions, or deletions on the attached Suggested Revision Sheet? If possible, please return the Suggested Revision Sheet in the self-addressed envelope no later than November 6. Information obtained from the jury of experts will constitute a significant contribution to the value of the study. The revised questionnaire will be administered to a total of 280 instructors in four western states.

This study has the cooperation and endorsement of the Oregon Community College Association and Oregon State University.

We realize the imposition on you and thank you sincerely for your cooperation and understanding.

Sincerely,

Donald G. Lindahl
Waldo Hall 309
Oregon State University
Corvallis, Oregon 97331

DGL/fjl

APPENDIX C

Instructor Questionnaire

 Name

 Community College

 State
INSTRUCTOR QUESTIONNAIREThe 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 |
| 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 |

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>
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. select 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
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

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

	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 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
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

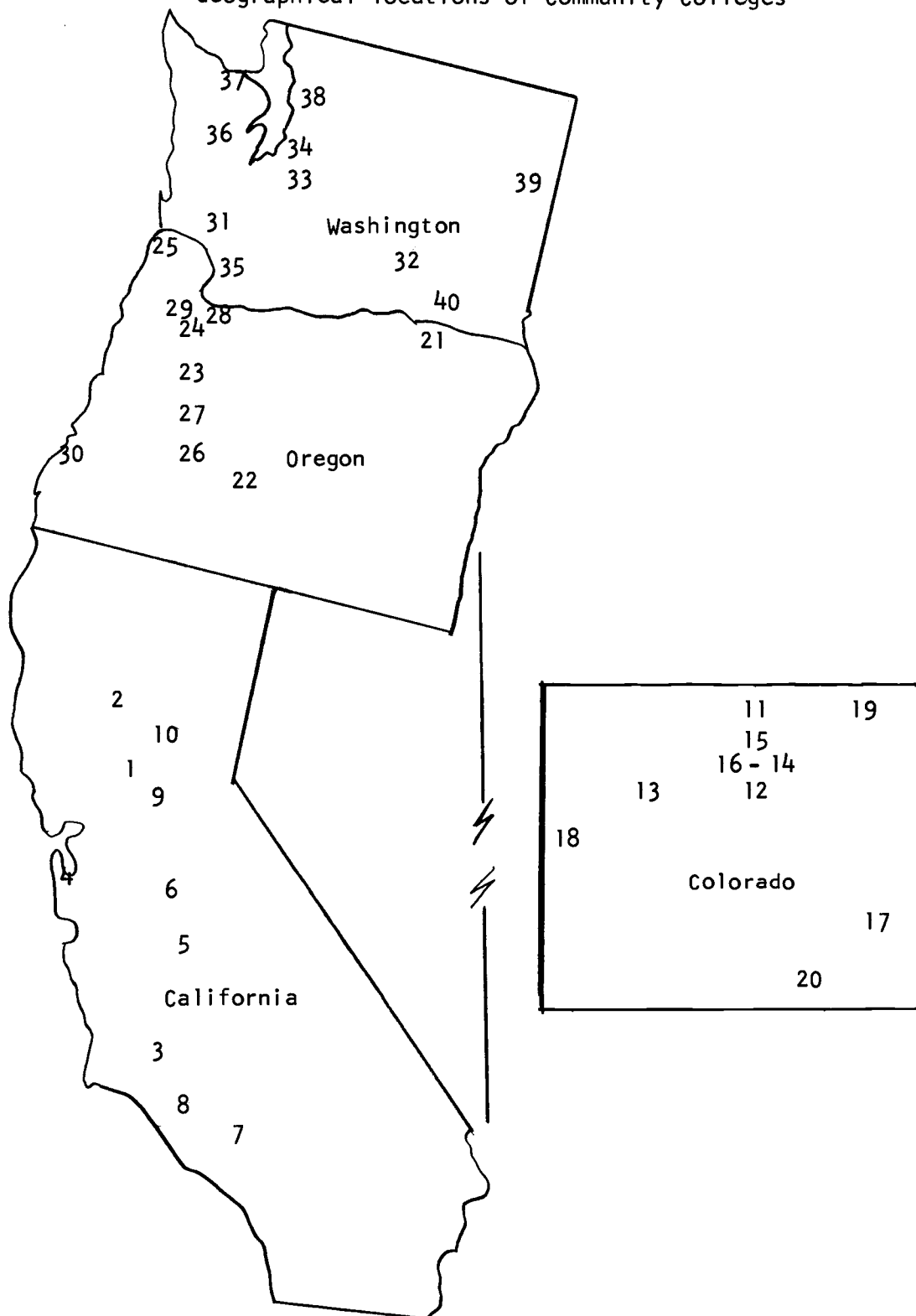
no
 slight
 moderate
 considerable
 complete

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	2	3	4	5
74. develop performance tests to measure achievement	1	2	3	4	5
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
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

Geographical locations of Community Colleges



See the following two pages for names of colleges.

California Community Colleges Participating in the Study

American River College Sacramento	1	Mt. San Jacinto College Gilman Hot Springs	6
Butte College Durham	2	Orange Coast College Costa Mesa	7
Citrus College Azusa	3	Sacramento City College Sacramento	8
Foothill College Los Altos Hills	4	San Bernardino Valley College San Bernardino	9
Fresno City College Fresno	5	Sierra College Rocklin	10

Colorado Community Colleges Participating in the Study

Aims Community College Greeley	11	Community College of Denver West Campus Denver	16
Arapahoe Community College Littleton	12	Lamar Community College Lamar	17
Colorado Mountain Community College Leadville	13	Mesa Community College Grand Junction	18
Community College of Denver Central Campus Denver	14	Northwestern Community College Sterling	19
Community College of Denver North Campus Denver	15	Trinidad State Junior College Trinidad	20

Oregon Community Colleges Participating in the Study

Blue Mountain Community College Pendleton	21	Lane Community College Eugene	26
Central Oregon Community College Bend	22	Linn-Benton Community College Albany	27
Chemeketa Community College Salem	23	Mt. Hood Community College Gresham	28
Clackamas Community College Oregon City	24	Portland Community College Portland	29
Clatsop Community College Astoria	25	Southwestern Oregon Community College Coos Bay	30

Washington Community Colleges Participating in the Study

Centralia Community College Centralia	31	Olympic College Bremerton	36
Columbia Basin Community College Pasco	32	Peninsula College Port Angeles	37
Green River Community College Auburn	33	Shoreline Community College Seattle	38
Highland Community College Midway	34	Spokane Community College Spokane	39
Lower Columbia Community College Longview	35	Walla Walla Community College Walla Walla	40

APPENDIX E

Letters from California

October 30, 1970

Mr. Don Lindahl
Oregon Board of Education
942 Lancaster Drive, NE
Salem, Oregon 97310

Dear Mr. Lindahl:

Enclosed is a list of the California Community Colleges and the names of the presidents. Please contact them directly concerning their participation in your survey.

Sincerely yours,

Harlan C. Stamm, Dean
Academic Programs

Enclosure

California Community Colleges

Office of the Chancellor

Sidney W. Broosman, Chancellor

825 Fifteenth Street
Sacramento, California
95814

November 12, 1970

Mr. Donald G. Lindahl
Specialist
Service Occupations
Oregon Board of Education
942 Lancaster Drive, NE
Salem, Oregon 97310

Dear Mr. Lindahl:

Your letter of October 30 to Wesley P. Smith has been referred to me for a response.

We do not have a current state directory of occupational education instructors in local Community College districts. I suggest that you contact the individual Community Colleges you have in mind, and seek their cooperation in your study. Enclosed is a list of colleges and contact persons for Vocational Education in each college district.

If I can be of help to you in this regard, please let me know.

Give my regards to Leonard Kunzman.

Sincerely yours,

Dr. William R. Morris
Consultant, Evaluation

WRM:cf

Enclosure

California Community Colleges
Office of the Chancellor

Sidney W. Brossman, Chancellor
825 Fifteenth Street
Sacramento, California 95814

APPENDIX F

Letter to Presidents

November 5, 1970

OREGON STATE UNIVERSITY
School of Education

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,

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

APPENDIX G

Response Card

_____ Community College

(will) (will not) participate in the study
circle one

Signed _____

Title _____

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

Name _____

Title _____

APPENDIX H

Letter to Instructors

OREGON STATE UNIVERSITY
School of Education

November 28, 1970

Mr. Clem Berlier
Umpqua Community College
Box 967
Roseburg, Oregon

Dear Mr. Berlier:

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 forty 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 11, 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.

Thank you again for your cooperation.

Cordially,

Donald G. Lindahl
Division of Vocational, Adult
and Community College Education
309 Waldo Hall

mlo

Enclosures

APPENDIX I

First Memorandum

OREGON STATE UNIVERSITY
School of Education

December 11, 1970

TO:

FROM: Don Lindahl
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!

APPENDIX J

Second Memorandum

OREGON STATE UNIVERSITY
School of Education

December 19, 1970

TO:

FROM: Don Lindahl
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 K

Q-Technique Control Cards

```

JOB, 708061, XXXX, Donald G. Lindahl
*FORMS, 61
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*MFBLKS=500
*COPY, =80
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*CORR, QMODE, DIAG=ONE, OUTPUT.
*FACTOR, NUMFAC=8, EIGEN, OUTPUT
*ROTATE, VARI, OUTPUT.
*PROJECT, OUTPUT
*TITLE COMMON PROF ED COMPETENCIES
*LABEL, F001$F002$F003$ . . . . . F01$
F015$ . . . . . F030$
F031$ . . . . . F046$
F047$ . . . . . F062$
F063$ . . . . . F078$
F079$ . . . . . F094$
F095$ . . . . . F110$
F111$ . . . . . F126$
F127$ . . . . . F142$
F143$ . . . . . F158$
F159$ . . . . F160$
*FORMAT (9X, 71F1.0./9X, 28F1.0)
**
88
rewing 80      *FAST      LOGOFF

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APPENDIX L

R-Technique Control Cards

```

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FORMS, 61
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*FACTOR, NUMFAC=8, EIGEN, OUTPUT.
*ROTATE, VARI, OUTPUT.
*PROJECT, OUTPUT
*TITLE COMMON PROF ED. COMPETENCIES
*LABEL, S01$S02$S03$ . . . . . 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

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APPENDIX M

Results of Analysis of Variance

Results of analysis of variance using the F statistic.

Competency	Computed F	Hypothesis
1	1.180	retain*
2	.7353	"
3	.8717	"
4	.8564	"
5	1.8224	reject**
6	.7048	retain
7	.5619	"
8	1.4941	"
9	.8341	"
10	.7822	"
11	1.2415	"
12	1.5210	"
13	1.1157	"
14	1.0008	"
15	1.0805	"
16	1.5615	"
17	1.0273	"
18	.9018	"
19	1.0848	"
20	.9838	"
21	.6046	"
22	.9726	"
23	.9885	"
24	.7217	"
25	1.7602	reject
26	.9330	retain
27	.9691	"
28	.9437	"
29	1.0640	"
30	.8272	"
31	1.1975	"
32	.5705	"
33	.7504	"
34	.8592	"
35	1.1159	"
36	1.1674	"
37	.8638	"
38	.9231	"
39	.7898	"
40	1.0536	"

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(Continued)

Competency	Computed F	Hypothesis
41	.6727	retain
42	1.0536	"
43	1.0347	"
44	.9052	"
45	1.0009	"
46	.8470	"
47	.8509	"
48	.9077	"
49	1.0912	"
50	.9291	"
51	1.0297	"
52	.8525	"
53	.9562	"
54	1.3172	"
55	1.2386	"
56	.9732	"
57	1.1383	"
58	.9150	"
59	.8241	"
60	1.1691	"
61	.9595	"
62	.7607	"
63	1.0045	"
64	.7842	"
65	1.4357	"
66	1.1106	"
67	.8129	"
68	1.1232	"
69	1.2023	"
70	1.0209	"
71	.6762	"
72	1.1929	"
73	.9072	"
74	.9643	"
75	.8704	"
76	.9293	"
77	.8606	"
78	1.1648	"
79	.7280	"
80	1.3142	"
81	.7997	"
82	.8019	"

(Continued on next page)

(Continued)

Competency	Computed F	Hypothesis
83	.7237	retain
84	.7839	"
85	1.1961	"
86	1.0239	"
87	2.4293	reject
88	1.2839	retain
89	.8269	"
90	.8721	"
91	1.2508	"
92	.9675	"
93	1.2202	"
94	.8017	"
95	.5766	"
96	.9546	"
97	1.2523	"
98	.8876	"
99	1.0204	"

* The level of significance was the 1 percent level and the critical region with 40 degrees of freedom for the numerator or 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 N

Rejected Competency Items

Rejected competency items as a result of analysis of variance using the F statistic.

No.	<u>Competency Item</u>	<u>Computed F</u>	<u>Hypothesis*</u>
5.	promote and teach adult vocational programs	1.8224	Rejected
25.	interpret the philosophy of the comprehensive	1.7602	Rejected
87.	operate duplicating equipment	2.4293	Rejected

* The level of significance to base a decision upon was the 1 percent level and the critical region with 40 degrees of freedom for the numerator or mean square and 120 degrees of freedom for the denominator mean square was $F > 1.76$.

APPENDIX 0

Test of Least Significant Difference

The first test of significance which was conducted was on the rejected competency item 5. Responses from 35 of the 40 community colleges were shown to have no significant difference. The five community colleges in which there was a significant difference from the highest mean score are shown in the table below.

Test of Least Significant Difference for Competency Item 5.

Mean	Community College	Mean	Community College	Mean	Community College
5.00	8	4.50	38	4.00	24
4.75	2	"	39	"	28
4.75	5	"	40	3.50	31
"	10	4.25	7	"	29
"	11	"	9	3.25	32
"	14	"	22	"	3
"	17	"	25	"	4
"	26	"	36	"	37*
"	35	4.00	16	3.00	12
4.50	6	"	18	"	15
"	13	"	19	"	21
"	27	"	20	2.75	33
"	30	"	23	2.50	1
"	35				

* at the .01 level, the computed F of 1.82 is greater than the tabular F of 1.76 resulting in a rejection of the test significance. The 3.25 mean score reflects lowest point at which there is no significance. All responses below the 3.25 level exceed the computed LSD of 1.75.

The second test of significance which was rejected was in relation to competency item 25. Responses from 35 of the 40 community colleges were shown to have no significant difference. The five community colleges in which there was a significant difference from the highest mean score are shown in the table below.

Test of Least Significant Difference for Competency item 25.

Mean	Community College	Mean	Community College	Mean	Community College
4.50	14	3.75	34	3.25	25
"	16	"	40	"	26
"	35	3.50	2	3.00	7
4.25	18	"	4	"	24
"	25	"	9	2.75	12
"	29	"	10	"	15
4.00	28	"	11	"	36
"	33	"	21	"	38*
"	39	"	23	2.50	3
3.75	6	3.25	1	2.25	19
"	8	"	5	2.00	32
"	13	"	20	1.75	31
"	17	"	22	1.75	37
"	30				

* at the .01 level, the computed F of 1.7602 is greater than the tabular F of 1.76 resulting in a rejection of the test of significance. The 2.75 mean score reflects the lowest point at which there is no significance. All responses below the 2.75 level exceed the computed LSD of 1.94.

The third test of significance which was rejected was on the competency item 87. Responses of 25 of the 40 community colleges were shown to have no significant difference. The 15 community colleges in which there was a significant difference from the highest mean score are shown in the table below.

Test of Least Significant Difference for Competency item 87.					
Mean	Community College	Mean	Community College	Mean	Community College
4.50	2	3.00	20	2.25	29
"	37	"	21	2.00	5
4.00	8	"	39	"	7
"	16	2.75	1	"	22
"	31	"	11	"	30
"	35	"	13	1.75	24
"	40	2.50	3	"	27
3.50	19	"	4	"	34
3.25	17	"	6	1.50	23
"	28	"	26	"	33
"	32	"	38*	1.25	9
3.00	10	2.25	18	"	12
"	14	"	25	1.00	36
"	15				

* at the .01 level, the computed F of 2.43 is greater than the tabular F of 1.76 resulting in a rejection of the test of significance. The 2.50 mean score reflects the lowest point at which there is no significance. All responses below the 2.50 level exceed the computed LSD of 2.13.

APPENDIX P

Results of Q-Technique Factor Analysis

Respondent* number	Factor loading	Respondent number	Factor loading	Respondent number	Factor loading
001	.97	041	.99	081	.98
002	.97	042	.99	082	.97
003	.96	043	.98	083	.98
004	.97	044	.94	084	.98
005	.99	045	.97	085	.97
006	.98	046	.96	086	.99
007	.98	047	.97	087	.97
008	.97	048	.98	088	.99
009	.94	049	.98	089	.98
010	.98	050	.98	090	.98
011	.98	051	.99	091	.98
012	.94	052	.98	092	.98
013	.97	053	.98	093	.97
014	.98	054	.96	094	.95
015	.96	055	.97	095	.99
016	.99	056	.97	096	.99
017	.98	057	.98	097	.96
018	.97	058	.98	098	.98
019	.98	059	.98	099	.99
020	.96	060	.92	100	.99
021	.99	061	.99	101	.98
022	.98	062	.99	102	.95
023	.99	063	.96	103	.98
024	.99	064	.99	104	.96
025	.98	065	.97	105	.99
026	.99	066	.98	106	.97
027	.98	067	.99	107	.99
028	.96	068	.99	108	.98
029	.98	069	.99	109	.97
030	.98	070	.95	110	.99
031	.99	071	.98	111	.98
032	.98	072	.96	112	.98
033	.97	073	.98	113	.97
034	.97	074	.99	114	.97
035	.97	075	.93	115	.97
036	.98	076	.95	116	.98
037	.98	077	.98	117	.90
038	.99	078	.99	118	.94
039	.99	079	.98	119	.97
040	.99	080	.97	120	.95

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(Continued)

Respondent* number	Factor loading	Respondent number	Factor loading	Respondent number	Factor loading
121	.96	134	.98	147	.92
122	.98	135	.99	148	.96
123	.98	136	.91	149	.93
124	.99	137	.87	150	.98
125	.93	138	.98	151	.99
126	.97	139	.98	152	.96
127	.98	140	.99	153	.99
128	.97	141	.95	154	.97
129	.95	142	.90	155	.98
130	.96	143	.96	156	.99
131	.98	144	.98	157	.99
132	.98	145	.98	158	.98
133	.97	146	.94	159	.98
				160	.98

* The analysis accounted for 94.57 percent of the common variance.

APPENDIX Q

Results of the Percentage of
Common Variance per Factor

Factor	Percent	Cumulative Percent
1	23.95	23.95
2	7.05	30.99
3	4.46	35.46
4	3.70	39.16
5	2.72	41.88
6	2.59	44.47

APPENDIX R

Spurious Competencies as a result of R-Technique Analysis

Factor I. Instructional Management

Sub Factor	Item number	Competency	Factor loading	Mean	Standard deviation	Mean ranking
A	3	conduct a shop or laboratory demon- stration for an individual student	.39	4.35	.95	16
A	9	select appropriate equipment and supplies for instructional purposes	.35	4.64	.62	3.5
A	10	arrange and conduct field trips	.40	4.21	.87	25.5
A	26	<u>select</u> appropriate audio visual materials for instructional purposes	.45	4.28	.83	18.5
B	32	<u>develop</u> objective tests to measure achievement	.45	4.48	.77	8
A	37	utilize individualized instruction materials and techniques	.41	4.28	.77	18.5
A	44	build a display for instructional purposes	.32	3.33	1.08	79
A	49	develop classroom instruction based upon the individual needs of the learner	.44	4.43	.74	13
C	64	maintain necessary report forms required by state or federal agencies	.48	3.45	1.2	74
A	65	use a student-centered teaching style	.46	4.25	.97	21

Factor I. Instructional Management (Continued)

Sub Factor	Item number	Competency	Factor loading	Mean	Standard deviation	Mean ranking
B	74	develop performance test to measure development	.47	4.16	.88	29.5
C	76	participate in outside trade, business, or professional organizations related to your subject matter area	.49	4.01	.94	44
C	79	communicate your ideas or point of view to other instructors or administrators	.44	4.21	.75	25.5
A	91	use programmed learning materials	.34	3.43	1.04	75

Factor II. Program Management

Sub Factor	Item number	Competency	Factor loading	Mean	Standard deviation	Mean ranking
B	5	promote and teach adult vocational programs	-.40	4.08	1.10	39
A	11	interpret the goals and objectives of vocational education	-.48	4.13	.86	33.5
B	20	prepare budgetary requests for vocational programs	-.48	3.85	1.10	50.5
B	34	interpret the legal liabilities of a teacher	-.47	3.48	1.20	71
B	35	direct, advise, or promote student participation in competitive events or youth organizations related to vocational education	-.40	3.15	1.13	85

Factor II. Program Management (Continued)

Sub Factor	number	Competency	Factor loading	Mean	Standard deviation	Mean ranking
B	40	provide special training or assistance to disadvantaged and handicapped students	-.47	3.56	1.07	68
B	42	organize or work with local vocational advisory committees	-.47	3.96	1.01	46
A	45	formulate your own educational philosophy	-.33	3.95	1.05	40
A	51	relate the vocational program to other instructional programs	-.49	3.62	1.03	65
B	53	break down an occupation or job into its component parts for instructional or guidance purposes	-.39	4.20	.88	28
A	57	assess the validity, reliability and difficulty of instructor-made tests	-.37	4.02	.96	42.5
B	60	utilize written shop, classroom, and laboratory equipment organizational plans	-.47	3.71	1.07	60
B	77	lead a conference	-.44	3.60	1.11	67
A	83	interpret the socio-economic class structure of the local community in relation to students enrolled in vocational programs	-.48	3.33	1.09	81
A	84	identify acceptable community social behaviors for instructors	-.49	3.23	1.21	83

Factor II. Program Management (Continued)

Sub Factor	Item number	Competency	Factor loading	Mean	Standard deviation	Mean ranking
B	90	provide programs for the students with special needs	-.45	3.61	1.13	66
B	96	articulate your instructional program with other educational institutions or agencies	-.46	3.85	.97	50.5

Factor III. Uninterpretable (unnamed)

Item number	Competency	Factor loading	Mean	Standard deviation	Mean ranking
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(No competencies received over .50 factor loadings)

Spurious Competencies

7	adapt your appearance and apparel to acceptable standards for instructors	-.42	3.93	1.17	48
17	relate technological advances to laboratory and classroom instruction	.33	4.45	.64	10.5
24	<u>develop</u> audio-visual materials for instructional purposes	-.29	4.02	.86	42.5
87	operate duplicating equip- ment	-.29	2.68	1.36	96

Factor 4 - Coordination of work experience and placement.

12	interpret the goals of general education	.37	3.65	.94	62
98	screen and select students for your program	-.40	3.63	1.18	63.5

Item number	Competency	Factor loading	Mean	Standard deviation	Mean ranking
<u>Factor 5 - Community relations.</u>					
14	participant in the supervision of non-vocational extracurricular activities	.39	2.70	1.09	95
82	inform students of the nature and requirements of specific occupations	.46	4.13	.94	33.5
86	identify local community power structures and pressure groups	.43	3.02	1.22	91

Factor 6 - Aiding students.

47	draw from personal a vocational interest to enrich instruction	.32	3.92	.89	49
71	use counseling techniques to help students solve personal and social problems	.41	3.85	1.00	52
80	<u>develop</u> subjective tests to measure achievement	.31	3.50	1.17	70
81	relate current events associated with your subject matter area to classroom instruction	.44	4.12	.84	35
94	conduct follow-up studies for purposes of determining effectiveness of instruction	.35	4.06	.97	39.5