AN ABSTRACT OF THE THESIS OF

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Title: A FACTOR ANALYSIS OF THE OCCUPATIONAL COMPETENCE OF VOCATIONALLY CERTIFIED TEACHERS OF BUSINESS EDUCATION SUBJECTS

Abstract approved: Redacted for privacy Dr. Earl E. Smith

The Purpose of the Study

The central purpose of this study was to identify the common competency elements deemed necessary for entry-level vocational certification and to develop these elements into groups that would serve as a basis for use in an occupational competency test. Questions to be answered from the responses to the questionnaire were: can essential competencies common to all business teachers be identified, are there significant differences in the competencies needed by teachers in the three cluster areas, can inservice business education teachers identify those competencies essential to successful teaching, and can suitable groups of competencies be established as a resource bank for the development of performance-based competency tests.
Procedures

The construction of the occupational competence questionnaire was accomplished through the use of the Oregon Board of Education cluster guides, review of related literature, and the expertise of business educators in secondary and post-secondary institutions within the state of Oregon. A mail survey questionnaire containing 75 occupational competencies with a five-point Likert scale was used for the study. The dependent variable was the score judgmentally assigned to each competency by business teachers. The population for the study utilized vocationally certified business education teachers currently teaching the major curriculum content of one of the three business education clusters. The sample consisted of 25 teachers from each of the three clusters--Accounting, Clerical, and Steno-Secretarial. Data were coded, keypunched, and verified from the returned questionnaires prior to processing.

The Data

The F statistic was used to analyze contrasts between the mean scores for each competency with the .05 level of significance being used to determine if differences existed between cluster groups. A test of Least Significant Difference was used on rejected competencies where differences exceeded the †.50 factor loading. Further analysis
was accomplished through the R-technique which was used to cluster the competencies according to factors. Factor titles were assigned, representative of the Oregon clusters, after the data were analyzed.

**Selected Findings**

The basic business occupation competencies were scored uniformly by each of the three cluster groups. Generally, there was disagreement as to the importance of factors as they became more specific for specialty occupations. Those competencies listed in Factor I, Basic Business Operations, showed the highest correlation of agreement. The ten highest ranking competencies, none of which could be considered skill development curriculum courses such as typewriting and shorthand, were contained in this factor. In total, 60 of the 75 competencies were judged to be acceptable to these clusters. Those competencies not normally a part of the business education curriculum in the majority of schools were rejected. Classic examples of minimal or unnecessary competence were (1) taking machine shorthand and (2) operation of the Varityper. Those competencies peculiar to accounting specialization tended to have the greatest difference as judged by the accounting instructors as compared to the business teachers in clerical and steno-secretarial curriculums. The use of computer technology was generally ranked low by all respondents.
A Factor Analysis of the Occupational Competence of Vocationally Certified Teachers of Business Education Subjects

by

Martin Delbert Singkofer

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A FACTOR ANALYSIS OF THE OCCUPATIONAL COMPETENCE
OF VOCATIONALLY CERTIFIED TEACHERS
OF BUSINESS EDUCATION SUBJECTS

CHAPTER I

INTRODUCTION

Background of the Problem

A most important factor in the success of any vocational or technical program is the competence of the instructional and related staff. Shortcomings in facilities and equipment may be compensated for by experienced, technically competent, and enthusiastic faculty as Miller (44) stated:

Some degree of occupational or employment experience is important for all of the teaching staff in a vocational or technical education program. The work experience must relate directly to the technical subject matter taught, must be recent enough to reflect current business or industrial practice, and must involve the kinds of skills and competencies that will be taught in the laboratory or classroom.

The duration of employment experience necessary to impart this minimum skill and knowledge to the teacher varies with individuals and their respective past employment. In lieu of valid testing procedures that can establish occupational competency, most state departments of education require from three to five years of occupational experience for vocational-technical teacher certification (p. 19).

Preservice education for teachers of vocational subjects is similar to the undergraduate programs of those entering the
nonvocational teaching areas. The Fourth Annual National Vocational-Technical Teacher Education Seminar Proceedings edited by Ferguson (25) shows an undergraduate curriculum design that includes 60 credits in general education, 48 credits in professional education, 24 credits in electives, and 60 credits in technical preparation. Technical education, preparation in a subject matter specialty, can be gained through professional courses in the appropriate area or a competency examination based upon work experience. To some degree the background of the prospective teacher would determine the course of action to be followed.

The Education Professions--1968 report (66) indicated that teachers in office occupations may begin their teaching career by teaching nonvocational business education courses, and then acquiring the necessary occupational experience in either summer or full-time employment to be certified to teach the vocational courses. Distributive education teachers have little or no opportunity to teach nonvocational courses, often going directly from college to full-time employment in the distribution of goods or services, then entering the teaching field.

Trade and industrial teachers are less likely to have an educational degree than other vocational teachers. The procedure most commonly followed by this segment of the pedagogical population is occupational experience following high school graduation, part-time
teaching, teacher education training, and full-time teaching. An increasing number of industrial arts teachers are acquiring the baccalaureate degree before gaining occupational experience. A number of teacher education programs have work experience as part of the curriculum. This would necessitate an additional year or two for completion of the requirements for a degree. There is little if any incentive for a prospective teacher to follow this procedure and then receive the same salary as one following the four-year baccalaureate degree program. Canada has developed a pattern for inducing skilled workers to pursue a year's program in teacher education which includes a stipend to attend college for a year.

Miller (44) asserted that the instructional program in vocational education is built upon the level of occupational competence of the teacher. Some degree of experience is necessary; it must be related to subject matter taught, must include skills taught in laboratory or classroom setting, and must be recent enough to reflect current practices in business and industry.

The Massachusetts Advisory Council on Vocational Education prepared a study on the concerns of teacher certification and preparation in which it recommended that certification be based on knowledge and professional performance rather than transcript records. It also suggested, among other things, that certification examinations
include performance tests conducted by preparing institutions or state credentials committees.

Of considerable interest to the training of vocational and technical education personnel was the assessment of the Educational Professional Development Act of 1967 (66). Inservice education programs constitute a means of allowing vocational teachers to secure the occupational experience not normally available in university teacher education programs.

The federally funded summer institutes with stipends for participants are much more attractive to teachers, yet no more than 2 percent of vocational and technical teachers have been enrolled in those that have been conducted up to now (64, p. 200).

Two school systems that find it economically or politically practical to provide year-around employment for professional staff are Oregon Institute of Technology, Klamath Falls, Oregon, and Parkland College of Champaign, Illinois. Depending on background of staff and needs of the institution, staff members are assigned to curriculum development, professional development, or employment in the occupation being taught during non-teaching assignments. Institutions which provide these opportunities must have a major vote in determining which of their staff need work experience in business and industry which will keep them up to date in their chosen specialty. Equally important is the periodic return of teachers to
formal coursework at a college or university to renew competencies fundamental to the subject area taught.

Teachers on a normal nine-month contract often must choose between spending $500 on tuition and extra living expenses for summer school credit courses which may be relevant to their area of specialization and earning four or five times that amount working on a job that may or may not be relevant to the subject area taught.

Another effective method of maintaining occupational proficiency is for staff members to hold memberships in professional and technical societies related to their occupational specialty. Staff should be encouraged to participate in professional and technical society meetings as well as technical teacher training institutes.

The Education Professions--1968 report (66) stated that:

Many craftsmen and foremen qualify as teachers, initially on the basis of their practical experience. In addition, about 50,000 industrial arts teachers, 5,000 nonvocational home economics teachers, 30,000 nonvocational business education teachers, plus an unknown number of former teachers of vocational and practical arts, are available for vocational teaching under certain conditions. Some vocational education spokesmen deny the transferability of many of these teachers, but when it is necessary to employ certain of these people to offset temporary shortages of vocational teachers, in practice, State vocational education agencies lower "standards" (p. 191).

Similarly, when vocational teachers are in plentiful supply, state boards of vocational education may tend to discount summer employment as being irrelevant in counting toward the minimum
requirements for certification, thus controlling the supply of voca-
tionally certified teachers. Most states refuse to certify a vocational
teacher until requested to do so by a school that wishes to employ that person. With certification resting within the state department, con-
trol of preparation requirements rests with that body, not with the local district.

As should all teachers, vocational and technical teachers must know their subject matter as well as how to teach it. Master of the art and science of teaching is assumed if a certain pattern of courses has been completed (66, p. 192).

Methods of determining subject matter competency vary greatly from subject to subject, some requiring only specialized college courses, others requiring practical experience as described by the state board. It is generally agreed that years of experience alone do not constitute satisfactory competence, but only three States (New York, California, and Pennsylvania) have used trade competency examinations extensively.

This study utilized the competencies and objectives as set down by the Oregon Board of Education in determining curriculum content for the Clerical, Steno-Secretarial, and Accounting clusters. These stated objectives determine the curriculum content and competencies needed for entry-level occupations in the business environment as prescribed by the Board.
Statement of the Problem

The purposes of this study were to (a) identify, through vocationally certified business education teachers in secondary schools in Oregon, the common competency elements deemed necessary for entry-level vocational certification, and (b) develop, from these elements, groupings of performance objectives that would serve as a basis for use in an occupational competency test.

Questions to be answered from responses to the questionnaire of competencies taken from the objectives stated in the clusters presently used in the secondary schools of Oregon--Accounting, Clerical, and Steno-Secretarial were:

1. Can the essential competencies that are common to all business teachers be identified?
2. Are there any significant differences in the basic competencies needed by business teachers in the three cluster areas?
3. Can inservice business education teachers identify those competencies essential to the teaching of business subjects?
4. Can suitable groupings of competencies be established as a resource bank for the development of performance-based competency tests?
Significance of the Problem

State legislatures have been working on an interstate certification project headed by Lierheimer (39) to give state educational agencies the authority to contract with other state educational agencies for reciprocal certification. Legislatures in Maryland, Massachusetts, New York, California, Vermont, West Virginia, South Dakota, Minnesota, and Indiana have passed such legislation and it is pending in 30 other states. A working model acceptable to certification agencies in other states will make the transition and relevancy of credentialing meaningful to school districts as well as state departments of education.

The results of this study provided information and data reduced to performance or behavioral objectives from which a state agency could develop a competency test to evaluate the academic training of candidates for teaching in a specific cluster through oral, written, and manipulative examination. By surveying inservice vocationally certified secondary business teachers, competencies were identified that form a basis from which relevant examination procedures could be developed by state certifying agencies that are current with the changing business practices found in the world of work.

It is recognized that many of the qualities of a successful teacher cannot be measured by standard cognitive based examination
procedures. Skills and performance related to the objectives of the curriculum are prerequisite to certification.

The three areas of concentration in this study, as denoted by the three clusters presently offered in the business departments of many secondary schools in Oregon, are by no means the complete curricula entrusted to the business educators. Data processing, and in some cases, economics and distributive education may come under the jurisdiction of the business education department. The reason for the selection of the three areas was the commonality of content and application. These three areas of business education, accounting, clerical, and steno-secretarial, form the clusters based on 10,000 jobs in Oregon with 2,000 replacement or expansion by 1975.

Definitions of Important Terms Used

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

1. Analysis of Variance--Has as its objective the location of independent variables which affect the response. The procedure partitions the total variation in a set of data according to the sources of variations.

2. Business Education--Represents the curricula in vocational and general education dealing with the accounting, clerical,
and steno-secretarial aspects of business and economic literacy. Included in the program is a provision to provide students with information and competencies needed to manage personal business affairs as well as in using the services of the business world.

3. **Clerical Practice**--Learning situations involving laboratory and discussion experiences which are designed to help pupils who are not pursuing secretarial or bookkeeping knowledge and skills develop knowledge and skills in clerical operations. Emphasis is on various activities such as filing, record keeping, typing, telephone and telegraph usage, mailroom activities, shipping procedures, personality development, machine operation, and job-application procedures.

4. **Cluster**--A family of occupations having similar skills and knowledge requirements. It is required that there be at least 10,000 full-time jobs in Oregon that require similar skills before a cluster can be established. It is also expected that within five years at least 2,000 more Oregon jobs will be open in each family of occupations. Oregon has identified the following 13 occupational clusters as those that meet the above requirements: Accounting, Agriculture, Clerical, Construction, Electricity-Electronics, Food Service, Forest Products, Health

5. Competence/Competency--The ability to do--to perform effectively the task(s) under consideration-implicit in this point of view is a consideration of all recognized aspects (cognitive, psychomotor and affective) of the task(s) to be performed.

6. Factor Analysis--The statistical method useful in the identification of domains or tasks to determine their common factors.

7. Occupation Analysis--The systematic method of obtaining information on jobs, tasks, and positions focusing on occupations--duties, requirements, and environments.

8. Occupational Competence--The skills, understandings, and appreciation needed for successful employment in a specific occupation or cluster of closely related occupations.

9. Office Occupations--Those activities performed by individuals in public and/or private enterprises, which are related to the facilitating function of the office. They include such items as recording and retrieval of data, supervision and coordination of office activities, communication, and reporting of information.

10. Proficiency--The level or degree of expertness required in the performance of a task.
11. **R-Technique**--A factor analytic technique which examines the relationship of every competence with every other competence and provides for a clustering of common competencies.

12. **Social Competency**--The sum total of personal characteristics which are vocationally relevant, including personal appearance, traits, and attitudes.

13. **Spurious Competency**--A competency with a factor loading of less than $+0.50$. It is tentatively identified as clustering with the factor in which its highest factor loading occurred even though its loading is less than $+0.50$.

14. **State Plan**--The document submitted annually by the state board for vocational education to the U. S. Office of Education describing the state's vocational education plan. This plan is prerequisite to receiving funds under the Vocational Education Acts.

15. **Task/Job Analysis**--The interpretation of information collected about work performed. Task analysis determines the skill requirements and knowledge of the job.

16. **Teacher Certification**--Granted after the minimum academic, professional, and other standards established by state departments of education are met by those who wish to teach full- or part-time in the public school system.
17. **Vocational Education**--Vocational or technical training or re-training which is given in schools or classes (including field or laboratory work and remedial or related academic and technical instruction incident thereto) under public supervision and control or under contract with a state board or local educational agency, and is conducted as part of a program designed to prepare individuals for gainful employment as semiskilled or skilled workers or technicians or subprofessionals in recognized occupations and in new and emerging occupations, or to prepare individuals for enrollment in advanced technical education programs, but excluding any program to prepare individuals for employment in occupations generally considered professional or which require a baccalaureate or higher degree.

18. **Vocationally-Certified Business Teacher**--A secondary school teacher qualified to teach the occupationally specialty courses in an approved cluster as determined by the state board of education.

**Oregon Curricula Clusters**

The career cluster curriculum is based on the concept that occupations can be classified into logically related groups having authentic identical or similar work-performance requirements.
Each cluster curriculum centers on the significant identical or similar teachable skill and knowledge requirements common to the occupations in the cluster. Emphasis is given to the competencies required by key occupations in the cluster—those which are particularly representative of significant subgroups of occupations and/or which offer significant employment opportunities.

The career cluster curriculum must result in the acquisition of skills and knowledges (occupational competencies) that will qualify the completing student for at least entry-level employment in the cluster occupations and for specialized occupational education and training at an advanced level. This kind of occupational preparation demands learning experiences in a realistic occupational environment and with sufficient depth to result in salable job skills. Such experiences normally require an occupational laboratory and/or work experience training station.

Cluster curriculums developed by the State Department of Education verified by state manpower needs are:

- Accounting Occupations
- Agriculture
- Clerical
- Construction
- Electricity-Electronics
- Food Service
- Health Occupations
- Marketing
- Mechanical
- Metals
- Public Service
- Steno-Secretarial

Those clusters peculiar to the business education department of the secondary schools in Oregon are Accounting, Clerical, and
Steno-Secretarial. Excerpts from these cluster guides describing the cluster, basic objectives, special areas of learning experiences, and related skills and knowledge are found in Appendices I, J, and K.
CHAPTER II

REVIEW OF RELATED LITERATURE

As early as 1924, Ruggles foresaw the possibility of devising and standardizing a set of tests that might be useful in the selection of office workers of the lower grades. It was hoped that such a set of tests might be supplanted by other tests based on the same principles but covering higher ranges of clerical work. It was recognized that there might be commonality among the elements that compose the daily routine of the office worker. Ruggles (58) stated that:

In the field of public service a thoroughgoing effort has been made during the past few years to analyze occupations, and to state the associated duties in terms most ready of comparison, this being done as a basis for salary standardization and promotions, and for examination purposes. It was on the basis of such an analysis of clerical work that the sampling tests set forth in this study were constructed. An attempt was made to go beyond the usual job analysis statement of duties, in order to secure more generalized descriptions which might serve as standards, and thus might be applied to clerical positions in any office (p. 3).

Such may well have been the beginning of the Dictionary of Occupational Titles with its analysis of jobs, worker trait groups, aptitudes, general education development level, specific vocational preparation time, and other factors influencing job performance. Recognition of the families of occupational clusters may well be illustrated by the diagram of Ruggles (58, p. 13) showing both the
common foundation of clerical work and the divergence as one goes up the scale. The common clerical basis includes such fundamental operations as comparing records, checking, tabulation, filing, and mathematical computation. At the top of each triangle is the specialization that is peculiar to the suggested field.

Common "Clerical Work" Basis of Specialized Office Positions

Examiner  Statistician  Accountant  Secretary  Librarian

Burton (8), in a study of the competencies needed by beginning office workers in the state of Connecticut, stated that:
One of the major and often valid criticisms of business and businessmen concerning the office education in the high school is that it is often behind the times in teaching modern office competencies and knowledges (p. 6-7).

Froehlich (22), reporting on trends in teacher education in the Eastern Business Education Yearbook, stated that:

A special qualifying test is one means of determining the trainee's competency in the subject matter he is about to teach at the high school level. Although less than 10 percent of the schools reported using such a test, several more indicated that they were in the process of beginning such an evaluation of content preparation. Other schools use a grade requirement of C or C plus as a prerequisite to methods instruction. There seems to be a need to establish criteria by which to measure the subject matter proficiency a student needs to demonstrate (p. 327).

New bachelor's degree recipients have normally been the source of teacher supply in the past. Vocational certification requires additional training and/or experience related to the instruction. The supply and demand is allied to the manpower needs of business and industry in a changing technical society. Teachers do move across occupational lines, between private and public employment, and often reenter teaching on a part-time basis.

Blake (48) reported in the National Education Research Bulletin that we have thousands of men and women who can become teachers, now in business and industry.

Universities and colleges are responsible for recognizing this vast source of manpower in a changing society and developing teacher education programs in
vocational education that will utilize the varied back-
grounds of men and women who already possess approxi-
mately one-third of the necessary education to become
qualified teachers (p. 66).

In a study conducted by Hensel (30) concerning enlisted men
separating from military service, it was ascertained that the level of
education attained before entering military service had a profound
effect on the expression of interest in teaching. It was also noted
that interest in teaching increases as rank increases. It would appear
that enlisted personnel separating from the military could provide an
excellent source for recruiting potential teachers in the electrical
trades, mechanical service and hand trades, and business and office
occupations.

Amendments to the Vocational Education Act of 1963 provide for
state plans for vocational education to include provisions for determin-
ing minimum qualifications for vocational education personnel. These
qualifications outline minimum qualifications for certification such as;
educational, occupational and teaching experience.

In a study conducted by Oeland (50), the five most frequently
mentioned strengths concerned with what teachers should have were
skill in subject areas, good human relations, experience and training,
willingness to work, and organizational ability. These same high
school administrators indicated that overspecialization, poor human
relations, lack of training in a specific area, lack of breadth of
interest, and lack of business experience as the highest ranking weaknesses most frequently mentioned.

Beasley and Smiley (2) related the problem of vocational teachers failing to provide students with relevant knowledge and contemporary skills needed for successful employment because they are not keeping abreast of advanced technological changes. Consequently, young people are entering the world of work ill equipped to survive in modern industry.

Programs related to gaining first-hand information to update business education curriculums include a Directed Observation of Elementary Office Positions Program between Temple University and business teachers in Bucks County, Pennsylvania, and a vocational internship program at Colorado State University in which students enter into a formal agreement with CSU detailing the individual's program of formal instruction and the correlated occupational experience. The student can earn both his bachelor of education degree and vocational credentials within a five-year period.

The purpose of an occupational competency test is used to fulfill one of the requirements for entrance into teacher education programs, to meet requirements for certification, or to establish a teacher candidate's degree of occupational proficiency. Performance tests for business and office occupations have been standardized and
frequently used to measure several levels or job clusters of job classifications.

Kazanas and Kieft (34) reported on the project in which the Michigan State Division of Vocational Education and Eastern Michigan University collaborated in developing and refining competency tests and testing procedures to be used in certifying trade and industrial teachers. In each of the 11 states reporting the use of competency tests, the average time limit for the performance tests was approximately five hours. They concluded that these examinations can be effective in determining teacher competency, increasing the number of teachers qualified to teach vocational subjects, and in indicating weaknesses of those who fail to qualify. A few of the state directors surveyed expressed the viewpoint that it was doubtful if the competency examination could be developed that would replace actual work experience.

Some of the principles for testing the competencies of vocational teachers as listed by Gallington and Haskell (27) include:

Demonstrated, tested occupational competency should be the main basis for the initial state certification of vocational-technical teachers. Increasingly, state certification agencies will need to give special attention to the possible role of occupational competency for certificate renewal.

Occupational competency examinations should be developed by and used with the aid of skilled craftsmen, peer groups of the examinee's purported trade or occupation.
Standardized or national examinations for occupational competency will soon become outdated due to the "canned" nature of their contents. They will not accommodate all regional areas of the vocational school. They lend themselves to counterfeiting and wide misuse (p. 28).

The last statement may be the logical deterrent to having a consortium of states pool their resources in establishing occupational competency examinations.

Of major importance in the field of occupational testing is the three-phase national project under the supervision of Panitz and Olivo (53). This H.E.W. funded project is concerned with developing competency tests in the trade and industrial vocational area. A consortium of states participating in this program will have the benefit of tests from which they will be able to adapt specific portions for individual competency tests.

The review of the literature confirmed the earlier belief of the principal investigators, study staff, planning committee, and other vocational industrial leaders of the extremely limited amount of recorded experiences about occupational competency testing. This is appalling, in view of the fact that a few states have required the satisfactory passing of an occupational competency examination to measure and validate occupational experience for over 40 years. The situation is further aggravated when industry, government, the military, and others need to place such dependence on the results of valid measures of occupational competence (52, p. 13).

Smith (61) reported that:

Beginning in 1951, when 62 persons received this epitome of the secretarial profession, a total of 3,330 have become CPS (Certified Professional Secretary) holders, including representatives from business,
industry and the teaching profession. Another milestone could be gained by establishing the Certified Professional Secretary certificate as a terminal qualification for business teachers (p. 22).

The number of CPS certificates now number over 6,000.

Both the schools and the business world would gain if teachers of secretarial science or office administration courses had the above-mentioned business experience so they would be in a position to teach practical type secretarial training. The examination covers two days which includes such facets as Personal Adjustment and Human Relations, Business Law, Business Administration, Secretarial Accounting, Secretarial Skills, and Secretarial Procedures. If secretarial teachers would have equal status with the CPA in accounting, or the LL. B. certificate in law, dynamic strides could be made that would benefit all business education curricula.

National Business Entrance Tests are achievement tests that measure the marketable productivity of students in one or more of the five basic office jobs. Bookkeeping, general office clerical, machine calculation, stenography, typewriting, business fundamentals and general information are the specific areas covered. Tests of this nature can be used to evaluate the teaching effectiveness within the school, upgrade the business education program, and help to assure that the graduates are prepared for employment on a competitive basis.
Cluster Analysis of Office Occupations

A monumental task of identifying clusters of tasks performed by a comprehensive sample of office employees was undertaken by Perkins (54). The 599 office tasks were clustered within 13 major categories of tasks useful in reevaluating the high school business curriculum. He classified the respondents in six broad occupational categories: supervision, steno-secretarial, clerical, bookkeeping-accounting, business machine operators, and data processing. Analysis of the data obtained suggests that skills represent only a portion of the office employees' function.

Thomas (63) identified 79 items from a checklist of 139 basic clerical operations as being significant to cluster. The eight components of work on clusters were: typing, listing and compiling, communication, planning and supervision, filing, stock handling, routine clerical operations, and calculation. Two additional clusters, stenographic and automatic machine operation, could have been identified with additional items in the checklist.

Malsbary, reporting in the Eastern Business Education Association Yearbook (22), suggested the following list of skills and abilities to help the pupil who is seriously considering a career in bookkeeping and accounting occupations:
. To reconcile a bank statement with the checkbook.

. To read, interpret, and prepare material presented in tabular or graph form.

. To read and prepare reports.

. To dictate and write business letters.

. To make decisions based on business data and information.

. To calculate the amount and percent of costs, price increases, and related mathematical information.

. To obtain or seek out needed information of a business nature through using library resources.

. To understand legal terms and recognize the legal implications of a given course of action.

. To recognize and be able to prepare common business forms and papers.

. To read, interpret, and use maps, globes and similar geographic materials.

. To read discriminately and to make wise use of advertising.

. To use the business machines that facilitate the bookkeeping and accounting work of the office (p. 141-142).

A similar report by Voyles in the Eastern Business Education Association Yearbook (23) stated that the office practice teacher can make a significant contribution in preparing teachers to help students meet the objectives of a curriculum.

The objectives for office practice have been included in business education methods books, state courses of study, office practice syllabi, and clerical practice
textbooks. A summary of objectives most often listed follows:

1. To develop skill in the operation of office machines on the acquaintanceship level, on the initial employment level, and on the expert level. The level to which a student develops skill will depend upon the ability of that student and his interest in office machines.

2. To develop ability to perform efficiently those general office activities usually assigned to beginning office workers. These activities may include filing, computations on office machines, reception duties, answering the telephone, maintaining records, handling incoming and outgoing mail, and operating duplicating and copying machines.

3. To maintain and improve typewriting skills such as straight copying with speed and accuracy, statistical typewriting, preparing reports, dictation at the typewriter, and composing short letters and memorandums.

4. To develop skill in machine transcription to the level of proficiency for employment. Many clerical workers can get jobs as stenographers if they can transcribe accurately and quickly.

5. To develop ability to proofread and evaluate one's own work and to be accuracy-conscious. The use of computers in business requires extreme accuracy (p. 113).
CHAPTER III

DESIGN OF THE STUDY

The Dependent Variable

The dependent variable in this study was the rating assigned by respondents in the sample to denote their perception as the significance or importance placed on occupational competencies requisite to successful performance on the job. Respondents, which included vocationally certified business education teachers having primary responsibility in one of the three business clusters presently used in the state of Oregon, were asked to evaluate each competency in relation to their job. All competencies were assigned proficiency levels based upon a five-point Likert scale. Each competency was scored independently for a total of 75 dependent variables. The scale used may be found in the Occupational Competence Questionnaire in Appendix D.

Preparation of the Instrument

The instrument used in this study was a mail survey questionnaire containing 75 occupational competencies together with a five-point Likert scale which enabled the respondent to judgmentally score the level of proficiency necessary for each competency. The
instrument presented by Halfin and Courtney (29) served as a model for the development of the questionnaire used in this study.

The initial step in the development of the questionnaire was a review of the literature concerning the occupational competence of teachers and professionals in all areas of vocational education. Separation of professional competence from occupational competence necessitated close scrutiny of those items of competence and how they were acquired. Those competencies peculiar to the teaching of business subjects in the secondary schools were selected from the cluster objectives as enumerated by the state of Oregon Board of Education in the guidelines for the Steno-Secretarial, Clerical, and Accounting clusters.

Each of the objectives for the clusters mentioned was listed separately. A cross-check of similar items necessitated a decision as to whether they were identical in content and combined or whether they were peculiar to that cluster content and retained. Similar items may therefore appear in the 75 competencies found in the questionnaire. Performance objectives similar to those found in the Oregon clusters may also be found in National Business Entrance Tests, Certified Professional Secretary examinations, the Eastern Business Teachers Association yearbooks, and in studies by Burton (8), Perkins (54), and Weber (71).
The second step was to present the questionnaire to a jury of experts for the purpose of evaluating the format, content, clarity, and comprehensiveness of the instrument. The composition of this jury was a select list of business educators from the state of Oregon as identified by the state specialist in business education from the Oregon State Department of Education. Representatives from secondary, community college, and university staffs were selected for the jury. A listing of the 12 members of the jury may be found in Appendix B.

The same jury of experts, because of its knowledge of the subject area and cluster development, was used in field testing the instrument. The cover letter accompanying the questionnaire (see Appendix C) directed the jury to complete the instrument, correct any ambiguities prior to submitting the instrument to teachers of occupational specialty courses of the three clusters, and recommend changes in format or wording. The final draft of the questionnaire sent to respondents may be found in Appendix D.

Selection of the Sample

The study's population utilized the vocationally certified business education teachers in the secondary schools of the state of Oregon. Two criteria were considered in the selection of respondents. First,
only those secondary schools in the state authorized to offer one or more of the business clusters were selected. Second, only teachers currently teaching in one of the clusters were identified as respondents. Authorization by the state board does not necessarily mean that a secondary school is offering the course content found in the guidelines of each cluster. No respondents were selected from staff who primarily teach the allied supporting courses for any of the clusters or were not vocationally certified by the state. These allied courses are found in the content of each of the business education clusters approved by the Oregon Board of Education.

Identification of respondents meeting the criteria was made through records obtained from the state specialist for business education at the Oregon State Department of Education. Two hundred nine vocationally certified business education teachers teaching business subjects in secondary schools in the state of Oregon where clusters in business education were approved were identified from the 1972-73 Oregon Business Education Association Directory. Included in the sample to whom questionnaires were mailed were 42 schools authorized to give instruction in the Accounting cluster, 109 schools in the Steno-Secretarial cluster, and 112 in the Clerical cluster. Of this identification of schools authorized to give instruction in one or more of these clusters, 209 vocationally certified teachers were identified as qualified to teach business subjects. Vocational certification does
not indicate the business area in which they were qualified regarding the cluster area. Questionnaires were sent to each of these teachers. A further check on whether or not they were teaching in one of the cluster areas was made by having them indicate on the questionnaire their primary cluster responsibility.

Collection of Data

Several steps were involved in the collection of data. Because of the uncertainty of secondary schools offering curricular courses in any or all of the clusters during the 1972-73 school year, pre-stamped, self-addressed questionnaires were mailed to all possible qualified teachers as noted in the sample selection with a cover letter that explained the purpose of the questionnaire (see Appendix C). All data were collected within a period of four weeks.

Follow-up of respondents initially sent questionnaires was done by telephone. This method seemed to best conserve the time element as school and home telephone numbers are listed in the Oregon Business Education Association Directory and verified as being current.

As each questionnaire was received, it was numbered and coded into one of the three cluster classifications. A total of 132 instruments (63%) was returned from respondents, two of which were discarded because of no cluster identification, and five as noting a
different cluster than one of the three business education clusters utilized in this study.

To facilitate the processing of data for statistical analysis, it was arbitrarily decided that an equal number of questionnaires (25) would be selected from each of the three cluster areas for inclusion in the statistical design of the study. The first 25 questionnaires returned by the respondents in each of the three cluster areas were used as a sample.

An interesting aside not considered in analyzing the data that was generated from the respondents' questionnaires was the average number of years teaching experience (10.82) and the average number of years work experience (5.63) of those respondents reporting such data. It could not be ascertained whether this data represented total years teaching in the field of business education or whether the years of work experience was directly related to their cluster specialty.

**Statistical Design**

The problem was (a) to identify the common competency elements deemed necessary for entry-level vocational certification of business education teachers, and (b) develop, from these elements, groupings of performance objectives that would serve as a basis for use in devising occupational competency tests as a part of the certification process.
The general design of this study included the following:

1. The population for the study was vocationally certified business education teachers teaching in one of the three clusters authorized by the Oregon Board of Education for use in secondary schools in the state. A sample of 25 teachers in each of the three areas--Steno-Secretarial, Clerical, and Accounting--provided data by completing and returning the 75-item questionnaire which was mailed directly to their home address.

2. Responses regarding the degree of proficiency needed to be vocationally certified were reported on a five-point Likert scale. Values of responses ranged from "unnecessary, not related to performance on the job" to "absolutely essential, total competence and maximum proficiency needed to progress to a decision-making position."

3. There was an interest in learning if differences existed among the competency mean scores for the business teachers participating in the study. The major question tested in this study asked if there are any significant differences in the basic competencies needed by business teachers in the three cluster areas. The one-way classification analysis of variance measured the mean score differences and was used to test the question. The test statistic used to analyze contrasts among the mean scores for
each competency was the F statistic with the .05 level of significance being used to determine where differences existed among the three groups. A test of Least Significant Difference (L. S. D.) was used to determine where specific differences existed between adjacent mean scores of the rejected competencies. The Analysis of Variance design used in testing the hypothesis may be found in Appendix E.

4. Data were analyzed through the use of the R-technique. This form of analysis examined the relationship of every competency with every other competency and provided for a clustering of common occupational competencies. A 75-competency inter-correlation matrix based upon data collected from 75 responses was generated.
CHAPTER IV

PRESENTATION AND ANALYSES OF DATA

Results of the Analysis of Variance Tests

The F statistic was used to conduct a total of 75 one-way classification analysis of variance tests in the study. In each instance, responses of the 75 business teachers in secondary schools were tested to determine whether or not a significant difference existed among the competency mean scores. Generally, the test of the competency mean scores was similar between the Steno-Secretarial and Clerical clusters, but it was unlike when compared with the Accounting cluster scores. For the 27 rejected items identified, the Least Significant Difference was computed. Results of these tests are shown in Tables 2 through 7, pages 39-51.

Results of Factor Analysis

A factor analysis method was used for the purpose of determining specific groupings of the 75 competencies included in the study. These competencies may be found in Appendix D, pages 74-78. This procedure permitted the identification of clusters of competencies in which there existed a high degree of correlation with the extracted factors. Only those factors with a factor loading of \( + .50 \) were
included in a factor. Those items with less than $\pm 0.50$ are listed separately with each factor in which they ranked highest under the subheading of "Spurious Competencies." Spurious competencies were defined as those which loaded highest under one factor but which had factor loadings of less than $\pm 0.50$.

The R-mode factor analysis was considered to be the most important factor in this study. It examined the relationship of every competency with every other competency according to respondents.

Data were factor analyzed a total of three separate times using the R-technique with factor solutions of six, seven, and eight. Factor names were assigned to each group of competencies after the data were analyzed. These titles, representative of the Oregon clusters, were arbitrarily assigned to the factor groupings and are assumed to be indicative of the nature of the competencies which loaded under each factor.

Table 1 lists the common factor variance generated on the computer in the eight-factor solution showing the percentage for each factor and the cumulative percentage of all factors. This table also gives the same common factor variance for the seven- and six-factor solution.

The seven-factor solution was chosen as having the largest number of competencies and was more balanced than either of the other factor solutions. It generated 66 competencies with six
Table 1. Percentage of common variance for the R-mode analysis.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Percentage</th>
<th>Cumulative Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Basic Business Operations</td>
<td>38.55584</td>
<td>38.55584</td>
</tr>
<tr>
<td>II Accounting-Bookkeeping Functions</td>
<td>21.89177</td>
<td>60.44761</td>
</tr>
<tr>
<td>III Managerial Accounting</td>
<td>9.79591</td>
<td>70.24352</td>
</tr>
<tr>
<td>IV Secretarial Specialization</td>
<td>6.78115</td>
<td>77.02467</td>
</tr>
<tr>
<td>V Data Processing, Machine Operation</td>
<td>5.61398</td>
<td>82.63865</td>
</tr>
<tr>
<td>VI Office Management, Supervisory</td>
<td>4.67929</td>
<td>87.31794</td>
</tr>
<tr>
<td>VII (no competencies generated)</td>
<td>4.12873</td>
<td>91.44666</td>
</tr>
<tr>
<td>VIII (no competencies generated)</td>
<td>3.11961</td>
<td>94.56627</td>
</tr>
</tbody>
</table>

overlapping other factors. These competencies are included in both factor groupings as evidenced in Tables 2 through 7, pages 39-51. Each table is illustrative of a factor and presents competencies with factor loadings of $+0.50$ or greater. Data analysis recorded no competencies for Factor VII, hence it is not listed in the tables.

The eight-factor solution contained a total of 65 competencies with factor loadings of more than $+0.50$ with five overlapping--qualifying for acceptance in two different factors. Competencies clustered in Factors I through VIII numbered 20, 17, 10, 8, 3, 6, 1, and 0.
A total of 62 competencies with factor loadings of \( \geq .50 \) or greater was generated from the six-factor solution with three items overlapping more than one factor. Although each of the six factors contained competencies (22, 17, 10, 7, 3, 3), the three competencies (3, 10, 12) included in the sixth factor are the same items under Factor V in the seven-factor solution.

**Factor I. Basic Business Operations**

A total of 21 competencies loaded under Factor I, Basic Business Operations. No attempt was made to break the factors down into subgroupings within those factors. Table 2, pages 39-41, is representative of competencies needed by or generally considered to be entry-level aptitudes and attitudes developed jointly in any segment of the business education curricula. Four spurious competencies were added to this factor because of their loading, making this grouping account for one-third of all the competencies included in this study.

Of considerable interest was the fact that the first 11 mean ranked items of the 75 competencies included in this study were found in this factor. These competencies (9, 16, 17, 21, 48, 50, 51, 60, 61, 63, 67) identify personality traits, office behavior, and general demonstrated ability to use references in handling written
Table 2. Results of Significance Testing for Factor I, Basic Business Operations

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Competency</th>
<th>Means (by cluster)</th>
<th>Computed &quot;F&quot;</th>
<th>Hypothesis*</th>
<th>L. S. D. Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Identify basic calculating machines and know uses in clerical activities</td>
<td>3.88 3.76 3.80</td>
<td>.1631</td>
<td>retain</td>
<td>S = C C = A S = A</td>
</tr>
<tr>
<td>5</td>
<td>Keep accurate records of all petty cash and check expenditures</td>
<td>3.68 3.60 3.92</td>
<td>.7647</td>
<td>retain</td>
<td>S = C C = A S = A</td>
</tr>
<tr>
<td>9</td>
<td>Demonstrate personality traits in keeping with required conduct in the business office</td>
<td>4.68 4.52 4.12</td>
<td>2.9762</td>
<td>retain</td>
<td>S = C C = A S = A</td>
</tr>
<tr>
<td>13</td>
<td>Type from straight copy at a speed commensurate with job-entry requirements</td>
<td>4.24 3.96 3.36</td>
<td>5.5735</td>
<td>reject**</td>
<td>S = C C &gt; A S &gt; A</td>
</tr>
<tr>
<td>16</td>
<td>Detect and correct spelling and typographical errors</td>
<td>3.76 4.56 4.40</td>
<td>1.4381</td>
<td>retain</td>
<td>S = C C = A S = A</td>
</tr>
<tr>
<td>17</td>
<td>Use dictionaries and reference manuals quickly and efficiently</td>
<td>3.68 4.44 4.16</td>
<td>2.8380</td>
<td>retain</td>
<td>S = C C = A S = A</td>
</tr>
<tr>
<td>21</td>
<td>Answer telephone clearly and in a professional manner</td>
<td>4.60 4.32 4.24</td>
<td>1.2864</td>
<td>retain</td>
<td>S = C C = A S = A</td>
</tr>
<tr>
<td>28</td>
<td>Apply proper procedures for handling incoming and outgoing mail</td>
<td>3.96 3.52 3.20</td>
<td>4.7478</td>
<td>reject</td>
<td>S = C C = A S = A</td>
</tr>
<tr>
<td>34</td>
<td>Inspects cancelled checks and reconciles bank statements</td>
<td>3.76 3.76 4.08</td>
<td>.8658</td>
<td>retain</td>
<td>S = C C = A S = A</td>
</tr>
<tr>
<td>37</td>
<td>Operate the ten-key adding machine with speed and accuracy using the touch system</td>
<td>3.88 3.76 3.88</td>
<td>.1397</td>
<td>retain</td>
<td>S = C C = A S = A</td>
</tr>
<tr>
<td>44</td>
<td>Proficiency in office methods of duplicating written material</td>
<td>4.08 3.80 3.40</td>
<td>3.1932</td>
<td>reject</td>
<td>S = C C = A S = A</td>
</tr>
</tbody>
</table>

(Continued on next page)
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Competency</th>
<th>Means (by cluster)</th>
<th>Computed &quot;F&quot;</th>
<th>Hypothesis* Decision</th>
<th>L. S. D. Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>Prepare deposits, write checks, and reconcile bank statements</td>
<td>3.84 3.72 4.08</td>
<td>.8610</td>
<td>retain</td>
<td>S = C</td>
</tr>
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<td>C = A</td>
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<td>S = A</td>
</tr>
<tr>
<td>48</td>
<td>Demonstrate acceptable office behavior in relation to coworkers, superiors,</td>
<td>4.60 4.44 4.28</td>
<td>.7067</td>
<td>retain</td>
<td>S = C</td>
</tr>
<tr>
<td></td>
<td>and visitors</td>
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<td></td>
<td></td>
<td>C = A</td>
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<td></td>
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<td></td>
<td>S = A</td>
</tr>
<tr>
<td>50</td>
<td>Produce mailable business letters, envelopes, and common business documents</td>
<td>4.56 4.16 3.88</td>
<td>3.2768</td>
<td>reject</td>
<td>S = C</td>
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<td>C = A</td>
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<td></td>
<td>S = A</td>
</tr>
<tr>
<td>51</td>
<td>Demonstrate ability to proofread printed copy with accuracy</td>
<td>4.72 4.24 4.28</td>
<td>1.9752</td>
<td>retain</td>
<td>S = C</td>
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<td>C = A</td>
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<td>S = A</td>
</tr>
<tr>
<td>60</td>
<td>Correct errors effectively on all forms and copies</td>
<td>4.60 4.20 4.00</td>
<td>3.1111</td>
<td>retain</td>
<td>S = C</td>
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<td>C = A</td>
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<td></td>
<td></td>
<td>S = A</td>
</tr>
<tr>
<td>61</td>
<td>Use clear, distinct speech in basic telephone techniques and courtesies</td>
<td>4.56 4.24 4.16</td>
<td>1.4379</td>
<td>retain</td>
<td>S = C</td>
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<td>C = A</td>
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<td>S = A</td>
</tr>
<tr>
<td>62</td>
<td>Demonstrate proficiency in locating material in files</td>
<td>4.20 3.92 3.76</td>
<td>1.5288</td>
<td>retain</td>
<td>S = C</td>
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<td>C = A</td>
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<td></td>
<td></td>
<td></td>
<td>S = A</td>
</tr>
<tr>
<td>63</td>
<td>Demonstrate proper use and care of typewriter</td>
<td>4.52 4.20 3.92</td>
<td>3.3744</td>
<td>reject</td>
<td>S = C</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>C = A</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>S = A</td>
</tr>
<tr>
<td>64</td>
<td>Demonstrate the basic procedures for effective filing</td>
<td>4.12 3.92 3.52</td>
<td>2.9619</td>
<td>retain</td>
<td>S = C</td>
</tr>
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<td></td>
<td>C = A</td>
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<td></td>
<td>S = A</td>
</tr>
<tr>
<td>67</td>
<td>Correctly spell the more commonly used business English words</td>
<td>4.44 4.44 4.20</td>
<td>.5211</td>
<td>retain</td>
<td>S = C</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>C = A</td>
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<td></td>
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<td></td>
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<td>S = A</td>
</tr>
</tbody>
</table>
### Table 2. (Continued)

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Competency</th>
<th>Means (by cluster)</th>
<th>Computed &quot;F&quot;</th>
<th>Hypothesis</th>
<th>Decision</th>
<th>L. S. D. Result</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Spurious Competencies</strong>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Make minor repairs and adjustments on common office machines</td>
<td>3.00 3.32 2.68</td>
<td>2.8409</td>
<td>retain</td>
<td>S = C</td>
<td>C = A</td>
</tr>
<tr>
<td>15</td>
<td>Locate and attach appropriate file to correspondence to be answered by employer</td>
<td>3.96 3.72 3.28</td>
<td>3.1933</td>
<td>reject</td>
<td>S = C</td>
<td>C &gt; A</td>
</tr>
<tr>
<td>25</td>
<td>Record all transactions neatly and accurately</td>
<td>4.00 3.76 4.16</td>
<td>.9870</td>
<td>retain</td>
<td>S = C</td>
<td>C = A</td>
</tr>
<tr>
<td>27</td>
<td>Take dictation on stenotype machine (machine shorthand)</td>
<td>2.20 1.84 2.00</td>
<td>.5355</td>
<td>retain</td>
<td>S = C</td>
<td>C = A</td>
</tr>
</tbody>
</table>

*The level of significance was .05 and the critical region with 2 degrees of freedom for the numerator mean square and 70 degrees of freedom for the denominator mean square was $F \geq 3.13$.

**The least significant difference test (L. S. D.) was used to compare means for the rejected items. The result of the L. S. D. as applied to the cluster means was accomplished as follows:

\[
\begin{align*}
S &= 4.24 \\
C &= 3.96 \\
A &= 3.36 \\
\end{align*}
\]

\[
\begin{align*}
S &= C \quad S = C \\
C &= A \quad C > A \\
A &= S \quad A = S \\
\end{align*}
\]

Therefore, $S > A$

***Spurious competencies are defined as those which loaded highest under one factor but had factor loadings of less than $+.50$.***
and oral communications. These competencies can form the basis of common clerical knowledge prerequisite to entering specialized training.

Factor II. Accounting-Bookkeeping Functions

A total of 18 competencies with factor loadings in excess of $0.50$ was generated for Factor II entitled Accounting-Bookkeeping Functions, which is depicted in Table 3, pages 43-44. Twelve of these competencies were rejected on the basis of factor loading. Closer analysis of these rejected items showed the least significant difference of competencies 42, 55, and 56, to be less than $0.50$. A difference of interpretation of the statement as to the use of the competency may account for placement in this factor.

Retained competencies (34, 45, 47, 54, 71, 73) are applicable to items associated with clerical-bookkeeping functions. The other 12 items in this factor were rejected because of the differences perceived by the Clerical and Steno-Secretarial cluster respondents ranking them much lower than the Accounting cluster respondents. It is assumed that accounting is of a more advanced technical nature than bookkeeping. Such specialization was elaborated upon by Ruggles (58).

Differentiation in competency examinations would clearly indicate the content for general and specific application of accounting
Table 3. Results of Significance Testing for Factor II, Accounting-Bookkeeping Functions.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Competency</th>
<th>Means (by cluster)</th>
<th>Computed &quot;F&quot;</th>
<th>Hypothesis* Decision</th>
<th>L. S. D. Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>Prepares working papers at end of bookkeeping cycle</td>
<td>2.92 2.92 4.00</td>
<td>8.7831</td>
<td>reject</td>
<td>S = C C &lt; A S &lt; A</td>
</tr>
<tr>
<td>22</td>
<td>Confirms accounts receivable and accounts payable balances</td>
<td>3.20 3.28 4.16</td>
<td>6.8645</td>
<td>reject</td>
<td>S = C C &lt; A S &lt; A</td>
</tr>
<tr>
<td>30</td>
<td>Balances books and compiles reports for management</td>
<td>2.88 2.96 3.76</td>
<td>6.0753</td>
<td>reject</td>
<td>S = C C &lt; A S &lt; A</td>
</tr>
<tr>
<td>34</td>
<td>Inspects cancelled checks and reconciles bank statements</td>
<td>3.76 3.76 4.08</td>
<td>.8658</td>
<td>retain</td>
<td>S = C C = A S = A</td>
</tr>
<tr>
<td>36</td>
<td>Compute payroll deductions and make required reports</td>
<td>3.08 3.24 3.80</td>
<td>3.6545</td>
<td>reject</td>
<td>S = C C &lt; A S &lt; A</td>
</tr>
<tr>
<td>42</td>
<td>Computes and records payroll data</td>
<td>2.96 3.40 3.76</td>
<td>4.6970</td>
<td>reject</td>
<td>S = C C = A S = A</td>
</tr>
<tr>
<td>45</td>
<td>Prepare deposits, writes checks and reconciles bank statements</td>
<td>3.84 3.72 4.08</td>
<td>.8610</td>
<td>retain</td>
<td>S = C C = A S = A</td>
</tr>
<tr>
<td>46</td>
<td>Records transactions in special journals</td>
<td>3.00 2.96 3.88</td>
<td>6.6130</td>
<td>reject</td>
<td>S = C C &lt; A S &lt; A</td>
</tr>
<tr>
<td>47</td>
<td>Explain the functions of negotiable instruments and list those in common use</td>
<td>2.84 2.80 3.12</td>
<td>.5948</td>
<td>retain</td>
<td>S = C C = A S = A</td>
</tr>
<tr>
<td>49</td>
<td>Ability to complete the bookkeeping cycle with reports</td>
<td>2.80 3.12 4.04</td>
<td>7.9692</td>
<td>reject</td>
<td>S = C C &lt; A S &lt; A</td>
</tr>
<tr>
<td>54</td>
<td>Apply demonstrated ability to accurately handle cash transactions</td>
<td>3.36 3.44 3.88</td>
<td>2.0000</td>
<td>retain</td>
<td>S = C C = A S = A</td>
</tr>
<tr>
<td>55</td>
<td>Prepares schedules of depreciation of various kinds</td>
<td>2.24 2.56 3.04</td>
<td>4.0714</td>
<td>reject</td>
<td>S = C C = A S = A</td>
</tr>
</tbody>
</table>

(Continued on next page)
Table 3. (Continued)

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Competency</th>
<th>Means (by cluster)</th>
<th>Computed &quot;F&quot;</th>
<th>Hypothesis* Decision</th>
<th>L. S. D. Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>56</td>
<td>Knowledge of and processing of forms--purchase order, sales invoice, credit memorandum</td>
<td>3.32 3.16 3.80</td>
<td>3.7818</td>
<td>reject</td>
<td>S = C C &lt; A S &lt; A</td>
</tr>
<tr>
<td>57</td>
<td>Apply knowledge of basic bookkeeping including simple entries in double-entry system</td>
<td>3.12 3.20 4.16</td>
<td>7.5360</td>
<td>reject</td>
<td>S = C C &lt; A S &lt; A</td>
</tr>
<tr>
<td>65</td>
<td>Organizes and explains classification of accounts</td>
<td>2.64 2.80 3.56</td>
<td>4.1848</td>
<td>reject</td>
<td>S = C C &lt; A S &lt; A</td>
</tr>
<tr>
<td>69</td>
<td>Examines accounts and records for accuracy</td>
<td>3.08 3.28 4.04</td>
<td>5.2568</td>
<td>reject</td>
<td>S = C C &lt; A S &lt; A</td>
</tr>
<tr>
<td>71</td>
<td>Ability to explain from kits provided by Internal Revenue Service federal income tax returns</td>
<td>3.04 2.96 3.36</td>
<td>.8796</td>
<td>retain</td>
<td>S = C C = A S = A</td>
</tr>
<tr>
<td>73</td>
<td>Accurately perform calculations of percentages, averages, measurements, and simple money statements</td>
<td>3.48 3.88 3.96</td>
<td>1.6570</td>
<td>retain</td>
<td>S = C C = A S = A</td>
</tr>
</tbody>
</table>

**Spurious Competencies**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Competency</th>
<th>Means (by cluster)</th>
<th>Computed &quot;F&quot;</th>
<th>Hypothesis* Decision</th>
<th>L. S. D. Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Demonstrates proficiency in business arithmetic calculations</td>
<td>3.68 4.00 4.16</td>
<td>2.9217</td>
<td>retain</td>
<td>S = C C = A S = A</td>
</tr>
<tr>
<td>20</td>
<td>Explain common methods of determining and recording wages, salaries, and taxes</td>
<td>3.48 3.48 3.64</td>
<td>.2251</td>
<td>retain</td>
<td>S = C C = A S = A</td>
</tr>
</tbody>
</table>
procedures, depending upon the depth to which one wished to pursue education or training in this occupational cluster. An overlap of Items 34 and 45, both referring to payroll records, would rightly be included in simple recordkeeping activity as well as part of the accounting process.

Factor III. Managerial Accounting

Ten of the competencies listed under this heading generally relate to that interaction between the actual accounting being carried on in day-to-day activities and those in which decisions are made relative to managerial functions in the use of information generated by the accounting process. Table 4, page 46, shows only two items (38, 55) being rejected, Item 55 being an overlap of the Accounting-Bookkeeping Function under Factor II. Most of these items would be a result of advanced or related accounting instruction in specialized coursework.

Factor IV. Secretarial Specialization

Characteristic of the competencies shown in this grouping are the skills performed by office workers that normally differentiate them from the basic clerical tasks. Secretarial Specialization competencies under Factor IV cluster the dictation and transcription of communications. The seven items rejected under this factor are
Table 4. Results of Significance Testing for Factor III, Managerial Accounting.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Competency</th>
<th>Means (by cluster)</th>
<th>Computed &quot;F&quot;</th>
<th>Hypothesis*</th>
<th>Decision</th>
<th>L. S. D. Result</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>S</td>
<td>C</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Issues reports and opinions relating to financial statements to stockholders</td>
<td>2.12</td>
<td>1.96</td>
<td>2.44</td>
<td>1.6863</td>
<td>retain</td>
</tr>
<tr>
<td>6</td>
<td>Can list the advantages and disadvantages of the major types of business enterprises</td>
<td>2.92</td>
<td>2.48</td>
<td>2.96</td>
<td>1.1928</td>
<td>retain</td>
</tr>
<tr>
<td>14</td>
<td>Analyzes depreciation, amortization, and depletion schedules</td>
<td>2.20</td>
<td>2.44</td>
<td>2.88</td>
<td>2.7875</td>
<td>retain</td>
</tr>
<tr>
<td>24</td>
<td>Knowledge of business law as it pertains to simple formation and execution of contracts</td>
<td>3.04</td>
<td>2.84</td>
<td>3.04</td>
<td>.3367</td>
<td>retain</td>
</tr>
<tr>
<td>29</td>
<td>Construct simple graphs and charts used in business</td>
<td>2.88</td>
<td>2.80</td>
<td>2.76</td>
<td>.0848</td>
<td>retain</td>
</tr>
<tr>
<td>38</td>
<td>Prepares state and federal payroll reports and summaries</td>
<td>2.84</td>
<td>2.76</td>
<td>3.48</td>
<td>3.6807</td>
<td>reject</td>
</tr>
<tr>
<td>52</td>
<td>Ability to make out manufacturing statements</td>
<td>2.20</td>
<td>1.84</td>
<td>2.32</td>
<td>1.5864</td>
<td>retain</td>
</tr>
<tr>
<td>55</td>
<td>Prepares schedules of depreciation of various kinds</td>
<td>2.24</td>
<td>2.56</td>
<td>3.04</td>
<td>4.0714</td>
<td>reject</td>
</tr>
<tr>
<td>58</td>
<td>Arrange and organize office for maximum efficiency in the flow of work</td>
<td>3.96</td>
<td>3.48</td>
<td>3.76</td>
<td>1.9464</td>
<td>retain</td>
</tr>
<tr>
<td>59</td>
<td>Devises forms and manuals from data supplied by management</td>
<td>2.80</td>
<td>2.72</td>
<td>2.96</td>
<td>.3200</td>
<td>retain</td>
</tr>
</tbody>
</table>

**Spurious Competency**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Competency</th>
<th>Means (by cluster)</th>
<th>Computed &quot;F&quot;</th>
<th>Hypothesis*</th>
<th>Decision</th>
<th>L. S. D. Result</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>S</td>
<td>C</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>Demonstrate proficient use of source material for information</td>
<td>3.92</td>
<td>3.80</td>
<td>3.44</td>
<td>1.4779</td>
<td>retain</td>
</tr>
</tbody>
</table>
explained in the cluster means with neither the Clerical or Accounting cluster respondents being totally responsible for the rejection.

Table 5, page 48, contains the competencies relating to the heading of Secretarial Specialization.

Occupational competency for the Steno-Secretarial cluster can be measured in terms of transcribing or composing mailable written communications in the appropriate form and reproduction process. This would be in addition to the basic clerical knowledge required of all office occupation personnel. The two spurious items, relating to specific tasks performed by secretarial personnel, require special skills peculiar only to secretarial specialization.

**Factor V. Data Processing, Machine Operation**

Only three competencies are clustered under Factor V, Data Processing, Machine Operation. The means for each of these items drop this grouping in the lower ten percent of the competencies in importance. The spurious competencies in this grouping are not homogeneous; therefore, no explanation of the retention of these items can be given. Table 6, page 49, shows the least number of competencies, yet the most diverse. Instruction in data processing in the secondary school is in its infancy. Vocationally certified teachers, unless recently graduated, are likely to be less skilled in this area,
Table 5. Results of Significance Testing for Factor IV, Secretarial Specialization.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Competency</th>
<th>Means (by cluster)</th>
<th>Computed &quot;F&quot;</th>
<th>Hypothesis* Decision</th>
<th>L. S. D. Result</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>S</td>
<td>C</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Prepare stencil, offset, and spirit masters and demonstrate efficient use of duplicating machines</td>
<td>4.12</td>
<td>3.92</td>
<td>3.36</td>
<td>4.9673</td>
</tr>
<tr>
<td>50</td>
<td>Produce mailable business letters, envelopes, and common business documents</td>
<td>4.56</td>
<td>4.16</td>
<td>3.88</td>
<td>3.2768</td>
</tr>
<tr>
<td>53</td>
<td>Compare basic systems of filing in use today with advantages and disadvantages of each</td>
<td>3.48</td>
<td>3.12</td>
<td>2.84</td>
<td>2.7971</td>
</tr>
<tr>
<td>66</td>
<td>Proficient in operation of transcribing and dictating equipment</td>
<td>3.72</td>
<td>3.44</td>
<td>2.92</td>
<td>3.5723</td>
</tr>
<tr>
<td>68</td>
<td>Compose mailable letters and other communications as required</td>
<td>4.40</td>
<td>4.04</td>
<td>3.92</td>
<td>1.4254</td>
</tr>
<tr>
<td>70</td>
<td>Choose appropriate media for communicating written messages</td>
<td>3.64</td>
<td>3.56</td>
<td>3.40</td>
<td>.3128</td>
</tr>
<tr>
<td>72</td>
<td>Demonstrate proficiency in transcribing notes accurately and efficiently</td>
<td>4.28</td>
<td>3.68</td>
<td>3.04</td>
<td>8.2953</td>
</tr>
<tr>
<td>75</td>
<td>Demonstrate proficiency in taking shorthand notes manually</td>
<td>3.84</td>
<td>2.92</td>
<td>2.20</td>
<td>13.9486</td>
</tr>
</tbody>
</table>

**Spurious Competencies**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Competency</th>
<th>Means (by cluster)</th>
<th>Computed &quot;F&quot;</th>
<th>Hypothesis* Decision</th>
<th>L. S. D. Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Record and transcribe minutes of meetings</td>
<td>3.64</td>
<td>3.28</td>
<td>2.80</td>
<td>4.2738</td>
</tr>
<tr>
<td>23</td>
<td>Prepare and type wills, deeds, and contracts</td>
<td>3.24</td>
<td>2.64</td>
<td>2.44</td>
<td>3.9755</td>
</tr>
<tr>
<td>Item No.</td>
<td>Competency</td>
<td>Means (by cluster)</td>
<td>Computed &quot;F&quot;</td>
<td>Hypothesis* Decision</td>
<td>L. S. D. Result</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------------------</td>
<td>--------------</td>
<td>----------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S</td>
<td>C</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Prepare cards for unit record processing (key punch)</td>
<td>2.24</td>
<td>2.72</td>
<td>2.44</td>
<td>1.4187</td>
</tr>
<tr>
<td>35</td>
<td>Operates Vari-typewriter in a proficient manner</td>
<td>2.44</td>
<td>2.12</td>
<td>2.00</td>
<td>1.6394</td>
</tr>
<tr>
<td>39</td>
<td>Key punch information on cards or tape for data processing input</td>
<td>2.32</td>
<td>2.64</td>
<td>2.28</td>
<td>.9977</td>
</tr>
<tr>
<td></td>
<td><strong>Spurious Competencies</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Arrange travel schedules and reservations using various resource materials</td>
<td>3.16</td>
<td>3.20</td>
<td>2.44</td>
<td>6.3913</td>
</tr>
<tr>
<td>26</td>
<td>Prepares reports for government</td>
<td>2.96</td>
<td>2.88</td>
<td>3.24</td>
<td>.8914</td>
</tr>
<tr>
<td>31</td>
<td>Keep personnel records of employees</td>
<td>3.12</td>
<td>3.20</td>
<td>3.08</td>
<td>.1011</td>
</tr>
<tr>
<td>41</td>
<td>Perform simple to complex mathematical problems on the semi- and fully-automatic rotary and listing calculators</td>
<td>3.16</td>
<td>3.48</td>
<td>3.16</td>
<td>1.3083</td>
</tr>
<tr>
<td>74</td>
<td>Uses data processing input and output</td>
<td>2.64</td>
<td>2.88</td>
<td>2.60</td>
<td>.4468</td>
</tr>
</tbody>
</table>
more so than any other segment of what was commonly known as business education.

Factor VI. Office Management, Supervisory

Of the six competencies clustered under the heading Factor VI, Office Management, Supervisory, two items, 3 and 12, at first seem similar in skill application. Most of the competencies indicate work of a nature that requires more than entry-level skill. Rejection of Items 3, 12, and 44 may be due to the unclear wording of the competency or the fact that these tasks are not normally a part of the Accounting cluster. Table 7, page 51, illustrates the variety of competencies for Factor VI.

The three retained competencies (10, 19, 43) indicate work of a nature acquired only with experience in a supervisory capacity. This would indicate a hierarchical level beyond entry into an occupational area.

Results of Mean Score Ranks

Each of the 75 competencies was ranked from 1-75. The ranking was based upon the mean score for each of the competencies as noted by all respondents. Mean scores by cluster respondents can be found in Tables 2 through 7. Mean ranking, as determined by the combined mean scores of all respondents, is shown in Table 8, page 52.
### Table 7. Results of Significance Testing for Factor VI, Office Management, Supervisory.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Competency</th>
<th>Means (by cluster)</th>
<th>Computed &quot;F&quot;</th>
<th>Hypothesis* Decision</th>
<th>L. S. D. Result</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>S</td>
<td>C</td>
<td>A</td>
<td>rejection</td>
</tr>
<tr>
<td>3</td>
<td>Performs various duplicating operations on fluid, stencil, and offset</td>
<td>4.08</td>
<td>4.00</td>
<td>3.44</td>
<td>4.0533</td>
</tr>
<tr>
<td></td>
<td>duplicating machines and photocopiers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Dictates communication</td>
<td>3.28</td>
<td>3.08</td>
<td>3.12</td>
<td>.1911</td>
</tr>
<tr>
<td>12</td>
<td>Prepare stencil, offset, and spirit masters and demonstrate efficient</td>
<td>4.12</td>
<td>3.92</td>
<td>3.36</td>
<td>4.9673</td>
</tr>
<tr>
<td></td>
<td>use on duplicating machines</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Supervise clerical workers</td>
<td>3.80</td>
<td>3.40</td>
<td>3.56</td>
<td>.8276</td>
</tr>
<tr>
<td>43</td>
<td>Prepare operating budget for department</td>
<td>3.20</td>
<td>2.64</td>
<td>3.20</td>
<td>1.7143</td>
</tr>
<tr>
<td>44</td>
<td>Proficiency in office methods of duplicating</td>
<td>4.08</td>
<td>3.80</td>
<td>3.40</td>
<td>3.1932</td>
</tr>
<tr>
<td></td>
<td>written material</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Spurious Competency</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>Define and effectively use business terminology</td>
<td>4.08</td>
<td>3.72</td>
<td>3.92</td>
<td>1.2020</td>
</tr>
</tbody>
</table>
Table 8. Competency item means, standard deviation, and mean ranking.

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Mean Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.95</td>
<td>.733</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>2.17</td>
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The first 11 ranked competency items are clustered in Factor I, Basic Business Operations. They represent the attitudes and aptitudes characteristic of successful office employees, regardless of the degree of specialization or level of achievement. Many of these competencies are not measurable in terms of timed production--words per minute, strokes per minute, etc. The majority of competency items listed in Factor I could be indicative of the basic business foundation for advanced preparation in a specialized field.

Summary

The $F$ statistic was used to conduct a one-way classification analysis of variance test on the 75 competency items taken from the objectives of the Oregon clusters in business education. The 27 items rejected were tested to determine whether or not a significant difference existed among the mean scores of the competencies. Testing the mean scores indicate that business teachers do not need the same specific occupational competencies. Indications point out the need for a basic business understanding common to all teachers of business subjects with additional preparation and/or training in areas of specialization of an unknown duration.

The R-mode factor analysis analyzed the competencies according to perceptions by the three groups of respondents. Titles of the factors indicate occupational competency tests as follows:
1. Basic business operations to include simple calculating machines, proofreading, telephone manners, personal conduct in business office, reference material usage, accuracy in recordkeeping, bank transactions, and filing procedures.

2. Accounting-bookkeeping functions to be in two parts; (a) those recordkeeping activities which clerical employees routinely handle (cash transactions, bank transactions, business arithmetic calculations), (b) those performed in the role of the accounting occupations (double-entry system, payroll, special journals, working papers at end of cycle, auditing, subsidiary ledgers, and form processing).

3. Managerial accounting in which data are presented for use by executives in making decisions. These competencies are not normally a part of the secondary school clusters but rather performance objectives for accountants where advanced study is required.

4. Secretarial competencies beyond those found in basic business operations (1) would include taking dictation, transcribing mailable copy, preparation of copy through appropriate reproduction methods, and preparation of documents peculiar to specialized secretarial positions.

5. Data processing activities to include a basic understanding of input and retrieval of data. A part of specialized clerical skills could be keypunching, sorting, and the inputting of data.
6. Occupational competencies necessary to effectively perform in this category require work experience of sustained duration where progression to supervisory positions would involve budget preparation, dictating communication, supervision of clerical staff, and effective use of specialized business terminology. The preparation of duplicated copy in this category (rejected Items 3 and 12) are competencies which supervisory personnel must understand for deciding how the information is to be disseminated but not actually performing it.
CHAPTER V

CONCLUSIONS AND IMPLICATIONS

The Problem Restated

The central problem of this study was to identify the common competency elements deemed necessary for entry-level vocational certification and to develop these elements into groups that would serve as a basis for use in an occupational competency test. Questions to be answered from responses to the questionnaire of competencies taken from the objectives as stated in the business education clusters used by secondary schools in the state of Oregon were:

1. Can the essential competencies common to all business teachers be identified?
2. Are there any significant differences in the basic competencies needed by business teachers in the three cluster areas?
3. Can inservice business education teachers identify those competencies essential to the successful teaching of business subjects?
4. Can suitable groupings of competencies be established as a resource bank for the development of performance-based competency tests?
Procedures

The construction of the occupational competence questionnaire was accomplished through the utilization of the cluster guides developed by the Oregon State Department of Education and the expertise of business educators in secondary and post-secondary institutions within the state of Oregon. These business educators formed the jury of experts who evaluated the instrument prior to it being submitted to vocationally certified business education teachers in the secondary schools in the state of Oregon for completion.

A mail survey questionnaire with prepaid postage, containing the 75 competencies with a five-point Likert scale, was used for the study. The dependent variable in the study was the score judgmentally assigned to each competency to denote the level of proficiency they perceived as necessary for entry-level certification.

The population for the study utilized the vocationally certified business education teachers currently teaching the major curriculum content of the three business education clusters. The sample for the study consisted of 25 teachers in each of the three clusters—Accounting, Clerical, and Steno-Secretarial.

The information from each return was checked and coded. Data processing cards were punched with the respondent's number, cluster
identification, years of teaching experience, and individual responses to the competency items.

**Analysis of the Data**

The one-way classification analysis of variance measured the differences among the respondents categorized by cluster specialization and was used to test the hypothesis that there was no significant difference in competencies needed by business teachers in occupational specialization. A test of Least Significant Difference was used to determine where specific differences existed between means of the specific clusters which were rejected in the analysis of variance tests.

The R-technique was used to further analyze the data. This technique ordered the respondents according to the 75 competence items included in the study. This analysis provided the measure used to cluster items in common groupings. Competencies with factor loadings of $+.50$ or higher were recorded as being clustered within a factor. Those falling below that level were listed as spurious competencies—those having less than $+.50$ placed in that cluster in which it had the highest loading.

All 75 items were ranked according to mean scores. The ten highest ranked factors were found to be clustered in Factor I, Basic Business Operations. Factor names were arbitrarily assigned to each cluster after the data were analyzed. These titles were assumed to be
indicative of the nature of the competencies which loaded under that factor.

Conclusions

A number of conclusions may be drawn from the findings of the research on common occupational competencies of vocationally certified business education teachers in secondary schools in the state of Oregon. The considered judgment regarding the level of proficiency needed by teachers in the cluster specialization for each of the 75 competencies is one approach that may be used to establish competency exams used in certifying teachers to give instruction in one of the three clusters. The following specific conclusions are an analysis of this study:

1. Testing the mean scores indicates that business teachers do not need the same specific occupational competencies. Indications point out the need for a basic business understanding common to all teachers of business subjects with additional preparation and/or training in areas of specialization of an unknown duration.

2. Factor analysis, using the R-technique, was considered the most valuable procedure in analyzing the data used in this study. A seven-factor solution generated factor loadings that accounted for 66 of the 75 competencies, six of which overlapped a
previous factor. The greatest difference in rating the competencies was between those teaching in the Accounting cluster and those teaching in the Steno-Secretarial cluster for Factor III. This would indicate a difference in training and/or education necessary to adequately perform in a highly specialized occupation.

3. The ten highest ranked occupational competencies did not fall within the special skill-development categories normally associated with business education. Indications are that these occupational competencies are developed in a multitude of curriculums and may transcend the complete educational and occupational setting.

4. The occupational competencies grouped under Factor V, Data Processing, Machine Operation, ranked lowest in mean scores of any of the groupings. Specific involvement of business and office education teachers into the field of data processing and specialized activities is a direct result of the preservice training received by vocationally certified business education teachers.
Implications

As a result of the increasing number of occupational clusters being identified and implemented in the secondary schools in the state of Oregon, and presumably in the nation, preservice and inservice programs for the preparation of business educators take on a new perspective. Results of the requirements of prospective teachers of business subjects and the curricular changes needed to meet the demands of business and industry heretofore have been a slow evolving process. Significant implications for teacher education, both preservice and inservice in nature, may be drawn as follows:

1. Teacher educators should consider the reasoned judgment of practicing professionals in business regarding the occupational competencies needed by those aspiring to be occupationally competent and reasonably successful in the world of work.

2. Differences among the three groups of business education specialists tend to point out further refined skill development in that specialty. Work experience in an unrelated area is not a satisfactory prerequisite for blanket certification of vocational educators. Training and/or experience must be directly related to the occupations or family of occupations for which instruction is given.
3. As Ruggles (58) so aptly described the occupational competency structure in 1924, the same general clerical competencies are needed by all performers. Specialization requires that additional knowledge and skill built upon a basic business foundation have breadth and depth.

4. Teacher education programs need the additional diverse specialization which will allow the prospective teacher to explore alternatives. A business teacher cannot teach in an area of specialization without the expertise necessary to perform in that occupation. To become "professional" in the business world can be related to the secretary reaching the pinnacle as a certified professional secretary (CPS), the accountant achieving the status of certified professional accountant (CPA), and the emerging specialists in the field of data processing such as the analyst.

5. Unless a recent graduate of educational endeavor, little in the way of instruction or training was required of the prospective business teacher regarding the use of computers in business.
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education. Department of Education, University of Michigan. 26 p. (Educational Resources Information Center no. ED 042 893) (Microfiche)

APPENDIX A

Business Education Jury of Experts

Mrs. Dollie Ammons  
Clackamas Community College  
19600 South Molalla Avenue  
Oregon City, Oregon 97045

Mrs. Julie Crossley  
Adams High School  
5700 NE 39 Avenue  
Portland, Oregon 97211

Mr. Wendell Heintzman  
West Albany High School  
1130 West Queen Avenue  
Albany, Oregon 97321

Ms. Shirley Hewitt  
Portland Community College  
12000 SW 49 Avenue  
Portland, Oregon 97219

Mr. Charles Pazlar  
David Douglas High School  
1500 SE 130 Avenue  
Portland, Oregon 97233

Miss Genevieve Piluso  
Lebanon Union High School  
60 Main Street  
Lebanon, Oregon 97355

Dr. Irene Place  
Portland State University  
Post Office Box 751  
Portland, Oregon 97207

Mr. Leslie Robertson  
Clatsop Community College  
16 and Jerome Streets  
Astoria, Oregon 97103

Dr. Lorrine B. Skaff  
Southern Oregon College  
1250 Siskiyou Boulevard  
Ashland, Oregon 97520

Mrs. Mary Ann Sloan  
Toledo High School  
Route No. 1  
Toledo, Oregon 97391

Ms. Connie Tjernberg  
South Salem High School  
1910 Church Street, SE  
Salem, Oregon 97302

Ms. Nancy Warner  
Dallas High School  
500 East Ash Street  
Dallas, Oregon 97338
The enclosed questionnaire items represent occupation competencies required of teachers of business subjects in the clusters presently offered in the state of Oregon secondary schools.

Will you please read the competencies and decide whether or not they are representative of those needed by business education teachers engaged in teaching specialty courses in the Accounting, Clerical, and Steno-Secretarial clusters approved by the Oregon Board of Education?

A check mark can be used to signify acceptance of the competency. Changes in wording or alterations can be made by writing directly on the questionnaire. Additions or deletions may be made to the items submitted for your consideration.

Secondary teachers of business subjects will be asked to determine the importance of these items relative to occupational competence from which performance objectives will be developed for certification purposes.
Dear Respondent:

Much has been written and discussed among state certification agencies relative to the occupational competency of teachers of vocational subjects. As a result of my interest in business education, I have found a multiple purpose in pursuing this topic.

You can be of help to your profession, the state of Oregon, and me by completing and returning the enclosed questionnaire at your earliest convenience. Both Dr. Fred Winger, Oregon State University, and Mr. Jess Kauffman, Oregon Board of Education, are supportive of research in determining what occupational competencies are necessary to become vocationally certified to teach in reimbursable programs.

From your respected opinions, a series of performance objectives will be developed that will permit certifying agencies to do a better job of credentialing business teachers in the secondary schools of our state.

Your name, work experience, and cluster specialty are requested for administration purposes of this research and will not be divulged. The impact and results of this study will be made available through the Oregon Business Education Association and the Oregon Board of Education.

Sincerely,

Redacted for privacy

Enclosure: Questionnaire

After rating the competencies, staple or tape the questionnaire and place in the mail.
APPENDIX D

OCCUPATIONAL COMPETENCE QUESTIONNAIRE

NAME ___________________________ SCHOOL ___________________________

MAJOR CLUSTER CONCENTRATION ______ Bookkeeping-Accounting
                                             ______ Clerical
                                             ______ Steno-Secretarial

YEARS TEACHING EXPERIENCE _______ YEARS WORK EXPERIENCE _______

This questionnaire contains competencies normally associated with successful teaching in the business education department. Your assistance in providing information on which occupational competence can be based will be of significant interest in credentialing vocational teachers in the area of business education.

As a vocationally competent instructor, you are asked to rate the following competencies in relationship to the significance or importance you place on the items listed below from your experience in the field. For each item circle the number which you believe most nearly corresponds to your perception of the competency associated with the three clusters developed by the Oregon Board of Education.

1 None -- unnecessary, not related to performance on the job
2 Low -- minimal competence--limited or very infrequent use in job duties
3 Average -- routine tasks performed with reasonable accuracy and proficiency for job entry
4 Proficient -- able to perform with high degree of skill and efficiency
5 Absolutely Essential -- total competence and maximum proficiency needed to progress to decision-making position

Sample:

1. Define and effectively use business terminology  1 2 3 4 5
OCCUPATIONAL COMPETENCIES OF VOCATIONAL BUSINESS TEACHERS

1. Demonstrates proficiency in business arithmetic calculations

2. Issues reports and opinions relating to financial statements to stockholders

3. Perform various duplicating operations on fluid, stencil, and offset duplicating machines and photo copiers

4. Identify basic calculating machines and know uses in clerical activities

5. Keep accurate records of all petty cash and check expenditures

6. Can list the advantages and disadvantages of the major types of business enterprises

7. Record and transcribe minutes of meetings

8. Make minor repairs and adjustments on common office machines

9. Demonstrate personality traits in keeping with required conduct in the business office

10. Dictates communication

11. Arrange travel schedules and reservations using various resource materials

12. Prepare stencil, offset, and spirit masters and demonstrate efficient use of duplicating machines

13. Type from straight copy at a speed commensurate with job-entry requirements

14. Analyzes depreciation, amortization, and depletion schedules

15. Locate and attach appropriate file to correspondence to be answered by employer

16. Detect and correct spelling and typographical errors

17. Use dictionaries and reference manuals quickly and efficiently

18. Prepares working papers at end of bookkeeping cycle
19. Supervise clerical workers  
20. Explain common methods of determining and recording wages, salaries, and taxes  
21. Answer telephone clearly and in a professional manner  
22. Confirms accounts receivable and accounts payable balances  
23. Prepare and type wills, deeds, and contracts  
24. Knowledge of business law as it pertains to simple formation and execution of contracts  
25. Record all transactions neatly and accurately  
26. Prepares reports for government  
27. Take dictation on stenotype machine (machine shorthand)  
28. Apply proper procedures for handling incoming and outgoing mail  
29. Construct simple graphs and charts used in business  
30. Balances books and compiles reports for management  
31. Keep personnel records of employees  
32. Prepare cards for unit record processing (key punch)  
33. Define and effectively use business terminology  
34. Inspects cancelled checks and reconciles bank statements  
35. Operates Vari-typewriter in a proficient manner  
36. Compute payroll deductions and make required reports  
37. Operate the ten-key adding machine with speed and accuracy using the touch system  
38. Prepares state and federal payroll reports and summaries  
39. Key punch information on cards or tape for data processing input  
40. Demonstrate proficient use of source material for information  
41. Perform simple to complex mathematical problems on the semi-and fully-automatic rotary and listing calculators  
42. Computes and records payroll data
43. Prepare operating budget for department
44. Proficiency in office methods of duplicating written material
45. Prepare deposits, write checks, and reconcile bank statements
46. Records transactions in special journals
47. Explain the functions of negotiable instruments and list those in common use today
48. Demonstrate acceptable office behavior in relation to coworkers, superiors, and visitors
49. Ability to complete the bookkeeping cycle with reports
50. Produce mailable business letters, envelopes, and common business documents
51. Demonstrate ability to proofread printed copy with accuracy
52. Ability to make out manufacturing statements
53. Compare basic systems of filing in use today with advantages and disadvantages of each
54. Apply demonstrated ability to accurately handle cash transactions
55. Prepares schedules of depreciation of various kinds
56. Knowledge of and processing of forms—purchase order, sale invoice, credit memorandum
57. Apply knowledge of basic bookkeeping including simple entries in double entry system
58. Arrange and organize office for maximum efficiency in the flow of work
59. Devises forms and manuals from data supplied by management
60. Correct errors effectively on all forms and copies
61. Use clear, distinct speech in basic telephone techniques and courtesies
62. Demonstrate proficiency in locating material in files
63. Demonstrate proper use and care of typewriter
64. Demonstrate the basic procedures for effective filing
65. Organizes and explains classification of accounts
66. Proficient in operation of transcribing and dictating equipment
67. Correctly spell the more commonly used business English words
68. Compose mailable letters and other communications as required
69. Examines accounts and records for accuracy
70. Choose appropriate media for communicating written messages
71. Ability to explain from kits provided by Internal Revenue Service federal income tax returns
72. Demonstrate proficiency in transcribing notes accurately and efficiently
73. Accurately perform calculations of percentages, averages, measurements, and simple money statements
74. Uses data processing input and output
75. Demonstrate proficiency in taking shorthand notes manually
## APPENDIX E

### TABLE FOR ANALYSIS OF VARIANCE FOR A ONE-WAY CLASSIFICATION

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<thead>
<tr>
<th>Source of variation</th>
<th>Sum of squares</th>
<th>d. f.</th>
<th>Mean square</th>
<th>Variance ratio</th>
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<td>Between samples</td>
<td>$SSC = r \sum_{j} (x_{j} - \bar{x})$</td>
<td>$d. f. = c - 1$</td>
<td>$MSC = \frac{SSC}{c - 1}$</td>
<td>$F = \frac{MSC}{MSE}$</td>
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<tr>
<td>Within samples</td>
<td>$SSE = \sum_{i,j} (x_{ij} - x_{j})$</td>
<td>$d. f. = c(r - 1)$</td>
<td>$MSE = \frac{SSE}{c(r - 1)}$</td>
<td></td>
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<tr>
<td>Total</td>
<td>$SST = \sum_{i,j} (x_{ij} - \bar{x})$</td>
<td>$d. f. = (c - 1) - c(r - 1)$</td>
<td>$...$</td>
<td>$...$</td>
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APPENDIX F

Coding of Data Cards

Data for each of the 75 respondents were coded on one card as follows:

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<th>Column</th>
<th>Code</th>
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<td>1-2</td>
<td>01 to 25. Represents one of the 25 teachers in the cluster.</td>
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<tr>
<td>3</td>
<td>S, C, or A. Represents the business education cluster in which the respondent has primary responsibility.</td>
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<tr>
<td>4-5</td>
<td>00 to 40. Represents the number of years of teaching experience.</td>
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<td>6-80</td>
<td>Data. Response values of 1, 2, 3, 4, or 5 which were assigned to the 75 competencies.</td>
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</table>
APPENDIX G

R-Mode Control Cards

8JOB, 92308, XXXX, MARTIN D. SINGKOFER

8TIME = 1000

8MFBLKS = 500

8COPY, Ø = 80

*GO

DATA, F=LAR1, C=1, I=75

*FACTOR, NUMFAC=7, OUTPUT

*CORR, RMODE, DIAG=MAX, PRINTOUT=BOTH, OUTPUT

*ROTATE, VARI, NONSTD, OUTPUT

*TITLE, OCCOMP BUS ED

*LABEL, VO1$VO2$VO3$VO4$ . . . . . V18$

V19$ . . . . . . . . . . . . . . . . . . . . . . V38$

V39$ . . . . . . . . . . . . . . . . . . . . . . V58$

V59$ . . . . . . . . . . . . . . . . . . . . . . V74$

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(DATA CARDS INSERTED HERE!)
## APPENDIX H

### Factor Loading of Competency Items

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*Overlapping of factors. These items appear in both tables in which the loading criterion of ±.50 is exceeded.
APPENDIX I

ACCOUNTING CURRICULUM

The Accounting Occupations Cluster has been structured to provide an avenue of progress for the student whose interests lie in the accounting field. The curriculum plan is intended for those students who foresee employment in accounting occupations after completion of high school. To this extent it provides entry-level training opportunities or a basis for further specialized education.

Persons who possess the basic knowledge and skills that qualify them for a number of jobs adapt more easily to changes in career goals and technological developments. Therefore, this curriculum plan is oriented toward preparation of students for a cluster of related accounting jobs.

A general accounting cluster program should encompass:

Occupation exploratory experiences in grades seven through ten. They are of prime importance to students in developing career goals and plans. Courses in general business, business English, mathematics, and science will provide valuable experiences leading to the general accounting cluster in grades 11 and 12.

Occupational guidance. Helping students to learn more about themselves and to choose an occupational field which will offer them both challenge and self-fulfillment is the heart of a successful occupational education program.

Special areas of learning experiences. These special areas of learning experiences should be allocated in a segment of time approximating two periods per day or ten hours per week. This amount of time is minimal for the study and experience required to achieve curriculum objectives. Suggested descriptions of special areas of learning experiences can be found on page 29. The educational specifications for special areas of learning experiences begin on page 34. They are divided into the following categories but are not presented in any required sequence:

1. Accounting
2. Accounting Cluster Specialty Lab
3. Business Machines
4. Business Mathematics
5. Introduction to Data Processing
6. Typewriting
7. Business Communications
Related skills and knowledge. The student should be able to choose supplemental learning experiences which will sharpen his particular interests and talents and help him attain his occupational objectives. A list of recommended related skills and knowledge is suggested on page 31.

Cooperative work experience programs. These should be approved by the Division of Instructional Services and Career Education but could make up skill and knowledge elective. A State Department of Education publication, Cooperative Work Experience, A Coordinator's Manual, will supply details on establishing such a program.

A suggested accounting cluster curriculum plan is presented on page 26.

The Oregon Board of Education recognizes that each local school district will encounter unique problems in scheduling when undertaking the implementation of the secondary occupational cluster program. The suggested time blocks are governed by the State Plan for Vocational Education. However, the plan is flexible and can be adapted to the needs of the local school district.
BASIC OBJECTIVES

The following statement of objectives was compiled for the general accounting curriculum. While these objectives are considered basic to this particular cluster, it is anticipated that supplementary objectives will be developed by teachers for various age and grade levels.

The broad objective of this curriculum is to meet educational needs of diverse groups of students by preparing them, according to their interest and ability, so that they may (1) become productively employed in an entry-level job in the accounting or business field upon graduation from high school, or (2) continue their training in post high school education.

With the proper planning and implementation, an accounting cluster program should train students to:

1. Apply generally accepted accounting principles to the keeping of a full set of accounting books.
2. Prepare financial statements and other reports for proprietorships, partnerships, and corporations.
3. Use data processing input and output for the purpose of reporting and analyzing financial statements.
4. Skillfully operate computative business machines.
5. Establish effective accounting systems and controls.
6. Perform proper auditing techniques in special accounting situations.
7. Apply proper communication techniques involving business situations.
8. Solve special business problems by applying skill in using proper business mathematics methods.
9. Apply proper business knowledge for solving specific problems relating to a business.
10. Type reports and communications.
## CURRICULUM PATTERN

### Grade Levels

<table>
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<tr>
<th></th>
<th>1-6</th>
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<th>9</th>
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<td>Interaction with Environment</td>
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<tr>
<td>On streets and highways</td>
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<td>Consumer of Goods and Services</td>
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</tr>
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</table>

### PERSONAL DEVELOPMENT

Reading ability, listening ability, analyzing ability, speaking ability, writing ability, computing ability

Scientific and Technical

Healthy Body and Mind

Ability to continue learning

### CAREER DEVELOPMENT

Includes programs in the elementary grades, where students will:
- Develop awareness of the many occupational careers available.
- Develop awareness of self in relation to an occupational career role.
- Develop foundations for wholesome attitudes toward work and society.
- Develop attitudes of respect and appreciation toward workers in all fields.
- Make tentative choices of career clusters to explore in greater depth during mid-school years.

Programs in the mid-school years usually grades 6-10, where students will:
- Explore key occupational areas and assess personal interests and abilities.
- Become familiar with occupational classifications and clusters.
- Develop awareness of relevant factors to be considered in decision-making.
- Gain experience in meaningful decision-making.
- Develop tentative occupational plans and arrive at a tentative career choice.

Career cluster programs at grades 11-12, where students will:
- Acquire occupational skills and knowledge for entry-level employment and/or advanced occupational training.
- Relate a majority of high school experiences to generalized career goals.
- Develop acceptable job attitudes.
- Be involved in cooperative work experience and have opportunities to join vocational youth organizations.

**NOTE:** These competencies are designed to comply with the requirements for high school graduation as adopted by the Oregon Board of Education September 22, 1972.
SUGGESTED
SPECIAL AREAS OF LEARNING EXPERIENCES—
DESCRIPTIONS

These descriptions of special areas of learning experiences serve as guidelines for the classroom teacher. Because of the individual problems of each local school district, no specific attempts at arranging a curricular scope and sequence have been made. Each district is encouraged to organize the content of this guide in a manner that fits its individual needs and requirements.

The content of this guide has been developed, reviewed, and validated in cooperation with the Accounting Cluster Advisory Committee. Specifications of knowledge and skills required for entry-level employment can be changed only after the review and approval of the advisory committee. This does not affect the flexibility of the organization, scope, or sequence of the content. This responsibility is left entirely to the local district and the classroom teacher.

ACCOUNTING
This special area of learning experience introduces the complete fundamental accounting cycle, special systems for recording, accounting transactions, and special accounting topics related to all types of business, including an emphasis on merchandising business operations. A major aim of this guide is the preparation of the student for job entry positions. As such, it provides practical applications of accounting principles through the incorporations of practice sets involving the simulation of actual journals, ledgers, and business transactions. Special topics involving payroll, interest, depreciation, accruals and deferrals are also covered.

ACCOUNTING CLUSTER SPECIALTY LAB
The major emphasis of this special area of learning experience is to prepare students for entry-level accounting positions after graduation. The content is focused on accounting and business theory stressing the "why" of accounting with coverage of such topics as corporations, partnerships, departments, and cost accounting. Through the use of special problems, the student can apply his accounting knowledge to merchandising and manufacturing-type businesses. Within the scope of this program, more time will permit individualized learning opportunities and enable the student to engage in more related accounting and business management problems.

BUSINESS COMMUNICATIONS
The content of this unit has direct application to business functions. Logical arrangement of letters and other communications used in business is the core of this subject, and letter writing makes up the major activity. Letters pertain to job application, inquiry, sales, goodwill, and credit and collection. A comprehensive review of grammar, spelling, punctuation, and business vocabulary is included, as well as attention to improvement of penmanship.
BUSINESS MACHINES
Office machines are a major component of modern-day business, and this skill and knowledge area provides training on the machines most used in business. The ten-key adding-listing machine and the printing and electronic calculators are the most popular types of machines found in the office. Skill in their operation will help the student find a job.

BUSINESS MATHEMATICS
Business mathematics is an essential element of accounting occupations. Mathematics dealing with fractions, decimals, cash records, markups and markdowns, payroll calculations, aliquot parts, percentages, and simple, compound and effective interest rates are covered. Business mathematics is offered as an alternative to algebra for those students entering a business occupational cluster program.

INTRODUCTION TO DATA PROCESSING
This special area of skill and knowledge stresses the development of an understanding of the history, organization, structure, terminology, material, and uses of data processing equipment. It introduces the student to modern methods of sorting, filing, and retrieving information through the use of electronic and automatic equipment.

TYPEWRITING
The typewriter is an important “tool” of the accounting career worker. Proficiency in producing manuscripts, letters, invoices, and other business documents is stressed so that accounting personnel will have the flexibility and competency needed in the business office. Students will learn about the care and maintenance of the typewriter, will be introduced to the various common makes of typewriters, and will receive training on both manual and electric models.

COOPERATIVE WORK EXPERIENCE
Whenever possible, a cooperative work experience program should be added to the accounting program as a reinforcement to the total learning experience. On-the-job training provides the student with real work situations.
RELATED SKILLS AND KNOWLEDGE

The following list of related skills and knowledge is recommended for students entering or enrolled in the accounting cluster curriculum.

High school business education programs provide many of the opportunities mentioned in the following descriptions, although titles of related skills and knowledge areas do not remain constant. In most cases the existing program, with only slight modification of content, will provide the experiences suggested in the following descriptions. The student must consider all alternatives and discuss them with his parents, school counselors, and business teachers. This will help him choose an educational program with realistic career-oriented experiences and objectives.

BUSINESS ECONOMICS
This component introduces the student to important aspects of consumer economics as well as problems of business and industry. Problems of organization, finance, and management are studied, as well as matters of national concern, such as gross national product, supply and demand, earnings, savings, investment, and the role of government in economic affairs.

BUSINESS PRINCIPLES AND MANAGEMENT
This program is designed to provide students the necessary background to enter positions in the business community. Emphasis is placed on learning the structure of business, working with business problems, and developing an understanding of the role of business in our society.

BUSINESS LAW
Emphasis in this component is placed on the application of law and ethics to business practices. Various forms of contracts and negotiable instruments are studied, along with sales, bailments, partnership, incorporation, insurance, real estate, and other related matters. The study of business law includes analysis of cases and court decisions. In some instances, students visit actual court hearings and trials.

GENERAL BUSINESS
This component serves as an introduction to those wishing to enter the business field. It examines insurance, banking, credit and collections investment, communication systems, transportation, production, distribution, the role of the worker, government in business, the free enterprise system, business law, and business ethics. In some cases, the program is divided into two general areas—exploratory business (which examines careers in the “real world of work”) and consumer education, which investigates many of the topics listed above.

SPEECH
Speech is the most common of all methods of transacting business. Therefore, a speech unit should be incorporated into the accounting cluster program. This related skill and knowledge area is geared toward improving the student's speech and developing his poise and confidence. It includes practice in the preparation and delivery of various types of speeches, and prepares students to face a job interview.
The clerical cluster has been structured to provide an avenue of progress for the student whose interests lie in the clerical field. The curriculum plan is intended for those students who foresee employment in the clerical occupations after completion of high school, and to this extent provides entry-level training opportunities.

Persons who possess the basic knowledge and skills that qualify them for a number of jobs adapt more easily to changes in career goals and technological developments. Therefore, this curriculum plan is oriented toward preparation of students for a cluster of related clerical jobs.

A general clerical program should encompass:

Occupational exploratory experiences in grades seven through ten. They are of prime importance to students in developing career goals and plans. Courses in general business, business English, mathematics, and science will provide valuable experiences leading to the general clerical cluster in grades 11 and 12.

Occupational guidance. Helping students to learn more about themselves and to choose an occupational field which will offer them both challenge and self-fulfillment is the heart of a successful occupational education program.

Occupational specialty courses in grades 11 and 12. These courses should be allocated a segment of time approximating two periods per day or ten hours per week. This amount of time is minimal for the study and experience required to achieve curriculum objectives. Suggested course descriptions can be found on page 19.

The educational specifications for building occupational specialty courses begin on page 25. They are divided into the following categories but are not presented in any required sequence:

1. Typewriting
2. Office machines
3. Recordkeeping
4. Office procedures
5. Communications
Allied supporting elective courses in grades 11 and 12. The student should be able to choose supplemental learning experiences which will sharpen his particular interests and talents and help him attain his occupational objectives. A list of recommended allied supporting elective courses is suggested on page 21.

Cooperative work experience programs. These should be approved by the Division of Community Colleges and Career Education but could make up a portion of the required time blocks available to students as an allied supporting elective. A State Department of Education publication, *Cooperative Work Experience, A Coordinator’s Manual*, will supply details on establishing such a program.

A suggested clerical cluster curriculum plan is presented on page 16.

*The Oregon Board of Education recognizes that each local school district will encounter unique problems in scheduling when undertaking the implementation of the secondary occupational cluster program. The suggested time blocks are governed by the State Plan for Vocational Education, and within those limitations are flexible and can be adapted to the needs of the local school district.*
OBJECTIVES

The following statement of objectives was compiled for the general clerical curriculum. The philosophical concepts upon which these objectives are based may be found in the Guide to Structure and Articulation of Occupational Education Programs. While these objectives are considered basic to this particular cluster, it is anticipated that supplementary objectives will be developed by teachers for various age and grade levels.

The broad objective of this curriculum is to meet educational needs of diverse groups of students by preparing them, according to their interest and ability, so that they may (1) become productively employed in an entry-level job in the clerical field upon graduation from high school, or (2) continue their training in post high school education if desired.

SPECIFIC OBJECTIVES

With the proper planning and implementation, a program in the general clerical cluster field should train students to:

1. Make and keep accurate log of customer appointments.
2. Type and prepare correspondence according to current standards and practices.
3. Type forms and reports accurately and efficiently.
4. Handle mail properly, whether incoming or outgoing.
5. File and retrieve correspondence and other business papers and documents.
6. Handle and keep accurate records of money transactions.
7. Observe proper telephone etiquette.

1Guide to Articulation of Occupational Education Programs, Oregon Board of Education, Division of Community Colleges and Career Education, Salem, Oregon 97310. 1968. (A revised edition will be published in the spring of 1971. Copies of the 1968 edition should be available in school district or Intermediate Education District offices.)
## SUGGESTED CURRICULUM PLAN

### General Clerical

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<th>Grade 10</th>
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<td>Data Processing</td>
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<tr>
<td>VI</td>
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<td>General Business or Electives</td>
<td>General Business or Electives</td>
<td>Elective</td>
<td>Electives or Work Experience</td>
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**NOTE:** Electives may be chosen from other supporting or related business courses or from general curriculum offerings. Specialty Lab is centered around problems and projects found in the business office.
SUGGESTED
OCCUPATIONAL SPECIALTY COURSE
DESCRIPTIONS

These course descriptions serve as guidelines for the classroom teacher. Because of the individual problems of each local school district, no specific attempts at arranging a curricular scope and sequence have been made. Each district is encouraged to organize the content of this guide in a manner that fits its individual needs and requirements.

The content of this guide has been developed, reviewed, and validated in cooperation with the Clerical Cluster Advisory Committee. Specifications of knowledge and skills required for entry-level employment can be changed only after the review and approval of the advisory committee. This does not affect the flexibility of the organization, scope, or sequence of the content. This responsibility is left entirely to the local district and the classroom teacher.

Business Communications

One Hour per Day: Two Semesters

The content of this unit has direct application to business functions. Logical arrangement of letters and other communications used in business is the core of this subject and letter writing makes up the major portion of activity. Letters pertain to job application, inquiry, sales, goodwill, and credit and collection. A comprehensive review of grammar, spelling, punctuation, and business vocabulary is included, with attention given to improvement of penmanship.

Office Procedures and Practice Laboratory

Two-Hour block: One Year

This is the major portion of the clerical cluster program. It is conducted on a two-hour block time schedule and offered in the twelfth grade. Familiarization with practical office routine is the central aim of this program. Subject content and learning activities include handling mail, telephone practices, reception, filing, and other activities found in the modern office. It includes training in the use of various office and business machines, especially transcribing machines, and concentrates on problems and projects which will give the student the most important phases of training needed for job entry into the clerical field. Units on job applications, interviews, personnel relations, and how to keep a job are emphasized. A simulated office is used for part of the training. Attitude on the job, proper dress, and personality development also are important aspects of this program.

Typewriting

One Hour per Day: One Year

The typewriter is the main tool of the clerical worker and its use should be mastered. Proficiency in producing manuscripts, letters, invoices, and other business papers is stressed. Students will learn about the care and maintenance of the typewriter, will be introduced to the various common makes of typewriters, and will get some training on both manual and electric models.
OCCUPATIONAL SPECIALTY COURSES (Continued)

Recordkeeping One or Two Semesters

Those entering the field of office occupations should consider taking a course in recordkeeping instead of the bookkeeping course generally offered in most high schools. Recordkeeping is not to be considered a second-rate bookkeeping course. Rather, students learn to keep office records and deal with the daily routine of office functions. Accurate records are essential in today's modern office, and a thorough knowledge of such matters as handling cash receipts, cash payments, accounts receivable, credit accounts, collections, petty cash fund, and banking procedures are extremely important.

Business Machines One or Two Semesters

Office machines are a major component of modern-day business, and this course provides training on the machines most used in business. The ten-key adding-listing machine and the calculator are the two most popular types of machines found in the office, and a certain amount of skill in their operation will aid the student in finding a job. A two-semester course includes training in the operation of duplicating, bookkeeping, and transcribing machines.

Introduction to Data Processing One Semester

This is a course for developing an understanding of the history, organization, structure, terminology, material, and uses of data processing equipment. Information is presented in the simplest terms, and participants need not have a strong background in mathematics. Simple applications of flow-charting, card punching, machine operation, and programming are presented without the need for hands-on equipment. Bookkeeping and record keeping provide excellent problems which can be incorporated into this course.

Business Mathematics One Semester

Business mathematics is an essential element of office occupations. Mathematics dealing with fractions, decimals, cash records, markups and markdowns, payroll calculations, aliquot parts, percentages, and simple interest are thoroughly covered. Business mathematics is offered in lieu of algebra for those students entering one of the business clusters.
ALLIED SUPPORTING COURSES

The following list of allied supporting courses is recommended for students entering or enrolled in the general clerical cluster curriculum.

High school business education programs provide many of the opportunities mentioned in the following course descriptions, although course titles do not remain constant. Courses generally found in the high school curriculum such as basic economics, speech, technical writing, etc., also are supporting courses and should be considered when choosing electives. In most cases the existing program, with only slight modification of content, will provide the experiences suggested in the following course descriptions. The student must consider all courses available and discuss various alternatives with his parents, school counselors, and business teachers. This will help him choose an educational program with realistic career-oriented experiences and objectives.

**Briefhand**

One Semester

This is a system of abbreviated longhand for note-taking purposes. It is easy to learn and can be used for writing telephone messages, instructions, and other communications. It is not intended to take the place of symbol shorthand, but speeds up to 80 wpm can be attained by many students. Students learn the rules for briefhand, the high-frequency abbreviations, phonetic abbreviations, and word beginnings and endings used in dictation practice.

**Business Law**

One or Two Semesters

Emphasis is placed on the application of legal and ethical aspects of law and practice to business situations. Various forms of contracts and negotiable instruments are presented, along with sales, bailments, partnerships, corporations, insurance, real estate, and other legal matters pertaining to business and business operations. The study of business law is made extremely interesting and meaningful by the analysis of cases and court decisions. Students visit actual court hearings and trials.

**General Business**

One or Two Semesters

An introduction to the many and varied aspects of American business—basic knowledge for those wishing to enter the business field. The course examines insurance, banking, credit and collections, investment, communication systems, transportation, production, distribution, role of the worker, government in business, the enterprise system, legal implications, and business ethics.

**Public Speaking**

One Semester

Speech is the most common of all methods of transacting business. At least a unit of this training should be incorporated into the clerical program. The course is geared toward improving speech and developing poise and
confidence. It includes practice in the preparation and delivery of various
types of speeches and sales talks, and prepares students to face a job interview
and to meet any new situation.

**Business Economics**

One Semester

Introduces the student to the important aspects of consumer economics as
well as problems of business and industry. Problems of organization, finance,
operation and management are studied, as well as matters of national
concern, such as gross national product, supply and demand, earnings,
savings, investment, and the role of government in economic affairs.
APPENDIX K

CLUSTER CURRICULUM

The guide which follows is designed to provide qualified teachers with "educational specifications" for specific knowledge and skills that will qualify students for entry-level employment. The teacher himself will have to organize the specifications to assure his students the training that will fit their individual needs and desires.

A steno-secretarial program should encompass:

Occupational exploratory experiences in grades seven through ten. They are of prime importance to students in developing career goals and plans. Courses in general business, English, mathematics, and social studies will provide valuable experiences leading to the steno-secretarial cluster in grades 11 and 12.

Occupational guidance. Helping students to learn more about themselves and to choose an occupational field which will offer them both challenge and self-fulfillment is the heart of a successful occupational education program.

Occupational specialty courses in grades 11 and 12. These courses should be allocated a segment of time approximating two periods per day or ten hours per week. This amount of time is minimal for the study and experience required to achieve the curriculum objectives. Suggested course descriptions are on page 16.

The educational specifications for building occupational specialty courses are divided into the following areas but are not presented in any required sequence:

1. Business communications

2. Filing
3. Office procedures

4. Dictation and transcriptions

5. Typewriting

6. Shorthand

Allied supporting elective courses in grades 11 and 12. The student should be able to choose supplemental learning experiences which will sharpen his particular interests and talents and help him attain his occupational objectives. Suggested allied supporting course descriptions are on page 18.

Cooperative work experience programs. These should be approved by the Division of Community Colleges and Career Education and could make up a portion of the required time blocks available to students as an allied supporting elective. A state Department of Education publication entitled Work Experience Manual will supply details on establishing such a program.

A suggested steno-secretarial cluster curriculum plan is presented on page 14.

The Oregon Board of Education recognizes that each local school district will encounter unique problems in scheduling when undertaking the implementation of the secondary occupational cluster program. The suggested time blocks are governed by the State Plan for Vocational Education, and within those limitations are flexible and can be adapted to the needs of the local school district.
OBJECTIVES

The following objectives were identified for the steno-secretarial cluster curriculum. The philosophical concepts upon which these objectives are based may be found in a companion publication, Guide to Structure and Articulation of Occupational Education Programs.*

While these objectives are considered basic to this particular cluster, it is anticipated that supplementary objectives will be developed by teachers for various age and grade levels. The broad objectives of this curriculum guide are to meet educational needs of diverse groups of students by preparing them, according to their interests and abilities, to: (1) become productively employed in an entry-level job in the stenographic field upon graduation from high school; or (2) continue their training and education beyond grade 12.

Specific Objectives

Specifically, the steno-secretarial cluster curriculum guide is designed to provide opportunities for students to acquire entry-level skills in the use and operation of office equipment with which they will work. The student, upon completion of this program, should be able to:

1. Take dictation accurately at an acceptable speed.
2. Transcribe dictation quickly and efficiently.
3. Take and transcribe conference dictation accurately.
4. Type various materials without direct personal guidance.
5. Type various masters and stencils and prepare multiple copies.
7. Use files accurately and efficiently.

Concomitant Objectives

The student should be able to:

1. Type correspondence that is completely free from typographical and spelling errors.

*Guide to Structure and Articulation of Occupational Education Programs (Grades 7 through 12 and post-high school), State Department of Education, Division of Community Colleges and Vocational Education, Salem, Oregon 97310.
2. Use proper and acceptable English both in speech and writing and construct good sentences with correct punctuation.

3. Command an adequate vocabulary, especially in relation to office procedures and business functions.

4. Practice discretion and tact.

5. Understand that loyalty is one of the strongest assets an office worker can have to assure a pleasant and continued working relationship.

6. Demonstrate grooming practices that are acceptable to employers both when seeking employment and while on the job.

7. Behave with courtesy and friendliness.
SUGGESTED COURSE DESCRIPTIONS
OCCUPATIONAL SPECIALTY COURSES

These course descriptions serve as guidelines for the classroom teacher. Because of the individual problems of each local school district, no specific attempts at arranging a curricular scope and sequence have been made. Each district is encouraged to organize the content of this guide in a manner that fits its individual needs and requirements.

The content of this guide has been developed, reviewed, and validated in cooperation with the State Lay Steno-Secretarial Advisory Committee. Specifications of knowledge and skills required for entry-level employment can be changed only after the review and approval of this committee. This does not affect the flexibility of the organization, scope, or sequence of the content. This responsibility is left entirely to the local district and the classroom teacher.

Business Communications

Logical arrangement and composition of letters and other communications used in business is the core of this course, including letters of application, inquiry, sales, goodwill, and credit and collection. A comprehensive review of grammar, spelling, punctuation, and business vocabulary is included, with attention to improvement of penmanship.

Note: Business Communications could well be a full year course replacing the required academic English IV for seniors majoring in either office or distributive education. The content of such a course would provide the student with a strong background of English for further education as well as prepare him for employment following high school if he so desires.

Office Procedures and Practices

Familiarizing students with practical office routine is the central aim of this unit of study. Subject content and learning activities include the handling of mail, telephone practices, receptioning, filing, and processing of letters and other communications, keeping of financial and other records, job applications, and proper conduct during interviews. Emphasis will be given to development of acceptable attitudes, proper dress, and personality development. The course includes instruction in the use of various machines such as dictaphones, adding and calculating machines, and duplicators.

Shorthand

Beginning Shorthand introduces theory, abbreviated words, phrasing, and dictation. Students develop dictation speeds from 60 words per minute and up, with an emphasis on accuracy, and learn to use correct outlines, grammar, spelling, punctuation, and style. Some typewriting is correlated with beginning shorthand.
Dictation speed from 80 words per minute up and transcription speed from 25 words per minute should be developed. In advanced shorthand emphasis is on developing greater speed and accuracy in dictation and transcription. Various styles of dictation and dictating machines are studied. Some conference dictations (mock conferences, student council, assemblies, city council proceedings, etc.) are arranged for practice. Emphasis is placed on correct outlines, grammar, spelling, punctuation, and typewriting.

Typewriting

The typewriter is the main tool of the secretary and should be used with the greatest of efficiency. Not only should typing as a skill be mastered, but knowledge of the care and maintenance of the typewriter should also be acquired. Proficiency in producing manuscripts, letters, invoices, and other business papers is stressed. The student is introduced to the various common makes of typewriters and is given training on both manual and electric models.
SUGGESTED COURSE DESCRIPTIONS
ALLIED SUPPORTING COURSES

The following list of allied supporting courses is recommended to students entering or enrolled in the steno-secretarial cluster curriculum.

High school business education programs provide many of the opportunities mentioned in the following course descriptions, although course titles do not remain constant. Courses generally found in the high school curriculum, such as basic economics, speech, technical writing, etc., also are supporting courses and should be considered by students when choosing electives. In most cases the existing program, with only slight modification of content, will provide the experiences suggested in the following course descriptions. The student must consider all courses available and discuss various alternatives with his parents, school counselors, and advisers. This will help him choose an educational program with realistic career-oriented experiences and objectives.

Business Law

This course emphasizes the application of legal and ethical practices to various forms of contracts and negotiable instruments, sales, bailments, partnerships, corporations, insurance, real estate, and other business activities. The study of business law is made extremely interesting and meaningful through the analysis of cases and court decisions and visits to actual court hearings and trials.

Business Machines

Office machines are an essential part of business operations and this course gives students a thorough introduction to the most commonly used machines.

Business Mathematics

A knowledge of business mathematics is essential for office occupations. In almost any business situation, one is confronted with the necessity of making calculations, simple and complex, which require basic knowledge of simple arithmetic. Students learn to work with fractions, decimals, cash records, markups and markdowns, payroll calculations, alequot parts, percentages, and simple interest.

General Business

General Business introduces students to the many and varied aspects of American business and industry. The course is basic for those wishing to enter the business field. It covers banking services, credit and collections, insurance, communication systems, transportation, production and distribution, the role of the worker, government and business, the enterprise system, legal implications and business ethics, and "the consumer."
Public Speaking

Vocal communication is the most common of all methods of transacting daily business, and too much emphasis cannot be placed on the art of communication in training for office occupations careers. The course is geared toward improving speech and developing poise and confidence. It includes practice in the preparation and delivery of various types of speeches, sales talks, introduction of speakers, etc. Students taking this course should be better prepared to face a job interview and to meet and talk to others with poise and confidence.

Record Keeping

Those entering the field of office occupations should consider taking a course in record keeping rather than the bookkeeping course offered in most high schools. Record Keeping is not a simplified bookkeeping course; accurate records are essential in today’s modern office and a thorough knowledge of how to handle cash receipts, cash payments, accounts receivable, credit accounts, collections, petty cash funds, and banking is extremely important.
# A Suggested Curriculum Plan

**Steno-Secretarial**

<table>
<thead>
<tr>
<th>PERIOD</th>
<th>7TH AND 8TH GRADES</th>
<th>9TH GRADE</th>
<th>10TH GRADE</th>
<th>11TH GRADE</th>
<th>12TH GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>Social Studies</td>
<td>Communication Skills</td>
<td>Communication Skills</td>
<td>Communication Skills</td>
<td>Communication Skills</td>
</tr>
<tr>
<td>II.</td>
<td>Health and Physical Education</td>
<td>Health and Physical Education</td>
<td>Health and Physical Education</td>
<td>Physical Education</td>
<td>Modern Problems</td>
</tr>
<tr>
<td>III.</td>
<td>Mathematics</td>
<td>Mathematics</td>
<td>Elective</td>
<td>U.S. History</td>
<td>Elective</td>
</tr>
<tr>
<td>IV.</td>
<td>Science</td>
<td>Science</td>
<td>Science</td>
<td>Shorthand</td>
<td>Steno-Secretarial</td>
</tr>
<tr>
<td>V.</td>
<td>Language Arts</td>
<td>General Business</td>
<td>Typewriting</td>
<td>Record Keeping or Bookkeeping</td>
<td>Specialty Lab</td>
</tr>
<tr>
<td>VI.</td>
<td>Electives</td>
<td>Electives</td>
<td>Electives</td>
<td>Business Machines Office Practice</td>
<td>Cooperative Work Experience</td>
</tr>
</tbody>
</table>

- **Occupational Specialty Courses**
- **Curriculum Electives**
- **Required Courses**

*NOTE: See page 18 for a complete listing of Allied Supporting Courses*