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A RESEARCH MODEL FOR IDENTIFICATION OF TASK AND KNOWLEDGE CLUSTERS ASSOCIATED WITH PERFORMANCE OF MAJOR TYPES OF OFFICE EMPLOYEES' WORK. FINAL REPORT NUMBER 5.

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AN EDUCATIONAL RESEARCH MODEL WAS DEVELOPED TO IDENTIFY AND CORRELATE MAJOR TASKS OF OFFICE WORKERS AND MAJOR REQUIRED KNOWLEDGES FOR PERFORMANCE OF THOSE TASKS. THE PURPOSE WAS TO SHOW ESSENTIAL COMBINATIONS OF TASK-KNOWLEDGE CLUSTERS FOR USE BY CURRICULUM PLANNERS IN DEVELOPING APPROPRIATE INSTRUCTIONAL PROGRAMS AND MATERIALS FOR OFFICE EDUCATION. THE TOTAL OFFICE LABOR FORCE IN THE STATE OF WASHINGTON WAS IDENTIFIED, USING CENSUS DATA AND OTHER DATA PROVIDED BY STATE AGENCIES. WITH THE ASSISTANCE OF UNIVERSITY STATISTICIANS AND ELECTRONIC COMPUTERS, A SAMPLE WAS SELECTED IN PROPORTION TO THE NUMBER OF OFFICE WORKERS IN FIVE OFFICE-SIZE CATEGORIES WITHIN 15 MAJOR STANDARD INDUSTRIAL CLASSIFICATION GROUPINGS, INCLUDING AGRICULTURE, MANUFACTURING, TRANSPORTATION, SERVICES, EDUCATION, AND GOVERNMENT. USING THE SELECTED SAMPLE (286 OFFICE WORKERS AND SUPERVISORS) AND ALSO A JURY OF EXPERTS, A QUESTIONNAIRE COMPOSED OF 600 OFFICE TASKS WAS VALIDATED. IN ADDITION TO PILOT TESTING THE QUESTIONNAIRE, A STRUCTURED PROCEDURE WAS DEVELOPED FOR ITS USE IN OTHER PROJECTS TO IDENTIFY MAJOR TASKS AND KNOWLEDGES OF A REPRESENTATIVE SAMPLE OF OFFICE WORKERS WITHIN ANY GEOGRAPHICAL AREA. A PARADIGM CONSTRUCTED FOR SUCH TASK-KNOWLEDGE INVESTIGATIONS WAS PRESENTED IN THE FORM OF FIVE FLOW CHARTS. THIS VOLUME REPRESENTS PART 5 OF A 13-PART FINAL REPORT ON THE VOCATIONAL-TECHNICAL EDUCATION RESEARCH AND DEVELOPMENT PROJECT OF WASHINGTON STATE UNIVERSITY. RELATED VOLUMES ARE ED 010 652 THROUGH ED 010 664. (JH)

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U. S. DEPARTMENT OF
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Final Report Number 5**

**Edward A. Perkins, Jr.
F. Ross Byrd**

December 1966

The research reported herein was performed pursuant to a contract with the Office of Education, U. S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

Washington State University

Pullman, Washington

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To Mrs. Marilyn May goes the credit for the typing of this manuscript and the numerous rough-draft copies which preceded the final report. And, finally, we wish to express our appreciation to the 27 business firms, government agencies, and their personnel for courtesies and kindnesses extended while collecting data.

Washington State University

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INTRODUCTION

Task and Knowledge Clusters Concepts

One major purpose of Project ERD-257-65 is to identify clusters of knowledge and competencies most likely to maximize the career-long occupational opportunity, competence, and choice of non-college bound youth in an evolving technological society.

This research is rooted in the philosophic premise that occupational freedom involves both informed choice of alternatives and competence to work effectively. The economy needs constantly large numbers of workers possessing new capabilities. But youth can evaluate only those occupational choices that they perceive. They are free to perform only the kinds of work for which they acquire competence.

Choice, and acquisition of competence, may be needlessly impaired by limited outlooks and motivations. For those reasons, studies of occupational perceptions, aspirations, and attitudes constitute other dimensions of this project.

The objective of our clusters research is to obtain facts about what major types of tasks are actually performed in occupations most likely to provide employment opportunity for substantial percentages of non-college bound youth and to identify major types of knowledges most likely to prepare them for such work. On the basis of Bureau of Labor Statistics projections, the following occupational areas were selected for study: office, general merchandise retailing, building trades, electronics, food services, and child care.

To obtain task and knowledge data for clustering, the staff, in consultation with employers, employees, and vocational teachers, prepared questionnaire check lists designed to identify specific major tasks actually performed by workers in each of the occupational areas listed above.

Questionnaires were designed to obtain from employees data on age, sex, major types of tasks presently performed, length of time on present job, and other types of work done in the past five years.

Those questionnaires are being administered to representative samples of workers in each occupational area.

Results will provide data on (a) combinations of major tasks categories of workers presently perform, (b) combinations of

major tasks performed on entry jobs, (c) combinations of tasks generally performed by workers with various degrees of experience, and (d) some data on 5-year combinations of worker experience.

Knowledges associated with performance of each task will be identified by juries of employees, supervisors, and vocational teachers.

From analysis of the above data, the staff will obtain definitions of both tasks and knowledges involved in entry jobs and in positions into which workers can move as they get experience. The project staff will identify (a) some clusters of knowledge useful within each occupational area and (b) some clusters that are commonly useful in two or more occupational categories.

Facts about currently useful tasks and knowledge are being supplemented by studies of ways they will be affected by equipment, processes, and materials now being developed by leading-edge industries.

Purpose and Objective

The purpose of this phase of the project is to develop a research model for obtaining a representative sample of knowledges associated with the performance of major types of office employees' work.¹

In the field of office education, there is urgent need for a comprehensive and up-to-date study to identify (a) the major tasks actually performed by a representative sample of office workers; (b) the major knowledges required to perform those tasks; and (c) the essential combinations of tasks and knowledge clusters, which will assist office education curriculum planners in developing instructional programs and materials that will maximize career-long occupational opportunity, competence, and choice in an evolving technological society. One can hypothesize that reasons why such essential research has not previously been conducted are: (a) difficulties associated with identifying office populations, (b) problems associated with selecting a representative sample of office workers, and (c) the difficulties

¹The investigators' definition of office work follows the definitions of titles and occupational classifications for clerical and kindred workers as set forth in Volumes I and II of the Dictionary of Occupational Titles, 3d edition, U. S. Government Printing Office, Washington, D. C., 1965.

associated with development of a valid questionnaire or interview instrument. Before any fully useful assessment of office work can be made, therefore, it is imperative that a model for identifying clusters of tasks actually performed by various groups of workers be developed. That is a basic first step toward identification of clusters of knowledge associated with tasks performed by a representative sample of office workers within any given geographical area--local, state, or national. That is the purpose of this study.

Background and Rationale

The growing contribution of office employees to the nation's economy is indicated by the rising number of office workers in the labor force. In 1962 about 10 million workers--7 million women and 3 million men--were employed in office occupations. (10) Department of Labor forecasts indicate that office employment may reach 14 million in 1975, or about 14 office workers for every 10 employed in 1962. (11) Today, office work is the second largest employment classification in the United States. More than 16 per cent of all employed persons are involved in office work. (2) Office work is the largest employment field for women. One out of three employed women works in the office. (2)

The expanding office force is directly related to the expanding activities of business corporations, financial organizations, wholesale and retail establishments, government organizations, and many other types of enterprises. Office automation and other technological advances will undoubtedly leave their imprint on the composition of the office force. Some studies have suggested some retardation in the long-term growth of office employment, particularly part-time office work. However, the experience of some automated offices suggests the possibility of expanding employment in new areas of office activity to handle information which had previously been uneconomical to acquire. (9)

Office employees now average 12.5 years of school completed, or a little more than a high school education. (14) Eleven per cent of the boys and 58 per cent of the girls who do not attend college enter office work; together they comprise about 40 per cent of all high school graduates. (2) In 1960 over 9 million students were enrolled in high schools (grades 9-12); there were over 4 million (44 per cent) individual high school subject enrollments in various business subjects. (7) Since some high school students are enrolled in two or more business subjects at the same time, the percentage of all students taking business subjects is somewhat less than 44 per cent. Whatever the actual count, office occupation education programs are an integral part of the curriculum in the nation's high schools. These programs received their initial impetus from the perfection of the typewriter in the early 1870's.

Need for This Study

Office education programs in the high schools are concerned with two major aspects of education: "(a) The knowledge, attitudes, and nonvocational skills needed by all persons to be effective in their personal economics and in their understanding of our economic system; (b) the vocational knowledge and skills needed for initial employment and for advancement in a business career." (6) It follows that one of the chief objectives of office education is to provide pupils with those knowledges and skills that will insure vocational competency in the changing world of office work. Despite this obvious implication of that fact, observation demonstrates that most office education programs in the nation's high schools have developed and continued to operate without up-to-date information about the major types of office tasks actually performed and, even more important, without facts about the essential knowledges an office worker needs to competently carry out each major task. In other words, today's office education curriculum has developed through a process that might accurately be labeled "armchair analysis."

It is imperative, therefore, that up-to-date facts regarding major tasks performed in the complex world of office work and knowledges and skills needed to do such work be identified and placed in the hands of educators responsible for improving curriculum, instructional materials, counseling, and vocational teacher education.

Review of Related Research

No research has been located which specifically relates to development of a task-knowledge research prototype designed to encompass the entire spectrum of office work and to gather data directly from office employees.

Research and nonresearch literature relating to separate aspects of the problem is extensive. These reports, however, usually deal with a very narrow range of office work involving the manipulation of task data performed by one office occupational title. In general, the findings of many of these studies are called into question by the failure to ascertain information directly from office workers. Most studies are based on opinions of supervisors and executives. Other serious limitations are failure to identify essential knowledges associated with frequently performed office tasks and failure to use appropriate sampling techniques.

Charters and Whitley (1) compiled a frequency ranking of 871 duties performed by 125 secretaries. Although the secretaries interviewed did not constitute a representative sample, the list of secretarial duties proved to be helpful in the development of

the task-identification instrument for the present investigation.

Sampling procedures reported by Cook and Maliche (4) and by Cook and Brown (3) were helpful in the development of procedures for identifying the population and for sampling utilized in the model devised by this project. Appropriate sample procedures were also reported in an article by West. (12)

METHOD

The methods used in the development of this task-knowledge research prototype will be described in six parts--the methods used to: (a) identify a large-scale office population, (b) select a representative sample of office workers, (c) develop a dependable data-gathering instrument, (d) distribute the data-gathering instrument, (e) analyze data, and (f) determine knowledges associated with tasks.

Identification of Population

The dependability of a large-scale survey or questionnaire study requires the selection of a representative sample drawn from a well-defined population. The procedures used in this investigation to identify such a population are summarized below:

PHASE I - Definition of Population

The population in this study was the total office labor force employed in business firms representing the Standard Industrial Classification (SIC) groupings² in the state of Washington during the month of September, 1965. Population data could not be obtained directly from any single source. Several sources were considered, but all were incomplete in one or more ways. It was decided finally to estimate the population by using Federal Census data and other data provided by state agencies.

PHASE II - Extrapolation of Data from Federal Census

Office workers are widely dispersed. They work in all industries, although their number varies widely from one industry to another. By extrapolating information

²SIC's used in this study: Agriculture; Mining; Construction; Manufacturing; Transportation; Communication and Utilities; Wholesale Trade; Retail Trade; Finance, Insurance, and Real Estate; Services; Government; Education; Other.

from the Federal Census report for the state of Washington (8), the respective percentage of total office workers by SIC groupings for one year, 1960, was computed. This information is shown in the chart in Appendix A.

Also, since the proportion of office workers to total workers varies considerable with different industries, it was necessary to determine the total number of employed persons and the percentage of the total represented by office workers in each SIC grouping. Data for the year 1960 was used. The results are shown in Appendix B.

PHASE III - Determination of Sizes of Offices

Another population variable, office size, was considered. Specialized office jobs in machine operation and in data processing, for example, are more likely to be found in large-size offices than in small-size ones. It was deemed necessary to establish office-size categories. The following categories were arbitrarily established: 1-4 office workers constitutes a small-size office; 5-49, medium; 50-99, large; 100-299, X large; and 300+, XX large.

At this point, two important basic assumptions regarding office work have been made: (a) that employees in the various SIC groups perform some dissimilar office tasks or duties and (b) that office employees in the various sizes of offices perform some dissimilar tasks.

PHASE IV - Determination of Employment and Employer Units

Access to a statewide listing of employer units and the number of workers employed by each in September, 1965, was obtained. This included all SIC groups except Government, Education, and railroads (a subdivision of the Transportation classification).

The next step was to develop a matrix describing the size of employer unit for each SIC corresponding with sizes (number of employees) of offices. This was accomplished by dividing each predetermined office-size figure (see PHASE III) by the constant percentage of office workers included in each SIC (see Appendix B). This matrix is shown in Appendix C.

The necessary computer program was written; and the results of the initial printout, the number of employer units and the persons employed by each listed by (a) size of firm (b) within each SIC, are shown in Appendix D.

PHASE V - Estimation of Governmental and Railroad Sectors

By using data from various state agencies, it was possible to determine the Government, Education, and

Railroad employment in Washington State for September, 1965. These figures are shown in the table in Appendix E.

With the exception of the local education and local non-education population, the specific employer units and the total number of persons employed by each in the Federal, State education, State non-education, and railroad categories were identified. Due to inadequately detailed data, however, estimates of the number of office workers in the size-of-office cells were used. Estimates were based on the number of units in a given category that employed a given number of persons.

PHASE VI- Identification of Office Population

Combining the data shown in Appendices D and E and applying the percentage of office workers in each industrial classification (see Appendix B), a matrix was constructed showing the number of office workers in Washington State by industrial classifications and by office sizes in September, 1965. The office population matrix is shown in Appendix F.

Development of Sample of Office Workers

A representative sample is a prerequisite for meaningful findings. The sample developed is basically a stratified random sample; i.e., the office workers were selected in proportion to the number of office employees in each cell within each industrial classification. The sample was developed in the following manner.

PHASE I - Determination of Average Number of Office Employees Per Employer Unit

The average number of office employees per employer unit was determined by dividing the total number of office workers in each cell by the number of employer units in that cell. These data were computed for all SIC's except Federal, Local Non-Education, and Local Education, where data were insufficient. These calculations are shown in Appendix G.

PHASE II - Determination of Number of Employee Contacts

It is necessary to have 384 completed questionnaires for a confidence level of 95 per cent based on an office population of approximately 165,000. (5) Recognizing that a 100 per cent return would be improbable, it was decided that at least 800 questionnaires should be distributed. A matrix was developed distributing 800 questionnaires to the cells within each SIC on a proportional basis. The matrix appears in Appendix H.

PHASE III - Determination of Percentages of Sample Within Companies

One basic consideration was the percentages of the sample within each company. It was deemed desirable to have as broadly based a sample as possible. It was ascertained that approximately 350 employer contacts would be economically feasible. Finally, it was determined that the sample of office employees within individual employer units would be as follows:

Percentage of Sample in Each Employer Unit by Size of Office

<u>Small</u>	<u>Medium</u>	<u>Large</u>	<u>X Large</u>	<u>XX Large</u>
100%	20%	10%	5%	All units sampled from in proportion

In the XX Large size office, it was necessary to identify each employer unit in the State in order to avoid a bias. For example, Company A might have 5,000 office employees and Company B might have 800. It is necessary to insure that each of the 5,800 office workers has an equal opportunity of being selected at random.

PHASE IV - Identification of Sample--Private Enterprise Sector

By applying the "Percentage of Sample in Each Employer Unit" to the average number of office workers in each cell (Appendix G), the approximate number of questionnaires to be distributed to an individual employer unit was determined. Based on the number of questionnaires needed in each cell (Appendix H), the number of employer units needed in each cell was determined. This computation is shown in Appendix I.

The needed employer units were selected at random on a computer from the statewide listing of employer units.

PHASE V - Identification of Sample--Government and Railroad Sectors

In the State Education, State Non-Education, and Railroad categories, there was sufficient data to determine the average number of office workers per employer unit (as explained previously). The "Percentage of Sample in Each Employer Unit" was applied to the average number of office workers to arrive at the number of employer contacts necessary in relation to the number of questionnaires needed in each cell. In the XX Large classification, however, two employer units were

selected at random and sampled from in proportion. Again, an attempt was made to broaden the base of the sample. There were not enough questionnaires needed to sample from all employer units in those categories. In the Federal category, the employer units and the total number employed by each were identified; but the determination of an average number of office workers within the size-of-office cells was estimated. The number of employer units selected in these categories is shown in Appendix I.

In the Local Non-Education and Local Education categories, the only data available were in "total" form. It was not possible to identify individual employer units. Three counties in the State were selected at random on the following basis:

Largest counties in State according to population:

Spokane County selected at random

Middle-sized counties: Yakima County selected at random

Small-sized counties: Garfield County selected at random

The total number of workers employed in these counties was determined and the constant percentage then applied to develop the office population in each county. The total number of workers employed by the cities, Spokane, Yakima, and Pomeroy, was determined and so was the office population for the cities. A matrix was developed, and 98 questionnaires were distributed on a proportional basis in the counties and cities named.

The Local Education category was handled in the same manner. Twenty-seven questionnaires were distributed in this category.

Development of Data-Gathering Instrument

G. M. Whipple, former secretary of the National Society for the Study of Education, has formulated the following criteria for an adequate questionnaire:

- a. It should be within the comprehension of those who are to answer it.
- b. It should demand a minimal amount of writing.
- c. It should be directed primarily to matters of ascertainable fact and less often to matters of opinion.

- d. It should elicit unequivocal replies, especially if these are later to be subjected to statistical treatment.
- e. It should deal with matters that are worth investigating and that will seem to the recipients to be worth investigating.
- f. Although demanding only brief replies, it should stimulate supplementary communications from the recipients. (13)

PHASE I - Conceptualization of Task-Identification Instrument

It was hypothesized that ascertainable facts regarding office tasks or duties could be obtained directly from a representative sample of office employees. It was recognized that many office employees are not aware of the knowledges necessary to successfully perform office tasks; moreover, the performance of a task on their part does not necessarily mean that the task has been performed correctly. Based on those premises, a highly specific task instrument designed to ascertain the specific tasks performed by office workers was developed.

PHASE II - Initial Field Testing of Instrument

Project staff members distributed 240 questionnaires to office workers employed at St. Regis Paper Company and Washington State University. There was a return of 65 per cent. Approximately a month later, 10 per cent of the respondents were interviewed directly by project staff personnel and were asked to respond in an oral situation to the same questionnaire. They were encouraged to make comments or criticisms regarding tasks listed, especially if they felt the wording was confusing or if the task was superfluous. They were also asked to comment on any task(s) they performed but that was(were) not listed in the questionnaire.

An item-by-item comparison of the respondents' original responses and interview responses was made. On the basis of that analysis, the arrangement of the questionnaire was revised and some items were reworded. Some additional items were inserted, and some were combined or deleted. Care was used to use wording congruent with office workers' frames of reference.

PHASE III - Evaluation by Panel of Experts

The revised instrument was submitted to a panel of office education experts for their critical analysis.

These persons were public and private educational institutions employees, a personnel manager, two Certified Professional Secretaries, and a clerical supervisor of the local employment security office. They were asked specifically to consider the following as bases for analysis of the instrument:

- a. Wording of each item
- b. Elimination of superfluous items and/or addition of items that might have been omitted
- c. Rearrangement of items into a more logical sequence of operations
- d. General format, total organization, and appearance of the instrument

Through an evaluation of the panel's suggestions, many refinements were made. Items were added and others deleted. Some changes in the sequence of items were made to provide a more logical progression. As a result of re-evaluation of data desired in the "General Information" section, other changes were made.

The questionnaire was also presented to two seminar groups of business educators. In most cases, their evaluations paralleled those of the panel's.

PHASE IV - Final Field Testing of Instrument

In this phase, 44 instruments were distributed to banking office personnel and additional Washington State University office workers. The return was 100 per cent. Fourteen per cent of the respondents were interviewed, using the procedure described in PHASE II. Minor revisions were made where applicable.

PHASE V - Preparation of Final Instrument

Two additional experts in the areas of bookkeeping and accounting were consulted, and additional minor revisions were effected.

The task-identification instrument, in its final form, appears in Appendix J.

Method Used in Distribution of Data-Gathering Instrument

The number of questionnaires to be distributed and the geographic area covered requires that more than one individual be involved in the distribution process. By developing a

structured process for the distribution, it was believed that (a) there would be more consistency in the explanation of the research objectives and (b) that a higher percentage of return could be obtained. The phases discussed below were developed during the pilot testing of the instrument. They were based on an analysis of related literature and the judgment of the investigators. The distribution of questionnaires in the Governmental and Education sectors has been completed by the project staff. Returns are now coming in. The process for distribution to other sectors has been refined as a result of that experience.

PHASE I - Identification of Interviewer-Distributors

When the employer units were selected, their location was plotted on a state map. The number of persons necessary to act as interviewer-distributors was determined. These persons will be community college and high school business educators. An orientation and training meeting will be held prior to the distribution of questionnaires to explain the objectives of the research, the random selection of office employees within firms, and the reporting system.

PHASE II - Contact with Employer Units

Contact schedules will be arranged to minimize the amount of time and travel between contacts. Approximately one week before the contact the letter of introduction, shown in Appendix K, will be sent to the firm. A day or two before contacts, interviewers will telephone owners or personnel managers for appointments.

Personal contact will be made with the owner, personnel manager, or the person who has general responsibility over employees. The objectives, random selection of his firm, and needs of business education will be explained and cooperation will be solicited. A detailed instruction sheet for the interviewer-distributors is shown in Appendix L. Interviewers, with assistance of managers, will make random selection of the needed number of employees within firms. The detailed instructions are shown in Appendix M. The supervisor of each employee selected at random will also be contacted and the objectives briefly explained.

PHASE III - Contact with Person Receiving Questionnaire

No coercive pressure will be applied to persons whose names are selected at random. The interviewers will be trained to solicit voluntary cooperation.

PHASE IV - Method Used in Return of Questionnaires

Return envelopes will accompany the questionnaires to encourage and facilitate returns. In firms or organizations receiving several questionnaires, however, some one person will be requested to collect and return them all (see Appendix L). Forms will also be provided for detailed information about the firm and person(s) receiving questionnaires. The form is shown in Appendix N.

Analysis of Data

The volume of data anticipated will necessitate the use of high-speed computers for analysis. Some cross classification is planned in addition to frequency counts of responses to each item. It will be useful to compare the tasks performed by clerical workers with those performed by stenographers, bookkeepers, and others. An analysis will be made of the pattern of tasks performed by office workers in various SIC groupings by office-size categories.

Identification of Knowledges Associated with Performance of Tasks

In the development of the task-identification instrument, the assumption was made that many workers cannot verbalize the knowledges they use in performing tasks. This study is concerned with all office employees. The knowledges associated with workers' abilities to progress vertically in a firm are as important as knowledges needed to perform entry-level jobs.

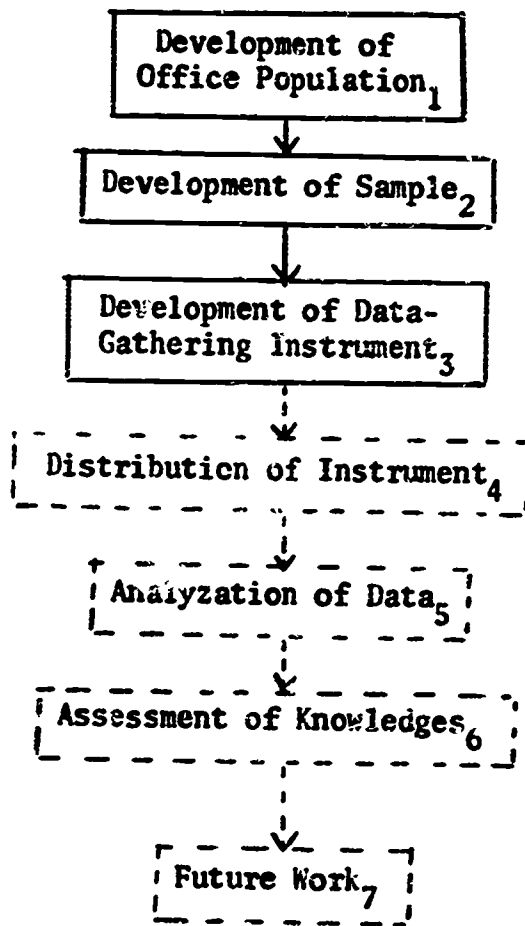
It is assumed that for purposes of this study a panel of experts can most accurately identify knowledges associated with performance of specific tasks. The panel will be composed of (a) business education teachers, (b) business education textbook writers, (c) business education directors or coordinators, (d) Certified Professional Secretaries, (e) personnel managers, (f) university personnel, and (g) other identified expert office workers. The panel will consist of 15 to 20 people.

RESULTS

A sampling and data-gathering model that will enable investigators to identify major types of office tasks and associated knowledges performed by a representative sample of office workers within any geographical area is shown on the following page. Flow charts indicating the development of specific phases of this prototype are also shown on succeeding pages.

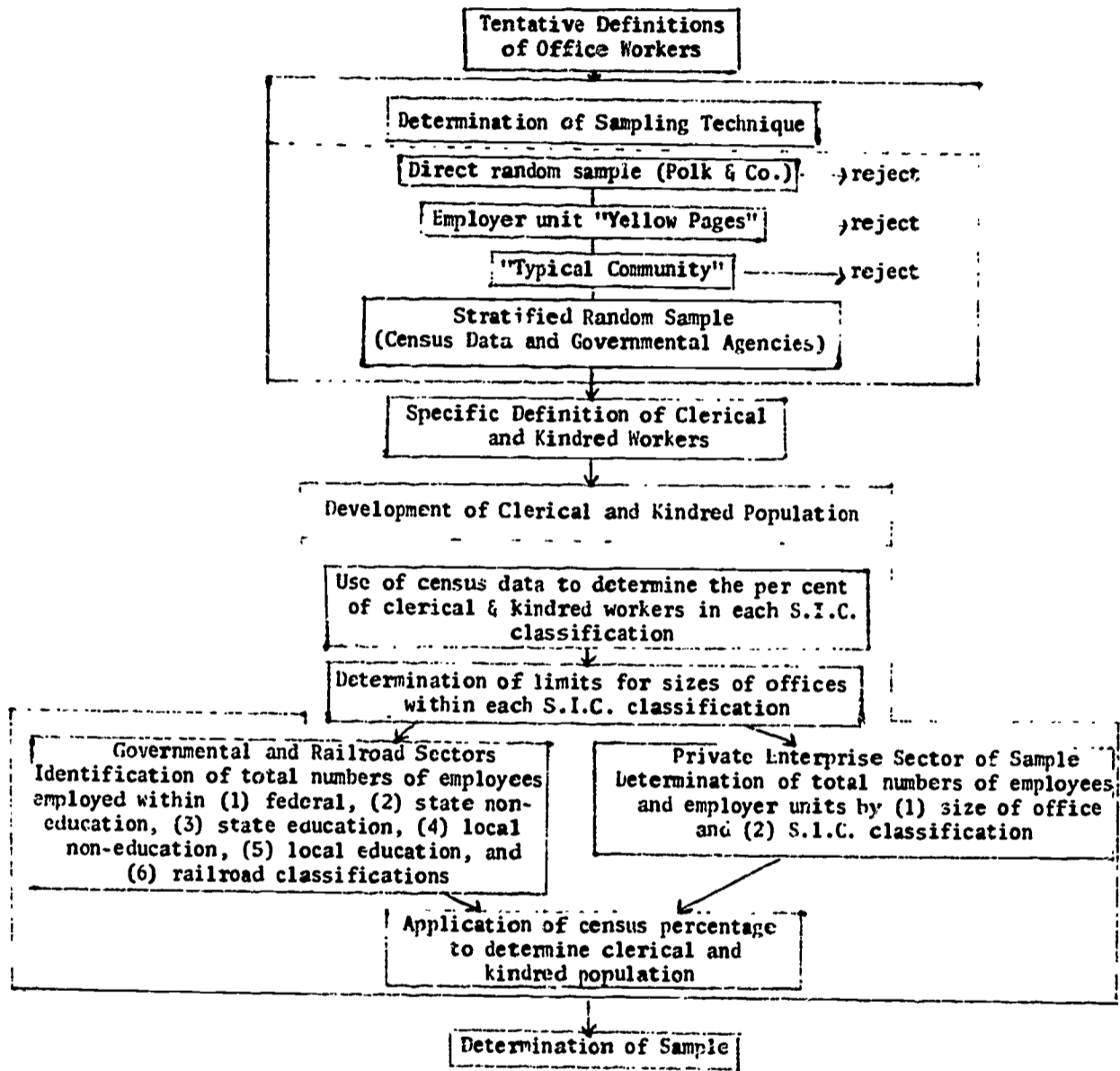
Flow Chart 1

A RESEARCH MODEL FOR IDENTIFICATION OF TASK AND KNOWLEDGE
CLUSTERS ASSOCIATED WITH PERFORMANCE OF MAJOR TYPES
OF OFFICE EMPLOYEES' WORK



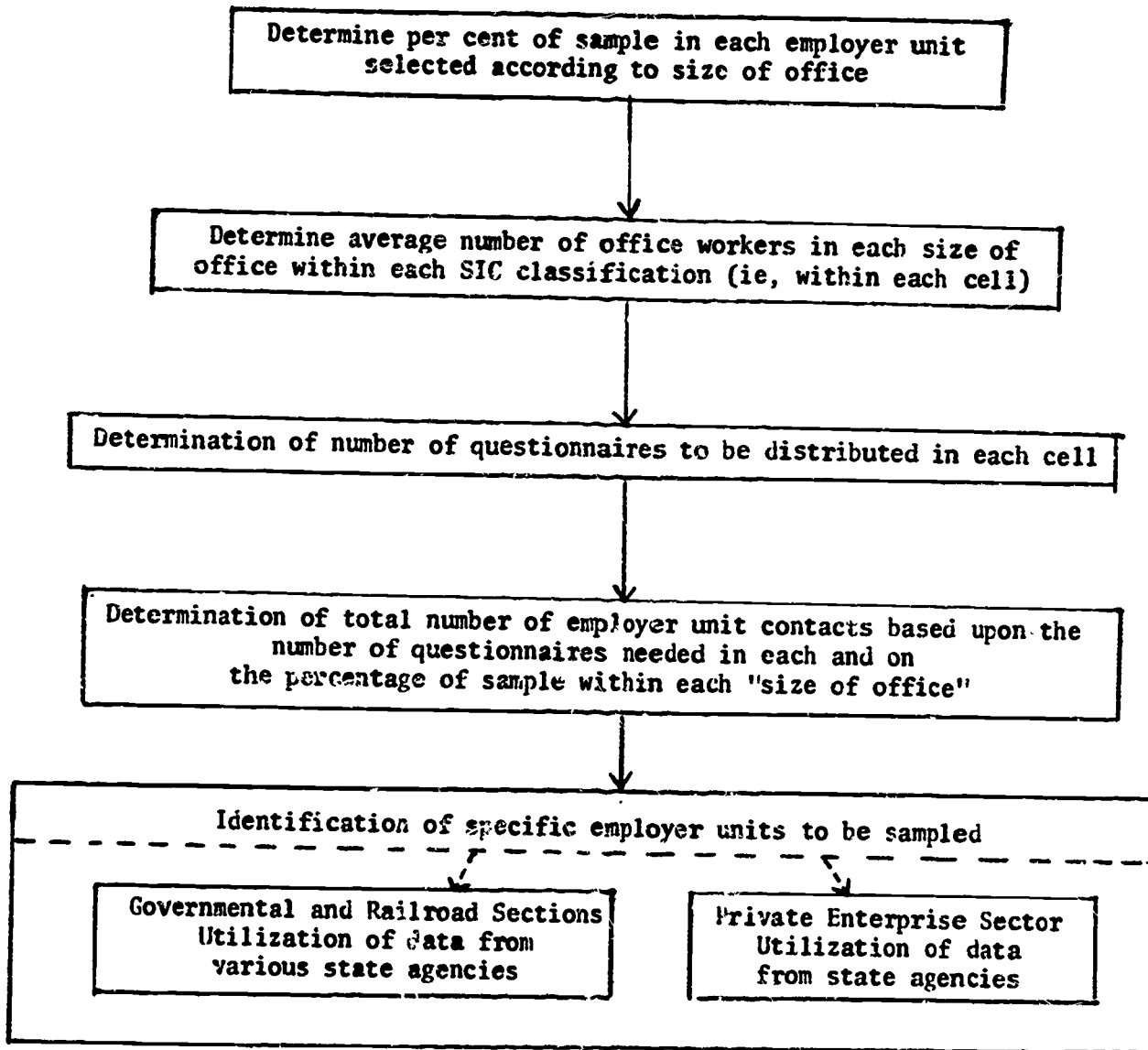
Flow Chart 2

DEVELOPMENT OF OFFICE POPULATION



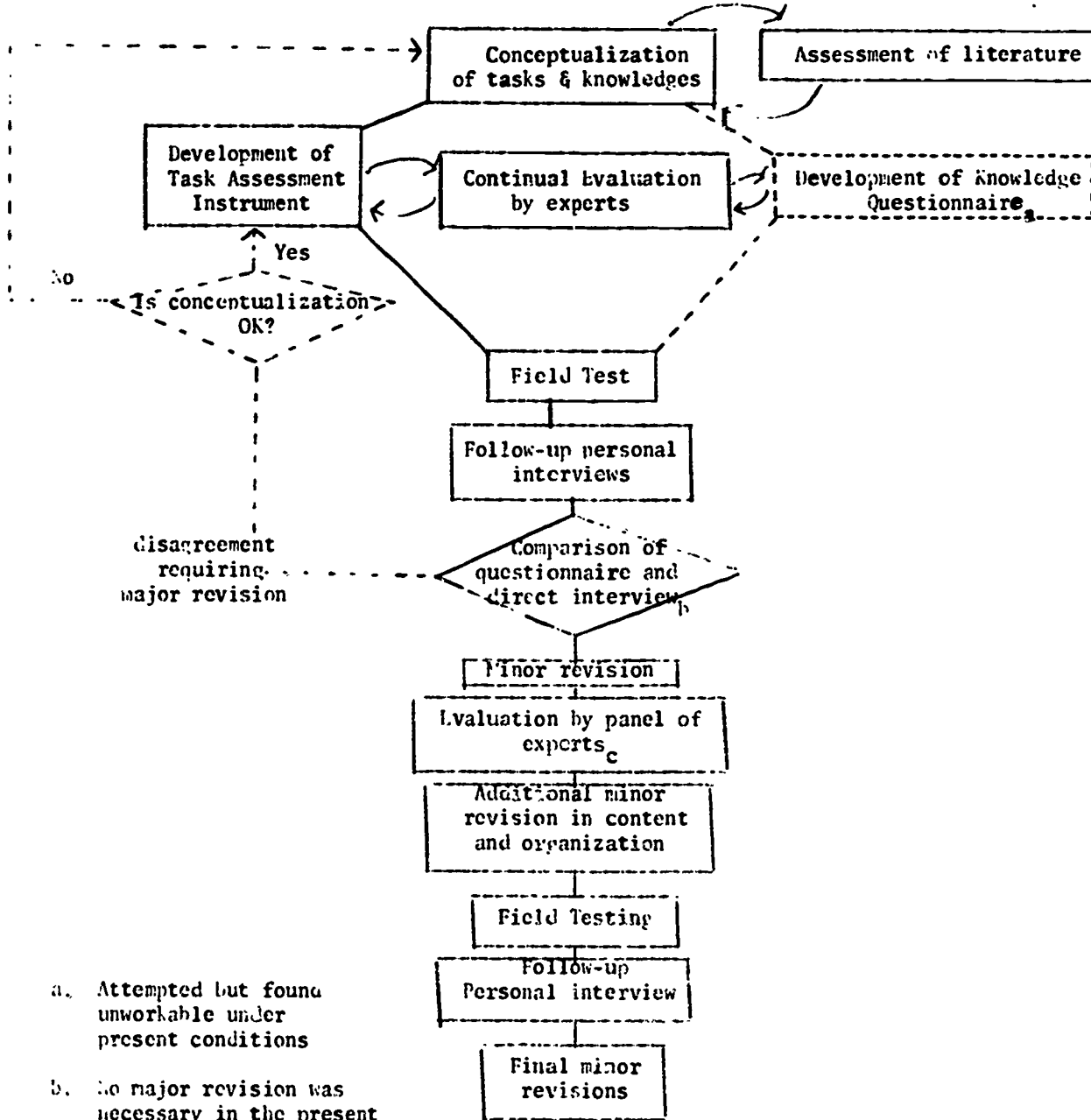
Flow Chart 3

DEVELOPMENT OF SAMPLE



Flow Chart 4

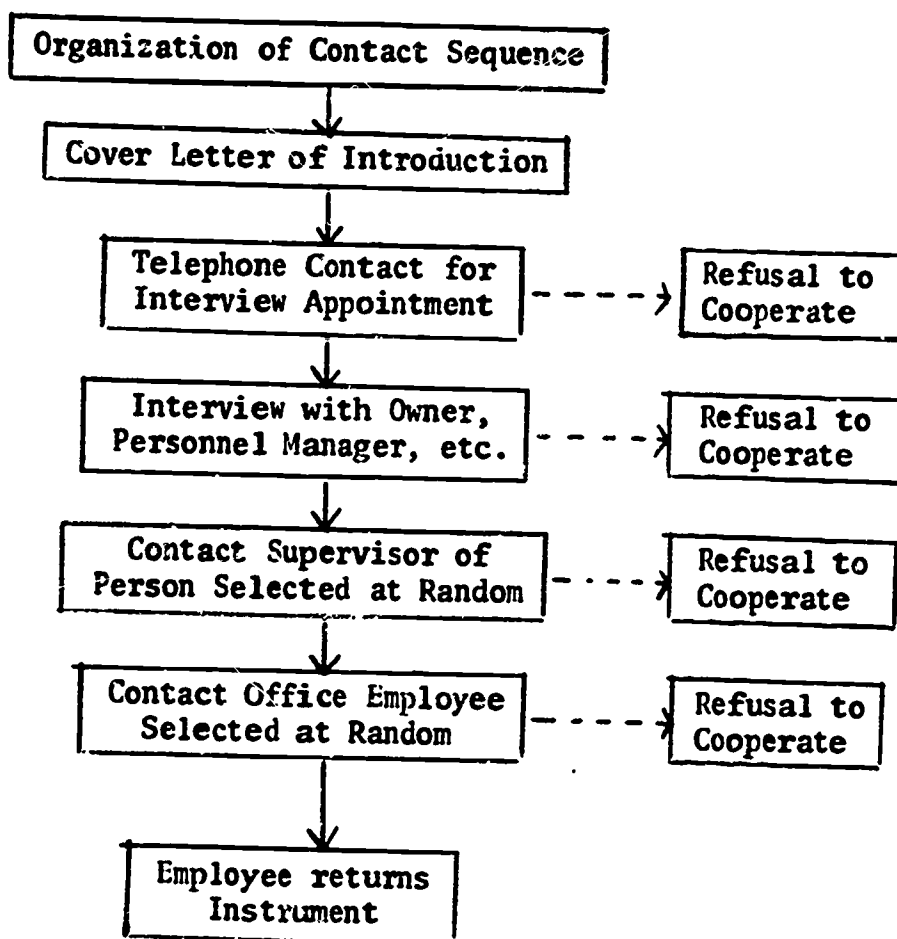
DEVELOPMENT OF DATA-GATHERING INSTRUMENT



- a. Attempted but found unworkable under present conditions
- b. No major revision was necessary in the present study
- c. Experts on this panel should be persons not involved in original conceptualization

Flow Chart 5

DISTRIBUTION OF INSTRUMENT



DISCUSSION

As stated in the INTRODUCTION section, the authors could locate no studies relating specifically to the consideration of the tasks performed by all types of office workers in all types of businesses. Of necessity, today's high school business education curriculum is broad and, in some respects, generalized. Very few, if any, students actually know precisely in what type of business they will begin work. A student may take a book-keeping course in high school but enter a job requiring some typing or filing competence. Likewise, it is hoped that this person would have background that facilitates retraining involved in promotion, even though his first job might be clerical in nature. It is therefore desirable that schooling include some background for tasks performed by major types of office workers and the basic knowledges associated with the successful performance of those tasks.

Determination of Office Population

This study sought to formulate a usable precise "office worker" definition. When it was determined that the 1960 census percentages applied to 1965 employment data by SIC groupings would be used, an analysis indicated that the "census occupational classification is generally comparable with the DOT titles." (8)

The utilization of 1960 percentages of office workers within the SIC groupings was necessary because they are the most up-to-date percentages available. It is believed that any changes between 1960 and 1966 would be small and would not considerably alter the findings.

Problems of gathering accurate and up-to-date employment data are complex. A variety of exploratory approaches were made to precisely identify the office employee population. Discussions were held with Polk & Company exploring the feasibility of a direct random sample. That firm presently has data covering approximately 70 per cent of the population of Washington State, mostly in the urban areas, and may be a source of useful data within the next few years when their data becomes more complete.

It was finally ascertained that by utilizing available data from governmental agencies, the office population could be identified and sampled. No one agency could supply all the necessary data. Access to a September, 1965, listing of employer units and the total number of persons employed by each broken down by SIC groupings was obtained. This did not include the Governmental and Railroad categories, however. The data

used in these categories were obtained from various governmental agencies and from printed monthly bulletins of governmental agencies. The computer work described in the METHOD section was contracted out.

Determination of Sample

Particular problems involved in determining the Governmental population are described in the METHOD section of this report. Similar difficulties were encountered in designing the sample. In the Federal category, the employer units, total persons employed by each, and the frequency of the employer units were identified. For example, assuming that Company X employs 100 people and that there are ten branch offices in the state, this study then assumes that each office employs ten people although it is recognized that there is variance in numbers. In some cases, the "average size" of State Non-Education offices was developed in the same manner.

State Education units and the number of persons employed in each were identified, so the size of those office forces is precise.

It was not possible to identify specific employer units in Local Education and Local Non-Education. The sampling technique is described in detail in the METHOD section. This may be a situation unique to Washington State, so in other areas where this model is used an effort should be made to identify employer units and employees.

Because of discrepancies between the Population Census and the SIC, there is a minor question about certain portions of the results. The SIC classifies all government agencies in a single major group. In the population Census system, however, the category "Public Administration" includes only those activities which are uniquely governmental functions, such as legislative and judicial activities and most of the activities in the executive agencies. Government agencies engaged in medical services and in activities commonly carried on also by private enterprises, such as transportation and manufacturing, are classified in the appropriate industrial category. (8)

In this study the per cent of employees in a given classification who are office workers was derived from census data. The per cent was 39.84% for government. However, the sample was drawn from the SIC data. Therefore, the government area is overweighted in that the per cent of office workers assumed is greater than the per cent actually existent. Therefore, the fact should be considered when interpreting results.

In light of this discrepancy, it is recommended that in future studies facts about the relationship between the Population Census and SIC categories be obtained from the Bureau of the Census.

The percentage of sample within each employer unit selected was also a major consideration. To minimize the cost of obtaining an adequate sample, it was determined that approximately 350 employer units should be contacted.

As previously explained, the employer units were selected on a stratified random sampling basis. The number of employer contacts was based on the number of questionnaires needed in a given cell in relation to the average number of office workers in that cell. It was essential to establish a proportion of sample within each company in order to give each office employee a more equal opportunity of being selected.

Analysis of employment data indicates that more than 95 per cent of the total office population of Washington State has been identified. By defining office workers in ways that correspond to the DOT classification and by sampling each SIC grouping in proportion and according to size of office, many of the variables that have plagued researchers in the office education field have been overcome.

Another basic question in the sample determination was that of companies in the private enterprise sector that have offices in numerous counties. An analysis of available data in terms of the average-size-of-office concept led to the following decision: A company that is multi-county would be considered as an independent employer unit in each county; ie, Company X would have appeared on the initial printout of employer units three or four times, dependent on the number of counties in which it is located.

Development of Data-Gathering Instrument

It is recognized that the questionnaire technique may not be the best possible way to obtain information. This technique is being utilized in this study for the following reasons: (a) it broadens the base of the sample appreciably; (b) it helps obtain data identifying those tasks that are performed by the greatest number of office workers, not the knowledges associated with the successful performance of those tasks; and (c) by use of frequency listings of tasks performed, it will not matter whether a task is listed as number eight or number ten in the frequency listing.

The several criteria considered in developing a valid instrument are noted in the METHOD section. It is believed

that an analysis of the instrument (Appendix J) will show that these criteria have been met and that the instrument will enable investigators to gather the desired data.

The conceptualization and development of the instrument proved to be a complex undertaking. The problem of defining a "task" proved difficult. Is a task operating a typewriter or is it typing invoices, business letters, or labels? Is filing a task or is it desirable to know if office workers file alphabetically, numerically, or by sound? From a curriculum-building standpoint, it is much more valuable to know what specific types of typing tasks are performed and what types of filing systems are used by the greatest percentage of office workers.

Field testing was found to be a valuable phase of instrument development. It helped word items in ways that conveyed similar meanings to the investigators and respondents.

Distribution of Data-Gathering Instrument

The State Director of Business and Office Education is assisting with the identification of persons to act as interviewer-distributors. These individuals are business educators at the high school and community college levels. The persons will be selected on the basis of capacity to communicate with office employers and employees.

A critical duty of the interviewer-distributors will be that of random selection of employees in each office. During the orientation and training meeting prior to the distribution, a thorough explanation of random selection techniques will be discussed. Role playing will be utilized as a training device.

Pilot testing demonstrated the importance of following normal lines of communication within an organization. Explanation of project purposes to supervisors prior to contacting employees reduced delays and increased percentages of returns.

Examining the flow chart on page 18, one can note several points at which a firm or an individual might refuse to cooperate. Experience thus far indicates that thorough explanation and an appreciative attitude on the part of the interviewer-distributor enhances cooperation.

Analysis of Data

Numerous statisticians discuss statistical methods for adjustment of data when response is less than universal. (5) However, a strict numerical adjustment cannot completely eliminate the problems of non-response bias. The only sure way to eliminate non-response bias is to eliminate non-responses.

Frequencies of tasks will be computed. Major clusters of tasks performed by substantial percentages of workers and specialized tasks constituting the work of individuals or small groups will be identified.

Identification of Knowledges and Knowledge Clusters

Clusters of knowledges associated with performance of major clusters of tasks and those unique to performance of more specialized tasks will be identified.

No one best way to identify the knowledges necessary for performing particular tasks is known. Methodological possibilities are: (a) in-depth interviews with expert workers, (b) observation of expert workers in action, and (c) opinions of a panel of experts (educators, writers, and workers).

At present the authors plan to use a panel such as described in the METHOD section of this report.

CONCLUSIONS, IMPLICATIONS, & RECOMMENDATIONS

Conclusions

The statistical model developed by this project can be used to help vocational educators obtain up-to-date information about the major types of tasks actually performed by office workers. The model provides a technique for defining a population, a sampling technique, and a task-identification instrument that enables most office workers to identify the tasks they perform.

Efforts to induce workers to verbalize the knowledges associated with task performance indicate that they have much difficulty in doing so.

Implications

The authors hypothesize that the model as developed can be utilized in any geographical area--local, state, or regional.

The data collected by use of the instrument presented in this report provides reliable evidence of the tasks performed by office workers in the state of Washington. Because the information was gathered by a random sampling process, it is possible to generalize that results are similar to those that would be obtained by use of the technique in other regions. But to so generalize, it is necessary to make the assumption that

the nature of office work in Washington is essentially the same as in other regions; that, for example, a clerk-typist working for a real estate broker in Washington and a clerk-typist working for a real estate broker in Georgia perform essentially the same tasks.

To the extent that the proportion of workers in the various cells (size of firm x in a given SIC) is not significantly different in other regions than in Washington, the results of the study are representative. If, however, in other geographical areas, there are significant variations in cell proportions from that of Washington, different weighting would be necessary to provide accurate results. One caution must be noted. If a region contains a very large proportion of workers in a particular cell while Washington did not, it would be dangerous to apply the Washington weighting. For example, in Washington only a minute proportion of the office employees fall in the small mining category. Washington survey results would not correspond to actual facts in a region where a more substantial proportion of workers fall in the mining cell.

Recommendations

To provide a more adequate base for providing up-to-date business education instruction, it is recommended that:

1. The task-identification instrument be used to ascertain the nature of office work in the private enterprise sector. This will supplement facts on hand for the Governmental and Education sectors.
2. Data so obtained be tabulated and analyzed.
3. Clusters of knowledges associated with performance of major tasks be identified.
4. An in-depth study of office work "leading-edge" firms be made to ascertain emerging changes in office structures and functions. Manufacturers of office equipment would be a major source of such information. Without revealing confidential information, they can provide estimates of ways equipment and processes presently in developmental stages are expected to change the nature of office work and the nature of training office employees will need.
5. That an analysis of the current business education curriculum in high schools be made and a comparison made between the research findings and current curriculum practices.

6. That instructional materials be developed, updated, or revised to more fully meet the present and future needs of business office employees and that pilot-school programs be established to pilot test and revise innovative instructional materials. The staff of Project ERD-257-65 hope to begin development of some instructional systems that will help meet new needs.

SUMMARY

Purpose: To develop a research model that will enable investigators to identify (a) the actual major tasks performed by a representative sample of office workers within any geographical area; (b) the major knowledges required to perform those tasks; and (c) the essential combinations of "tasks and knowledge clusters," which will help educational curriculum planners develop instructional programs and materials that will maximize career-long occupational opportunity, competence, and choice.

Method: (a) An office workers' population was identified by using Federal Census data and data from state governmental agencies. (b) With the assistance of university statisticians and electronic computers, a sample was selected in proportion to the number of office workers in five office-size categories within each major Standard Industrial Classification grouping. (c) A questionnaire composed of 600 office tasks was validated by 286 office workers and supervisors and by a jury of experts. (d) A structured procedure was developed for the distribution of the data-gathering instrument, analysis of data, and identification of knowledges associated with the performance of tasks.

Results: The paradigmatic construction for a task-knowledge investigation is presented in the form of five flow charts.

Implications: The findings of a study that utilizes this research model in a given region may be statistically generalizable to other regions if the proportion of office workers in the various cells (size of firm X in a given SIC) of the regional population matrixes is not significantly different.

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APPENDICES

Appendix A

STATE OF WASHINGTON
PERCENT OF OFFICE WORKERS IN EACH INDUSTRY
TO TOTAL NUMBER OF OFFICE WORKERS
1960

Total Office Workers:
146,180

Agriculture: M = 136 .00503 F = 600 <u>736</u> .5%	Retail Trade: M = 3,572 .12449 F = 14,627 <u>18,199</u> 12.44%
Mining: M = 29 .00057 F = 55 <u>84</u> .01%	Finance, Insurance and Real Estate: M = 2,873 .12553 F = 15,477 <u>18,350</u> 12.55%
Construction: M = 1,000 .0219 F = 2,202 <u>3,202</u> 2.19%	Services: M = 2,678 .1573 F = 20,119 <u>22,797</u> 15.73%
Manufacturing: M = 11,550 .19841 F = 17,455 <u>29,005</u> 19.84%	Government: M = 9,142 .14369 F = 11,864 <u>21,006</u> 14.37%
Transportation: M = 5,072 .05767 F = 3,359 <u>8,431</u> 5.77%	Education: M = 549 .03810 F = 5,022 <u>5,571</u> 3.81%
Comm. and Utility: M = 1,504 .06199 F = 7,558 <u>9,062</u> 6.2%	Other (NEC): M = 176 .00398 F = 406 <u>582</u> .4%
Wholesale Trade: M = 2,692 .06262 F = 6,463 <u>9,155</u> 6.26%	

Total Percent 99.94%

Source: U.S. Department of Commerce, Bureau of the Census, U.S. Census of Population: 1960 Detailed Characteristics, Washington. Final Report PC(1)-49 D. U.S. Government Printing Office, Washington, D.C., 1962, pp 339-344.

Appendix B

STATE OF WASHINGTON
TOTAL EMPLOYEES--EACH INDUSTRY
PERCENT OF OFFICE WORKERS IN EACH INDUSTRY
1960

Agriculture: M = 58,077 .0110 136 F = 8,356 1.1% 600 <u>66,433</u> Office workers 736	Retail Trade: M = 87,053 .1180 3,572 F = 67,116 11.8% 14,627 <u>154,169</u> Office workers 18,199
Mining: M = 1,483 .0541 29 F = 69 5.41% 55 <u>1,552</u> Office workers 84	Finance, Insurance & Real Estate: M = 22,144 .4287 2,873 F = 20,658 42.87% 15,477 <u>42,802</u> Office workers 18,350
Construction: M = 64,563 .0474 2,202 F = 2,908 4.74% 3,202 <u>67,471</u> Office workers 3,202	Services: M = 69,951 .133 2,678 F = 101,236 13.3% 20,119 <u>171,197</u> Office workers 22,797
Manufacturing: M = 208,641 .1174 11,550 F = 38,297 11.74% 17,455 <u>246,938</u> Office workers 29,005	Government (Non-Education): M = 36,901 .3984 9,142 F = 15,824 39.84% 11,864 <u>52,725</u> Office workers 21,006
Transportation: M = 44,108 .1696 5,072 F = 5,576 16.96% 3,359 <u>49,684</u> Office workers 8,431	Education: M = 21,926 .1107 549 F = 28,401 11.07% 5,022 <u>50,327</u> Office workers 5,571
Communications and Utilities: M = 18,939 .3294 1,504 F = 8,565 32.94% 7,558 <u>27,504</u> Office workers 9,062	Other (NEC): M = 17,540 .0200 176 F = 11,480 2% 406 <u>29,020</u> Office workers 582
Wholesale Trade: M = 31,938 .2175 2,692 F = 10,149 21.75% 6,463 <u>42,087</u> Office workers 9,155	

Source: U.S. Department of Commerce, Bureau of the Census, U.S. Census of Population: 1960, Detailed Characteristics, Washington. Final Report PC(1)-49D., U.S. Government Printing Office, Washington, D.C., 1962, pp. 339-344.

Appendix C

SIZE OF EMPLOYER UNIT

	Small	Medium	Large	X Large	XX Large
Agriculture	1-364	365-4,450	4,551-9,000	9,001-27,182	27,183+
Mining	1- 74	75- 925	926-1,830	1,831- 5,527	5,528+
Construction	1- 85	86-1,050	1,051-2,088	2,089- 6,308	6,309+
Manufacturing	1- 34	35- 426	427- 851	852- 2,554	2,555+
Communications and Utilities	1- 12	13- 152	153- 302	303- 910	911+
Wholesale Trade	1- 18	19- 230	231- 459	460- 1,378	1,379+
Retail Trade	1- 34	35- 425	426- 846	847- 2,541	2,542+
Finance, Insurance and Real Estate	1- 9	10- 118	119- 232	233- 699	700+
Service	1- 31	32- 375	376- 751	752- 2,255	2,256+

Appendix D

EMPLOYER UNITS AND WORKERS EMPLOYED
BY SIZE OF FIRM
EMPLOYMENT DATA FOR SEPTEMBER, 1965

		Small	Medium	Large	X Large	XX Large
Agriculture:	Employer units	576	0	0	0	0
	Employees	3,342				
Mining:	Employer units	185	2	0	0	0
	Employees	1,533	279			
Construction:	Employer units	5,645	65	0	0	0
	Employees	40,634	12,942			
Manufacturing:	Employer units	3,769	837	50	10	6
	Employees	32,326	89,030	31,799	14,918	72,804
Transportation: (Except R.R.)	Employer units	1,971	191	7	5	0
	Employees	10,217	12,868	3,041	5,160	
Communications and Utilities:	Employer units	311	134	12	6	1
	Employees	1,435	5,525	2,369	4,817	4,776
Wholesale Trade:	Employer units	4,779	722	7	4	0
	Employees	22,961	32,060	2,126	2,489	
Retail Trade:	Employer units	17,060	549	8	6	1
	Employees	90,660	41,090	3,833	9,908	2,598
Finance, Insurance and Real Estate:	Employer units	5,113	756	18	16	3
	Employees	12,495	19,562	2,453	5,794	3,852
Services:	Employer units	14,800	423	4	1	0
	Employees	55,928	27,570	1,964	2,190	

Appendix E

GOVERNMENTAL AND RAILROAD EMPLOYMENT
STATE OF WASHINGTON
SEPTEMBER, 1965

Federal	53,200
State Education	20,694
State Non-Education	23,141
Local Education	51,000
Local Non-Education (Counties and Cities)	50,400
Railroads	13,500

Appendix F

OFFICE WORKERS IN STATE OF WASHINGTON
BY INDUSTRIAL CLASSIFICATION AND SIZE OF OFFICE
SEPTEMBER, 1965

	Small	Medium	Large	X Large	XX Large	Total	Percent of Total Office Population
Agriculture	37	0	0	0	0	37	.02
Mining	83	15	0	0	0	98	.05
Construction	1,926	613	0	0	0	2,539	1.54
Manufacturing	3,795	10,452	3,733	1,751	8,547	28,278	17.21
Transportation (except RR)	1,733	2,182	515	876	0	5,306	3.23
Communications & Utilities	473	1,820	780	1,588	1,574	6,235	3.79
Wholesale Trade	4,994	6,973	475	541	0	12,983	7.90
Retail Trade	10,679	4,849	453	1,169	307	17,475	10.63
Finance, Insurance and Real Estate	5,357	8,386	1,052	2,484	1,651	18,930	11.52
Services	7,438	3,667	261	292	0	11,658	7.09
State Non-Education	33	1,000	732	4,949	2,505	9,219	5.61
State Education	1	83	0	409	1,797	2,290	1.39
Federal	22	10,439	1,359	1,614	7,785	21,200	12.90
Local Non-Education						20,079	12.22
Local Education						5,646	3.43
Railroad	0	0	0	0	2,290	2,290	1.39
TOTAL						164,263	99.92 %

Appendix G

STATE OF WASHINGTON
 AVERAGE NUMBER OF OFFICE WORKERS PER EMPLOYER UNIT
 SEPTEMBER, 1965

	Small	Medium	Large	X Large	XX Large
Agriculture	.07	0	0	0	0
Mining	.45	7.57	0	0	0
Construction	.34	9.40	0	0	0
Manufacturing	.60	12.50	75	175	1,425
Transportation (except RR)	.88	11.43	74	175	0
Communications & Utilities	1.50	13.60	65	264	1,576
Wholesale Trade	.96	9.66	68	135	0
Retail Trade	.62	8.80	57	195	307
Finance, Insurance, and Real Estate	1.04	11.09	58	155	551
Services	.50	8.60	65	291	0
State Non-Education	2.24	17.93	92	248	1,257
State Education	1.00	11.80	0	136	893
Railroad	0	0	0	0	458

Appendix H

NUMBER OF QUESTIONNAIRES TO BE DISTRIBUTED
800 Total

	Small	Medium	Large	X Large	XX Large	Total	Percent to Total
Agriculture	1	0	0	0	0	1	.13
Mining	1	0	0	0	0	1	.13
Construction	8	4	0	0	0	12	1.50
Manufacturing	19	51	18	8	42	138	17.25
Transportation (except RR)	8	11	3	4	0	26	3.25
Communications & Utilities	2	8	4	8	8	30	3.75
Wholesale Trade	24	34	2	3	0	63	7.88
Retail Trade	52	24	2	6	1	85	10.60
Finance, Insurance and Real Estate	26	41	5	12	8	92	11.50
Services	37	18	1	1	0	57	7.10
State Non-Education	0	5	4	24	12	45	5.60
State Education	0	1	0	2	8	11	1.38
Federal	0	51	6	8	38	103	12.88
Local Non-Education	0	0	0	0	0	98	12.25
Local Education	0	0	0	0	11	27	3.38
Railroads	0	0	0	0	11	11	1.38
TOTAL						800	99.96%

Appendix I

NUMBER OF EMPLOYER UNITS SELECTED
ON A RANDOM BASIS
(COMPUTER SELECTION)

	Small	Medium	Large	X Large	XX Large	Total
Agriculture	1	0	0	0	0	1
Mining	1	0	0	0	0	1
Construction	8	2	0	0	0	10
Manufacturing	19	20	3	1	6	49
Transportation (except RR)	8	5	1	1	0	15
Communications & Utilities	2	3	1	1	1	8
Wholesale Trade	24	17	1	1	0	43
Retail Trade	52	12	1	1	1	67
Finance, Insurance and Real Estate	26	20	1	2	3	52
Services	37	9	1	1	0	48
TOTAL	178	88	9	8	11	294

UNITS SELECTED AT RANDOM
BY UNIVERSITY PERSONNEL

	Small	Medium	Large	X Large	XX Large	Total
Federal	0	7	1	1	2	11
State Education	0	1	0	1	2	4
State Non-Education	0	2	1	2	2	7
Railroad	0	0	0	0	2	2
TOTAL	0	10	2	4	8	24

Appendix J

OFFICE OCCUPATIONS SURVEY INSTRUMENT

You can help our schools give your sons and daughters the kinds of education they need to earn good incomes.

Many changes are taking place in the kinds of work people do. Schools need up-to-date facts about exactly what kinds of work are being done. Those facts will help schools provide useful training.

You have been selected to help with a nation-wide study to show what actual kinds of work people in office occupations perform.

The information will be STRICTLY CONFIDENTIAL.

Your cooperation is appreciated and will help your schools prepare young people to earn better incomes and be more productive employees.

After you have completed the attached questionnaire, return it promptly in the enclosed self-addressed envelope. No postage is necessary.

This project is sponsored by:

Washington State University
University of Idaho
Washington State Board for Vocational Education
Idaho State Board for Vocational Education

The Following General Information
Would Be Very Useful in This Study

In questions 1-4, please fill in the blank with the necessary information.

1. Name _____
2. Present Job Title _____
3. Name of Employing Firm _____
4. Address of Employing Firm _____
Street Number _____
City _____ State _____ Zip Code _____

5. Where did you receive your specialized occupational training?
(Check (✓) all answers that apply to you.)

- | | |
|--|--|
| <input type="checkbox"/> 1. On the job (not apprentice) | <input type="checkbox"/> 8. High School |
| <input type="checkbox"/> 2. Apprentice | <input type="checkbox"/> 9. Junior College |
| <input type="checkbox"/> 3. Military | <input type="checkbox"/> 10. College or university |
| <input type="checkbox"/> 4. Business school | <input type="checkbox"/> 11. Self-taught |
| <input type="checkbox"/> 5. Trade or technical school | <input type="checkbox"/> 12. Extension or evening school |
| <input type="checkbox"/> 6. Correspondence | <input type="checkbox"/> 13. Other (please list) |
| <input type="checkbox"/> 7. Specialized school (for example: IBM Key Punch School, Heavy Equipment School) | _____ |
| | _____ |
| | _____ |

In questions 6 - 10 please circle the one answer which applies.

6. What was the highest grade of school you completed?

- | | |
|--------------|---------------|
| 1. 8 or less | 6. 13 |
| 2. 9 | 7. 14 |
| 3. 10 | 8. 15 |
| 4. 11 | 9. 16 or more |
| 5. 12 | |

7. Sex: 1. Male 2. Female

8. Age:
1. 14-19 2. 20-30 3. 31-44 4. 45-64 5. 65+

9. How many times have you changed occupations in the past 5 years?
(For example: waitress to retail sales to office work = 2 changes)

1. 0 times
 2. 1 - 2 times
 3. 3 or more times

10. How many years have you been in your present occupation? (i.e., office occupations)
1. Less than 1 year
 2. 1 - 5 years
 3. More than 5 years
11. Number of office workers, including office supervisors, in your office (department)?
1. 1 - 4
 2. 5 - 49
 3. 50+
12. If your employer's business has two or more departments, please check the approximate number of office workers in your company. (Restrict estimate to your city if your employer has offices in many localities.)
1. 1 - 4
 2. 5 - 49
 3. 50+
13. Place a check (✓) before the ONE area that was your main emphasis of study in high school:
1. College preparatory
 2. Business education--Secretarial
 3. Business education--Bookkeeping
 4. Business education--Clerical (no shorthand)
 5. Distributive education or retailing
 6. None of the above
14. Check (✓) the ONE category below that most accurately describes your major duties. Listed under each are examples of job classifications.
- | | |
|--|--|
| <p><input type="checkbox"/> 1. OFFICE MANAGER OR SUPERVISOR</p> <p><input type="checkbox"/> 2. SECRETARIAL-STENOGRAPHY</p> <ol style="list-style-type: none"> a. Executive Secretary b. Secretary c. Stenographer d. Clerk-Stenographer e. Transcribing machine operator <p><input type="checkbox"/> 3. CLERICAL</p> <ol style="list-style-type: none"> a. Typist b. Clerk-typist c. File clerk d. Receptionist e. Stock clerk f. Mail preparing-handling clerk <p><input type="checkbox"/> 4. BOOKKEEPING OR ACCOUNTING</p> <ol style="list-style-type: none"> a. Accounts Receivable Clerk b. Accounts Payable Clerk c. Posting Clerk d. Payroll Clerk e. Bookkeeper | <p><input type="checkbox"/> 5. BUSINESS MACHINE OPERATOR</p> <ol style="list-style-type: none"> a. Calculating or adding machine operator b. Duplicating machine operator c. Bookkeeping or billing machine operator d. Teletype or switchboard (PBX) operator <p><input type="checkbox"/> 6. ELECTRONIC COMPUTER OPERATING PERSONNEL</p> <ol style="list-style-type: none"> a. Keypunch machine operator b. Tabulating or console operator c. Programmer d. Peripheral equipment operator |
|--|--|

INSTRUCTIONS

On the following pages is a list of office tasks (activities).

Read each task listed.

If you have actually performed the office task, even occasionally, during the last two (2) years while working for your present firm, check (✓) the blank under "YES" which appears to the left of the item.
Note: Do not include tasks performed for any previous firms.

If you have not performed the task in the last two (2) years while working for your present firm, check (✓) the blank under "NO" to the left of the item.

DO NOT CHECK "YES" UNLESS YOU HAVE ACTUALLY PERFORMED THIS OFFICE TASK IN THE LAST TWO (2) YEARS WHILE WORKING FOR YOUR PRESENT FIRM, Even if performed only once or twice.

MAKE CERTAIN THAT YOU CHECK EACH ITEM EITHER "YES" OR "NO."

An example may be helpful to you:

YES NO

✓ Type letters (A check of "yes" indicates you have typed letters as part of your occupation in the last two (2) years while working for your present firm.)

✓ Drive a truck (A check of "no" indicates that you have not driven a truck as part of your occupation in the last two (2) years, even though you may be able to do it.)

✓ Operate Stencil Duplicator (A check of "yes" indicates that you have operated the stencil duplicating machine on your job in the last two years even though you have operated it only once or twice.)

If you have performed these office tasks in your occupation in the last two (2) years while working for your present firm, check (✓) YES; otherwise, check (✓) NO.

TYPEWRITING:

YES NO

- ___ ___ Type business letters
- ___ ___ Type addresses on envelopes and/or cards
- ___ ___ Type memorandums
- ___ ___ Type fill-ins on duplicated letters or bulletins (form letters, etc.)
- ___ ___ Type carbon copies
- ___ ___ Type manuscripts and/or reports
- ___ ___ Type and/or rule tabular material (tables, columns, rows of figures)
- ___ ___ Type final copy from rough-draft copy
- ___ ___ Type copy from unarranged copy
- ___ ___ Proofread typewritten copy
- ___ ___ Erase carbon copies
- ___ ___ Erase original copies
- ___ ___ Make corrections with Tip OK, Ko-rectype, etc. (requires no erasing)
- ___ ___ Type financial statements:
- ___ ___ Budgets
- ___ ___ Balance Sheets
- ___ ___ Profit & Loss Statements
- ___ ___ Bank Reconciliations
- ___ ___ Other: (please list)

Type Legal papers and documents:

- ___ ___ Acknowledgments
- ___ ___ Powers of attorney
- ___ ___ Proxies
- ___ ___ Affidavits
- ___ ___ Sales contracts
- ___ ___ Leases
- ___ ___ Agreements
- ___ ___ Deeds
- ___ ___ Mortgages
- ___ ___ Incorporation papers
- ___ ___ Real estate papers
- ___ ___ Wills and probate papers
- ___ ___ Litigation papers
- ___ ___ Insurance forms
- ___ ___ Insurance policies
- ___ ___ Other: (please list)

TYPEWRITING continued

YES NO

- ___ ___ Type information on continuous roll tape (gummed back or self-sealing back)
- ___ ___ Type labels individually
- ___ ___ Type postal cards
- ___ ___ Type cards (index cards, file cards, "address finder" cards, etc.)
- ___ ___ Type in outline form
- ___ ___ Type display or decorative type copy
- ___ ___ Type minutes or reports of meetings
- ___ ___ Use proofreading symbols
- ___ ___ Compose copy at the typewriter
- ___ ___ Take dictation at the typewriter (type dictation as employer dictates)
- ___ ___ Type and correct spirit masters (e.g., Ditto masters, etc.)
- ___ ___ Type and correct stencils (Mimeograph process)
- ___ ___ Type and correct offset masters (mats or multilith)
- ___ ___ Prepare ruled business forms
- ___ ___ Type copy where all lines end even on the right margin (justifying)
- ___ ___ Type on printed business forms:
 - ___ ___ Telegrams
 - ___ ___ Payroll time sheets
 - ___ ___ Tax returns
 - ___ ___ W-2 tax forms
 - ___ ___ Bills of sale
 - ___ ___ Checks
 - ___ ___ Credit memorandums
 - ___ ___ Invoices
 - ___ ___ Monthly statements
 - ___ ___ News releases
 - ___ ___ Personnel forms
 - ___ ___ Promissory notes
 - ___ ___ Purchase orders
 - ___ ___ Purchase requisitions
 - ___ ___ Vouchers
 - ___ ___ Quotations
 - ___ ___ Sales quotas and graphs
 - ___ ___ Credit inquiries
 - ___ ___ Shipping orders
 - ___ ___ Receipts
 - ___ ___ Other printed business forms (please list):

- ___ ___ Select or order proper typewriting paper and carbon paper
- ___ ___ Select or order other typewriting supplies and equipment (erasers, ribbons, etc.)

In the space below, list other typewriting tasks or duties performed in your occupation:

If you have performed these office tasks in your occupation in the last two (2) years while working for your present firm, check (✓) YES; otherwise, check (↔) NO.

OPERATING OFFICE MACHINES AND EQUIPMENT:

YES NO

Typewriters:

---	---	Manual
---	---	Electric (standard)
---	---	Electric (IBM Executive)
---	---	Billing
---	---	Vari-typer
---	---	Automatic (Autotypist, Robotype, IBM Magnetic tape machine, etc.)
---	---	Justewriter
---	---	Teletype
---	---	Flexowriter

Electronic Data Processing Equipment:

---	---	Key punch
---	---	Sorter
---	---	Tabulating machine
---	---	Gang punch
---	---	Card Verifier
---	---	Scanner
---	---	Computer
---	---	Accounting

Adding and Calculating Machines:

---	---	10-key adding
---	---	10-key printing calculator
---	---	full-bank adding
---	---	calculator (Monroe, Marchant, etc)
---	---	Key-driver (e.g., Comptometer)
---	---	bookkeeping machines
---	---	electronic calculator

Duplicating Machines

---	---	Spirit duplicator (e.g. Ditto)
---	---	Stencil duplicator (e.g. Mimeograph)
---	---	Offset duplicator (e.g. Multilith)
---	---	Illuminated drawing board (e.g. Mimeoscope)
---	---	Copying machine (e.g. Xerox, Thermofax, Ozalid, etc.)
---	---	Facsimile machine (e.g. Deskfax)
---	---	Photographic camera
---	---	Microfilm Reproducer

OPERATING OFFICE MACHINES AND EQUIPMENT continued

YES NO

Miscellaneous:

- | | | |
|-----|-----|--|
| ___ | ___ | Operate motorized filing equipment |
| ___ | ___ | Operate microfilm recorder |
| ___ | ___ | Operate microfilm reader |
| ___ | ___ | Operate switchboard (PBX) |
| ___ | ___ | Operate public-address system |
| ___ | ___ | Operate intercom |
| ___ | ___ | Operate burster machine |
| ___ | ___ | Operate automatic collator |
| ___ | ___ | Operate de-collator |
| ___ | ___ | Operate electric stapler |
| ___ | ___ | Operate folding machine |
| ___ | ___ | Operate inserter (stuffing machine) |
| ___ | ___ | Operate mailing meter (postage meter) |
| ___ | ___ | Operate mailing sealer |
| ___ | ___ | Operate addressograph |
| ___ | ___ | Operate automatic letter opener |
| ___ | ___ | Operate binding machine |
| ___ | ___ | Operate tying machine |
| ___ | ___ | Operate Cerlox machine |
| ___ | ___ | Operate paper cutter |
| ___ | ___ | Operate paper punch |
| ___ | ___ | Operate paper shredder |
| ___ | ___ | Operate embossing machine (Graphotype) |
| ___ | ___ | Operate laminating machine |
| ___ | ___ | Operate check writer protector |
| ___ | ___ | Operate check signing machine |
| ___ | ___ | Operate transcribing machine (IBM Executary, Dictaphone, etc.) |
| ___ | ___ | Operate dictating machine |
| ___ | ___ | Operate film, filmstrip, or slide projector |
| ___ | ___ | Operate tape recorder |
| ___ | ___ | Operate overhead projector |
| ___ | ___ | Operate cash register |
| ___ | ___ | Operate change-making machine |
| ___ | ___ | Operate numbering machine |
| ___ | ___ | Operate elevator (not self-service) |
| ___ | ___ | Do you <u>service</u> office machines and equipment (minor repairing)? |

Other machines used: (please list)

In the space below, list other machine and equipment operation tasks you have performed but that are not listed above:

If you have performed these office tasks in your occupation in the last two (2) years while working for your present firm, check (✓) YES; otherwise, check (✓) NO.

TAKING DICTATION AND TRANSCRIBING:

YES NO

- ___ ___ Write shorthand from one dictator (Gregg, Pitman, Forkner, etc.)
- ___ ___ Write shorthand from two or more dictators (but only one at a time)
- ___ ___ Write group proceedings and/or conferences in shorthand
- ___ ___ Transcribe (type) from shorthand outlines
- ___ ___ Take dictation over the telephone
- ___ ___ Operate shorthand machine (e.g., Stenograph)
- ___ ___ Transcribe (type) from shorthand machine tape (eg., Stenograph)
- ___ ___ Transcribe (type) from recorded media--belt, disc, etc. (e.g., IBM Executary, Stenorette, Dictaphone, etc.)

Do you type from shorthand outlines or recorded media any business paper, form, or document not listed on the "Typewriting" task sheet? If so, please list below:

MAILING TASKS:

YES NO

- ___ ___ Pick up mail (leave desk to obtain)
- ___ ___ Sort mail (for different persons)
- ___ ___ Open mail
- ___ ___ Stamp incoming mail (as to date, time, etc.)
- ___ ___ Log incoming mail (in regular book)
- ___ ___ Read incoming mail
- ___ ___ Make notes on incoming mail which superior should see
- ___ ___ Attach pertinent correspondence to incoming mail for superior, to refresh his memory
- ___ ___ Sort mail (in priority order)
- ___ ___ Forward or distribute mail
- ___ ___ Sign for Registered Mail
- ___ ___ Read outgoing mail to check up on information, etc.
- ___ ___ Mark, attach, or enclose materials for outgoing mail
- ___ ___ Sign boss's mail (his signature)
- ___ ___ Address letters, packages, etc.
- ___ ___ Fold letters
- ___ ___ Insert letters in envelopes
- ___ ___ Seal envelopes (manually)
- ___ ___ Stamp envelopes (manually)

MAILING TASKS continued

YES NO

- | | | |
|-----|-----|--|
| ___ | ___ | Wrap and tie packages |
| ___ | ___ | Calculate postal rates (Parcel post, bulk, 1st class mail, etc.) |
| ___ | ___ | Use franking-permit privileges (right to send free mail) |
| ___ | ___ | Take mail to mail room or mail box |
| ___ | ___ | Take mail to post office |
| ___ | ___ | Have mail registered or certified |
| ___ | ___ | Have mail insured |
| ___ | ___ | Purchase postage |
| ___ | ___ | Keep postage meter record |
| ___ | ___ | Trace mail |
| ___ | ___ | Recall mail from post office |
| ___ | ___ | Make up mailing list |
| ___ | ___ | Distribute mailing list |
| ___ | ___ | Check mailing list |
| ___ | ___ | Revise mailing list |
| ___ | ___ | Obtain mailing material from Post Office (certified and registered mail stickers, rate sheets, etc.) |
| ___ | ___ | Stuff, bundle, sort and/or label outgoing bulk mail |

In the space below, list other mailing tasks performed but not listed above:

FILING

YES NO

- | | | |
|-----|-----|---|
| ___ | ___ | Sort materials for filing |
| ___ | ___ | File materials by number |
| ___ | ___ | File materials by name of person |
| ___ | ___ | File materials by topic or subject |
| ___ | ___ | File materials by city, state, or region |
| ___ | ___ | File materials by date |
| ___ | ___ | File materials by sound (Soundex, etc.) |
| ___ | ___ | Get materials from files |
| ___ | ___ | Check out materials from files to employees |
| ___ | ___ | Keep tickler or follow-up files of various kinds |
| ___ | ___ | Handle cross references |
| ___ | ___ | Keep card indexes of various kinds |
| ___ | ___ | Follow up released materials |
| ___ | ___ | Search for lost materials |
| ___ | ___ | Handle classified or confidential files |
| ___ | ___ | Revise files |
| ___ | ___ | Transfer records to inactive files |
| ___ | ___ | Dispose of records |
| ___ | ___ | Select and/or order filing equipment and supplies |
| ___ | ___ | Install filing system |

If you have performed these office tasks in your occupation in the last two (2) years while working for your present firm, check (✓) YES; otherwise, check (✓) NO.

FILING continued

YES NO

- ___ ___ Control and manage filing system
- ___ ___ Assign file numbers
- ___ ___ Make folders and folder titles for files (labels)
- ___ ___ Use microfilming equipment
- ___ ___ Use motorized filing equipment
- ___ ___ Use magnetic filing equipment
- ___ ___ Keep clipping file (newspapers, magazine articles, etc.)
- ___ ___ Keep clipping books (of any type)

If you perform additional filing or filing-related tasks, please list those tasks in the space below:

TELEPHONING AND COMMUNICATING:

YES NO

- ___ ___ Place telephone calls (local)
- ___ ___ Place telephone calls (long distance)
- ___ ___ Maintain record of long distance calls
- ___ ___ Answer telephone
- ___ ___ Turn telephone calls over to another department
- ___ ___ Screen employer's calls
- ___ ___ Place telephone memoranda, messages, etc., where employer will see them
- ___ ___ Arrange for and/or cancel newspaper or magazine advertising
- ___ ___ Send telegrams and/or cablegrams
- ___ ___ Receive telegrams and/or cablegrams
- ___ ___ Code telegrams and/or cablegrams
- ___ ___ De-code telegrams and/or cablegrams
- ___ ___ Figure cost of telegrams, long distance calls, night and day letters, etc.
- ___ ___ Decide on least expensive and/or most desirable way to communicate (telegram, long distance call, etc.)
- ___ ___ Compose business reports of any kind
- ___ ___ Compose legal papers
- ___ ___ Compose correspondence
- ___ ___ Compose news items or magazine articles (newspapers, trade publications, house organs, etc.)
- ___ ___ Compose written directions to other office workers

TELEPHONING AND COMMUNICATING continued

YES NO

- | | | |
|-----|-----|--|
| ___ | ___ | Give oral directions to other office workers |
| ___ | ___ | Give dictation to other office workers |
| ___ | ___ | Give oral presentations (reports, speeches, etc.) |
| ___ | ___ | Conduct meetings |
| ___ | ___ | Prepare audio-visual materials (transparencies, tape recordings, etc.) |
| ___ | ___ | Carry out written or oral orders or instructions of superiors |

In the space below, list other telephone or communication tasks you perform but that are not listed on the preceding list:

CLERICAL TASKS

YES NO

- | | | |
|-----|-----|---|
| ___ | ___ | Get quotations on supplies (from supplier) |
| ___ | ___ | Order supplies of various kinds for the office (from suppliers or central supply department) |
| ___ | ___ | Check on supplies (for re-ordering purposes) |
| ___ | ___ | Make out requisitions |
| ___ | ___ | Approve requisitions made out by others |
| ___ | ___ | Inspect material received for completeness, damages, etc. |
| ___ | ___ | Distribute supplies |
| ___ | ___ | Route shipments of materials (within office, between departments, etc.) |
| ___ | ___ | Arrange papers or articles on your own and/or your employer's desk |
| ___ | ___ | Keep desks equipped with office supplies (sharpened pencils, ink in pens, etc.) |
| ___ | ___ | Dust employer's desk and keep employer's desk neat |
| ___ | ___ | Make out day's schedule for employer |
| ___ | ___ | Keep calendar marked with appointments for employer at his desk |
| ___ | ___ | Place daily newspapers, magazines, etc., on employer's desk |
| ___ | ___ | Scan newspapers, magazines, trade journals, for employer marking items of interest to him |
| ___ | ___ | Anticipate needs of employer as to records, papers, etc., needed on trips, for interviews, etc. |
| ___ | ___ | Make out itinerary or schedule for employer's trips |
| ___ | ___ | Obtain trip reservations and/or tickets for employer |
| ___ | ___ | Make hotel reservations for employer |
| ___ | ___ | Obtain information and papers for foreign travel for employer |
| ___ | ___ | Apply for passports or visas for employer |
| ___ | ___ | Make preparations for meetings |
| ___ | ___ | Maintain incoming and outgoing correspondence register |
| ___ | ___ | Check money orders, checks, etc., as to amounts, dates, signatures |

If you have performed these office tasks in your occupation in the last two (2) years while working for your present firm, check (✓) YES; otherwise, check (✓) NO.

CLERICAL TASKS continued

YES NO

- | | | |
|-----|-----|--|
| ___ | ___ | Make arrangements for freight, express, etc. |
| ___ | ___ | Make out shipping instructions (outgoing shipments) |
| ___ | ___ | Check tally sheets on various jobs |
| ___ | ___ | Keep daily attendance of employees |
| ___ | ___ | Make out accident reports for self or other workers |
| ___ | ___ | Work with records of time and time cards |
| ___ | ___ | Keep office manual or instruction book for employees |
| ___ | ___ | Send out notices of any type |
| ___ | ___ | Post notices |
| ___ | ___ | Act as notary public |
| ___ | ___ | Renew newspaper and magazine subscriptions |
| ___ | ___ | Compare copy (one copy with another copy) |
| ___ | ___ | Review unfinished business file |
| ___ | ___ | Check up on observance of various laws (in connection with work) |
| ___ | ___ | Secure government permits of various kinds (buildings, tax, etc.) |
| ___ | ___ | Protect valuable and confidential materials |
| ___ | ___ | Do work involving customs, tariff regulations, etc. |
| ___ | ___ | Take inventory |
| ___ | ___ | Revise stock list |
| ___ | ___ | Revise catalogs |
| ___ | ___ | Weigh items |
| ___ | ___ | Count items |
| ___ | ___ | Make change |
| ___ | ___ | Gather data to fill out questionnaires |
| ___ | ___ | Check personnel of committees (names, addresses, etc.) |
| ___ | ___ | Look up names and addresses |
| ___ | ___ | Compile periodic reports |
| ___ | ___ | Assemble and staple duplicated materials |
| ___ | ___ | Get information from various departments needed for correspondence |
| ___ | ___ | Keep records on maps or charts (sales records, etc.) |
| ___ | ___ | Keep record of territory assigned salesmen |
| ___ | ___ | Prepare agenda for meetings |
| ___ | ___ | Have legal papers recorded |
| ___ | ___ | Prepare signs, posters, or other graphic materials |
| ___ | ___ | Cut materials (scissors, paper cutter, etc.) |
| ___ | ___ | Change dates on rubber stamps or time stamp machine daily |
| ___ | ___ | Change calendar daily |
| ___ | ___ | Look over notes and memos for the day |
| ___ | ___ | Record daily shipments |
| ___ | ___ | Make notes for next day's work |

In the space below, list other clerical tasks performed but not listed above:

SECURING DATA:

YES NO

- | | | |
|-----|-----|--|
| ___ | ___ | Use dictionary |
| ___ | ___ | Use secretarial handbook |
| ___ | ___ | Use telephone directory |
| ___ | ___ | Use hotel reference books |
| ___ | ___ | Use U. S. Zip Code Directory |
| ___ | ___ | Use U. S. Postal Manual (postage rates, types of mail, etc.) |
| ___ | ___ | Use synonym books, thesaurus |
| ___ | ___ | Use city directory |
| ___ | ___ | Use Reader's Guide to Periodical Literature |
| ___ | ___ | Use <u>company</u> manuals |
| ___ | ___ | Use <u>office</u> manuals |
| ___ | ___ | Use <u>technical</u> manuals |
| ___ | ___ | Use timetables (R.R., airlines, etc.) |
| ___ | ___ | Use encyclopedia |
| ___ | ___ | Use almanac |
| ___ | ___ | Use atlas |
| ___ | ___ | Use library card indexes |
| ___ | ___ | Use newspapers |
| ___ | ___ | Use magazines |
| ___ | ___ | Use other reference books or manuals |
| ___ | ___ | Use maps |

In the space below, list other sources used in securing data that are not listed above:

MATHEMATICS:

YES NO

- | | | |
|-----|-----|---|
| ___ | ___ | <u>Use fundamental processes of arithmetic:</u> |
| ___ | ___ | addition |
| ___ | ___ | subtraction |
| ___ | ___ | multiplication |
| ___ | ___ | division |
| ___ | ___ | Add long columns of figures |
| ___ | ___ | Use fractions |
| ___ | ___ | Use decimals |
| ___ | ___ | Convert fractions to decimals |
| ___ | ___ | Convert decimals to fractions |
| ___ | ___ | Compute insurance premiums (life, medical, retirements, etc.) |
| ___ | ___ | Compute property and/or income taxes |
| ___ | ___ | Compute percentage problems |
| ___ | ___ | Compute dividends |
| ___ | ___ | Compute interest charges |

If you have performed these office tasks in your occupation in the last two (2) years while working for your present firm, check (✓) YES; otherwise, check (✓) NO.

MATHEMATICS continued

YES NO

- ___ ___ Compute trade and cash discount
- ___ ___ Compute amount and per cent of markup or loss
- ___ ___ Compute sales tax
- ___ ___ Convert figures to metric system
- ___ ___ Compute foreign monies figures
- ___ ___ Work with reciprocals

In the space below, list other mathematical tasks you perform that are not listed above:

FINANCIAL AND RECORDKEEPING TASKS:

YES NO

- ___ ___ Make journal entries (any type of journal)
- ___ ___ Make "General Journal" entries
- ___ ___ Make "Combined Journal" entries
- ___ ___ Make entries in special journals (Cash Receipts, Sales, Cash Payments, Purchases, etc.)
- ___ ___ Post (transfer) entries from journals to a ledger (group of accounts)
- ___ ___ Make entries only in journal(s) if business uses only journal(s), does not use any accounts as such
- ___ ___ Make entries directly to accounts if business does not use journals
- ___ ___ Work with subsidiary ledger (accounts receivable, accounts payable, etc.)
- ___ ___ Use ledger accounts with "balance" column (balance form)
- ___ ___ Actual bookkeeping or accounting work done at end of month or fiscal period. Do not check "YES" if your only task is to gather data for the statements, etc., or if you only type them.
- ___ ___ Prepare a Trial Balance at end of month or fiscal period (prove equality in ledger)
- ___ ___ Prove Worksheet
- ___ ___ Prepare Profit and Loss Statement (Income Statement)
- ___ ___ Prepare Balance Sheet
- ___ ___ Prepare Capital Statement
- ___ ___ Determine current ratio
- ___ ___ Determine acid-test ratio

FINANCIAL AND RECORDKEEPING TASKS continued

YES	NO	
---	---	Determine any other ratios
---	---	Prepare adjusting entries
---	---	Prepare closing entries
---	---	Prepare Post-Closing Trial Balance
---	---	Prepare reversing entries
---	---	Rule ledger accounts
---	---	Rule journals
---	---	Close ledger accounts
---	---	Record time clock data on payroll forms
---	---	Compute payrolls for employees
---	---	Calculate deductions (Income Tax, FICA, Insurance, Etc.)
---	---	Maintain individual employee's earnings records
---	---	Maintain payroll register (all employees listed)
---	---	Write checks for payroll
---	---	Make out withholding tax statements at end of year (W-2 forms)
<u>Keep records for state or Federal Government; pertaining to:</u>		
---	---	B & O Tax
---	---	FUTA Tax (Federal Unemployment tax)
---	---	FICA tax (Social security)
---	---	Income taxes
---	---	State unemployment taxes
---	---	State Industrial Insurance
---	---	Sales tax
---	---	Make out reports for state and/or Federal Government pertaining to taxes mentioned above
---	---	Work in connection with <u>other</u> state or federal taxes, licenses, permits, reports, etc.
---	---	Maintain file of W-4 forms
---	---	Keep records of sales exempt from tax
---	---	Keep books which supply data for income tax for company, trust, etc.
---	---	Prepare income tax return for company, trust, etc.
---	---	Systematize and record items deductible from income tax
---	---	Make lists of employees for income tax purposes (salaries, etc.)
---	---	Work with city and/or county tax statements
---	---	Keep records pertaining to employees belonging to union
---	---	Record stock count information in proper book (merchandise control)
---	---	Record inventory records in proper forms
---	---	Figure inventory (value)
---	---	Compute depreciation
---	---	Establish depreciation schedules for equipment
---	---	Work with accruals
---	---	Keep wage and sales comparison records
---	---	Keep wage and cost comparisons
---	---	Assemble and/or interpret cost data

If you have performed these office tasks in your occupation in the last two (2) years while working for your present firm, check (✓) YES; otherwise, check (✓) NO.

FINANCIAL AND RECORDKEEPING TASKS continued

YES NO

- | | | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Sell various goods or services |
| <input type="checkbox"/> | <input type="checkbox"/> | Take orders for various goods or services (in person or by phone) |
| <input type="checkbox"/> | <input type="checkbox"/> | Maintain price lists and make necessary changes |
| <input type="checkbox"/> | <input type="checkbox"/> | Post data on daily sales sheets by department or employee |
| <input type="checkbox"/> | <input type="checkbox"/> | Record cash register tapes |
| <input type="checkbox"/> | <input type="checkbox"/> | Record daily sales in unit control forms |
| <input type="checkbox"/> | <input type="checkbox"/> | Total weekly or monthly sales |
| <input type="checkbox"/> | <input type="checkbox"/> | Prepare salesmen's commission statements |
| <input type="checkbox"/> | <input type="checkbox"/> | Prepare vouchers for traveling expenses |
| <input type="checkbox"/> | <input type="checkbox"/> | Keep sales performance records |
| <input type="checkbox"/> | <input type="checkbox"/> | Make out monthly statements (for services rendered, goods sold, etc.) |
| <input type="checkbox"/> | <input type="checkbox"/> | Figure extensions |
| <input type="checkbox"/> | <input type="checkbox"/> | Decide charges on work done |
| <input type="checkbox"/> | <input type="checkbox"/> | Keep record of interest-due dates |
| <input type="checkbox"/> | <input type="checkbox"/> | Send out invoices for payment due (on contract, etc.) |
| <input type="checkbox"/> | <input type="checkbox"/> | Send out credit memos for goods returned, etc. |
| <input type="checkbox"/> | <input type="checkbox"/> | Make decisions on discounts allowable |
| <input type="checkbox"/> | <input type="checkbox"/> | Figure discount and maturity dates |
| <input type="checkbox"/> | <input type="checkbox"/> | Look up or check on financial ratings of customers or employees |
| <input type="checkbox"/> | <input type="checkbox"/> | Handle collection of outstanding debts (accounts receivable) |
| <input type="checkbox"/> | <input type="checkbox"/> | Age the accounts receivable |
| <input type="checkbox"/> | <input type="checkbox"/> | Keep track of bad debts |
| <input type="checkbox"/> | <input type="checkbox"/> | Make up weekly statement of over-drawn bank accounts |
| <input type="checkbox"/> | <input type="checkbox"/> | Prepare key-punched customer credit record of charges and payments for transmittal to computer center |
| <input type="checkbox"/> | <input type="checkbox"/> | Prepare cash register stock control tapes for transmittal to computer center |
| <input type="checkbox"/> | <input type="checkbox"/> | Prepare any other accounting data for transmittal to computer center |
| <input type="checkbox"/> | <input type="checkbox"/> | Write checks (for any purpose as a part of your job) |
| <input type="checkbox"/> | <input type="checkbox"/> | Sign checks |
| <input type="checkbox"/> | <input type="checkbox"/> | Endorse checks |
| <input type="checkbox"/> | <input type="checkbox"/> | Countersign checks |
| <input type="checkbox"/> | <input type="checkbox"/> | Give checks to employer for signature |
| <input type="checkbox"/> | <input type="checkbox"/> | Take care of checkbook and stubs |
| <input type="checkbox"/> | <input type="checkbox"/> | Take care of bankbook |
| <input type="checkbox"/> | <input type="checkbox"/> | Deposit checks and/or cash in bank or cashier's office |
| <input type="checkbox"/> | <input type="checkbox"/> | Reconcile bank statement |
| <input type="checkbox"/> | <input type="checkbox"/> | Cash checks |
| <input type="checkbox"/> | <input type="checkbox"/> | Write receipts |

FINANCIAL AND RECORDKEEPING TASKS continued

YES NO

- | | | |
|-----|-----|--|
| ___ | ___ | Prove cash daily |
| ___ | ___ | Keep cash account |
| ___ | ___ | Keep petty cash accounts |
| ___ | ___ | Make petty cash payments |
| ___ | ___ | Collect notes |
| ___ | ___ | Responsible for notes, renewals, drafts, etc. |
| ___ | ___ | Count money to verify cash register returns |
| ___ | ___ | Arrange with bank for funds to be wired or cabled |
| ___ | ___ | Purchase foreign exchange |
| ___ | ___ | Get letters of credit from banks |
| ___ | ___ | Purchase traveler's checks for employer |
| ___ | ___ | Compile statistical data |
| ___ | ___ | Chart data |
| ___ | ___ | Make financial graphs |
| ___ | ___ | Interpret financial figures into a simpler statement |
| ___ | ___ | Use voucher register |
| ___ | ___ | Use check register |
| ___ | ___ | Use insurance register |
| ___ | ___ | Make up budgets |
| ___ | ___ | Check bills and/or invoices (verify extensions, etc.) |
| ___ | ___ | OK bills of any kind |
| ___ | ___ | Keep current files of invoices and purchase orders |
| ___ | ___ | Prepare bids (for contract) |
| ___ | ___ | Make contract for supplies, services, etc. |
| ___ | ___ | Keep books and/or ledgers for any purpose |
| ___ | ___ | Act as cashier or teller |
| ___ | ___ | Prepare sales slips |
| ___ | ___ | Prepare personal income tax return (for your employer) |
| ___ | ___ | Make list of personal stocks, notes, collateral, etc. (employer's) |
| ___ | ___ | Take care of employer's personal insurance (car, life, etc.) |
| ___ | ___ | Make out household and/or personal checks for employer |
| ___ | ___ | Keep lists of employer's personal property up to date |
| ___ | ___ | Obtain credit cards for employer |
| ___ | ___ | Keep list of credit card numbers |
| ___ | ___ | Apply for group insurance (as an employee) |
| ___ | ___ | Make lists of contents of office safe and/or safe deposit box and keep it up to date |
| ___ | ___ | Check and mail stock certificates |
| ___ | ___ | Arrange for payment of dividends |
| ___ | ___ | Work on quarterly or annual dividends |
| ___ | ___ | Make dividend lists |
| ___ | ___ | Issue dividend checks |
| ___ | ___ | Make list of securities (for business) |
| ___ | ___ | Keep file of maturity dates of securities |

If you have performed these office tasks in your occupation in the last two (2) years while working for your present firm, check (✓) YES; otherwise, check (✓) NO.

FINANCIAL AND RECORDKEEPING TASKS continued

YES NO

- ___ ___ Secure quotations from brokers
- ___ ___ Buy stocks
- ___ ___ Sell stocks
- ___ ___ Figure premiums (insurance, etc.)
- ___ ___ Arrange for insurance policies
- ___ ___ OK monthly group insurance bills
- ___ ___ Figure insurance rates

In the space below, list other financial and recordkeeping tasks you perform but that were not listed previously:

EDITORIAL TASKS

YES NO

- ___ ___ Make arrangements for centralized department to duplicate materials
- ___ ___ Make arrangements for centralized department to bind materials
- ___ ___ Make arrangements for centralized department to print materials
- ___ ___ Prepare material for printer or publisher
- ___ ___ Check printer's "proof copy"
- ___ ___ Edit manuscripts
- ___ ___ Edit reports, bulletins, etc.
- ___ ___ Compile one report from numerous small ones
- ___ ___ Arrange for printed programs
- ___ ___ Translate letters, articles, etc., from foreign languages into English
- ___ ___ Translate letters, articles, etc., from English into foreign language
- ___ ___ Punctuate articles, manuscripts, etc.
- ___ ___ Edit letters dictated by employer
- ___ ___ Prepare pamphlets and catalogs
- ___ ___ Give news, information, etc., to reporters
- ___ ___ Summarize articles, reports, lectures, etc.
- ___ ___ Get information from library
- ___ ___ Compile bibliographies
- ___ ___ Edit magazine or paper (house organ, trade magazine, etc.)

EDITORIAL TASKS continued

YES NO

- Prepare posters for advertising
- Read legal rulings; current topics, books, etc.
- Gather data for reports
- Clip and collect magazine articles, newspapers, etc., of interest
- Take care of publicity items
- Keep scrap books of various items for newspapers or magazines
- Write advertisements of various kinds (circular letters, bulletins, newspaper advertising, etc.)
- Write copy for newspapers, magazines, etc.
- Help plan advertising campaigns
- Gather news for various papers, magazines, etc.

In the space below, list other editorial tasks you perform that are not listed above:

MEETING AND WORKING WITH PEOPLE:

YES NO

- Make engagements and appointments for employer
- Keep employer reminded of engagements, dates, things to do, etc.
- Follow up on written notices for meetings by telephone
- Coordinate with other personnel on various matters for employer
- Administer employment tests
- Interview and/or recommend applicants for employment
- Hire employees
- Instruct new employees (work procedures, job orientation, etc.)
- Teach training class of employees
- Reprimand employees
- Discharge employees
- Conduct "Exit" interviews
- Address a meeting of employees
- Plan work for one's self
- Plan work for others
- Decide on priority of work for self
- Decide on priority of work for others
- Distribute work among other employees (in a supervisory capacity)
- Supervise other employees
- Investigate causes of trouble between employees
- Check up on unfinished work of other employees
- Give directions for work to be done (as a co-worker or supervisor)

If you have performed these office tasks in your occupation in the last two (2) years while working for your present firm, check (✓) YES; otherwise, check (✓) NO.

MEETING AND WORKING WITH PEOPLE continued

- | YES | NO | |
|-----|-----|---|
| ___ | ___ | Arrange lunch hours or vacations for employees |
| ___ | ___ | Oversee workmen (carpenters, electricians, etc.) |
| ___ | ___ | Serve on committees within company |
| ___ | ___ | Act for your employer on committees |
| ___ | ___ | Round up people for meetings |
| ___ | ___ | Help with campaigns of various kinds |
| ___ | ___ | Help organize office or company committees |
| ___ | ___ | Render policy decisions on questions asked by members of office force |
| ___ | ___ | Counteract false reports which spread in an organization |
| ___ | ___ | Meet callers |
| ___ | ___ | Direct people to proper office or department |
| ___ | ___ | Get rid of cranks, beggars, and other undesirables |
| ___ | ___ | "Screen" visitors or people who want to see your employer |
| ___ | ___ | Make introductions |
| ___ | ___ | Hear complaints in office and over telephone |
| ___ | ___ | Give information in response to verbal inquiries |
| ___ | ___ | Handle service calls on equipment |
| ___ | ___ | Manage office |
| ___ | ___ | Approve (OK) customers' checks, charge purchases, etc. |
| ___ | ___ | Attend conventions, banquets, or meetings outside of company but relating to company business |
| ___ | ___ | Act as hostess at company-sponsored teas, coffee hours, parties, etc. |
| ___ | ___ | Assist in plans for entertainments, receptions, dinners, etc. |
| ___ | ___ | Consult with attorney, tax-examiner, auditor, etc. |
| ___ | ___ | Travel to make investigations of various kinds |
| ___ | ___ | Secure signers for petitions of various kinds |
| ___ | ___ | Confer with employer on policy, procedures, etc. |
| ___ | ___ | Make recommendations for improvements of office procedures, routines, etc. |
| ___ | ___ | Investigate references, personal or financial |
| ___ | ___ | Issue permits for various things |
| ___ | ___ | Select and/or invite speakers |
| ___ | ___ | Arrange itineraries for speakers, salesmen, etc. |
| ___ | ___ | Make arrangements for guests and visitors (hotel, entertainment, etc.) |
| ___ | ___ | Act as a guide to visitors |

In the space below, list other tasks you perform in meeting and handling people that are not listed above:

MISCELLANEOUS:

YES NO

- | | | |
|-----|-----|--|
| ___ | ___ | Dust |
| ___ | ___ | Clean and oil typewriter |
| ___ | ___ | Clean and oil other office equipment |
| ___ | ___ | Straighten up office |
| ___ | ___ | Select or order furnishings for office |
| ___ | ___ | Arrange physical layout of office, pictures, furniture, draperies, etc. |
| ___ | ___ | Arrange for disposal of wornout equipment |
| ___ | ___ | Dress windows (window displays) |
| ___ | ___ | Purchase flowers, fruit, books, gifts, etc., for office |
| ___ | ___ | Prepare or obtain coffee or refreshments for employer or his guests |
| ___ | ___ | Keep personal diary for employer |
| ___ | ___ | Keep employer's photographs and biographical information for publicity |
| ___ | ___ | Keep stock of employer's personal stationery, cards, etc., on hand |
| ___ | ___ | Purchase Christmas cards, valentines, birthday cards, etc., for employer |
| ___ | ___ | Send out Christmas cards for employer |
| ___ | ___ | Advise employer of illnesses, deaths, births, weddings, etc., of friends |
| ___ | ___ | Write letters of condolence and congratulation |
| ___ | ___ | Acknowledge letters of condolence and congratulation |
| ___ | ___ | Write suitable cards to accompany gifts, flowers, etc., sent by employer |
| ___ | ___ | Send out invitations |
| ___ | ___ | Acknowledge invitations |
| ___ | ___ | Help with decorations at meetings or conventions |
| ___ | ___ | Collect money from office employees for various purposes |
| ___ | ___ | Run errands |
| ___ | ___ | Shop for employer |
| ___ | ___ | Make arrangements for repairs on employer's personal property (car, etc.) |
| ___ | ___ | Prepare and keep up abstract book or file folder with excerpts and reprints of speeches, hints for speeches, data figures, illustrations, etc. |
| ___ | ___ | Collect stamps for employer, domestic or foreign |
| ___ | ___ | Assist with laboratory work |
| ___ | ___ | Make tracings for blueprints |
| ___ | ___ | Make blueprints |
| ___ | ___ | Trace maps |
| ___ | ___ | Keep in touch with legislative activity that bears on work |

In the space below, list other miscellaneous tasks you perform on the job but that are not listed above:

Your help is sincerely appreciated!

Appendix K

BODY OF LETTER SENT TO EMPLOYER UNITS
SELECTED AT RANDOM

Dear Sir:

You can help Washington Schools improve their programs for training office workers.

Washington State University, the State Board for Vocational Education, and the U. S. Office of Education are conducting a research project to update the business education curriculum.

To do that, we need information from office employees about the types of tasks they perform. We have a questionnaire which employees can check to provide that information. An employee can check the questionnaire in about 35 minutes.

To get useful results, we need information from office workers in various types and sizes of firms. Your firm is one that fits such a sample.

We hope that you will be willing to arrange for me to consult with a few of your office employees and ask them to fill out our questionnaire. I will phone you in the next few days to see if you can assist us in this educational service.

We realize that this will take some of your time and time of your employees. We make this request because this is a necessary means of improving the training of office employees.

Gratefully yours,

Appendix L

INSTRUCTIONS FOR THE DISTRIBUTION OF QUESTIONNAIRES

WSU-USOE Task Identification
Office Occupations
November, 1966

- I. Organize contact sequence in such a way that you do as little driving as possible between contacts. Certain types of businesses could be contacted on Saturdays. On a school day you could plan on one to three contacts possible before 5 p.m.
- II. Send out letter of introduction about one week before you plan to make the visit. (W.S.U. will supply the basic content.) You will need to identify the "inside address" portion and type the letters. Letterhead paper and envelopes will be furnished.
- III. Telephone a day or two before planned visit for an appointment.
- IV. Contact the owner, personnel manager, or whatever person has general responsibility over the employees.
 - A. Introduce yourself and explain who you represent.
 - B. Explain that his company was selected at random. Companies in all industrial classifications are being contacted on a stratified random basis. Eight hundred to 1,000 questionnaires will be distributed to all types of office workers.
 - C. Explain objectives of research
 1. Wide-scale assessment has never been attempted
 2. Need to up-date business education curriculum
 - a. Lack of time and money make it impossible for teachers and/or districts to do the job of keeping abreast that they would like to do.
 - b. New machines and technology change the office "picture" from year to year (data processing, etc.)
 - c. Need for statistically sound, up-to-date research on a basis for making curriculum decisions (what types of machines to buy, which filing systems most desirable to teach, how extensively shorthand is used, importance of business mathematics, etc.)
 - d. Solicit his cooperation by asking him to permit you to talk to the person(s) needed to complete the questionnaire.

1. Questionnaires to be completed preferably on company time (approximately 35 minutes needed)
 2. Person(s) could decline to complete the questionnaire (their choice)
- e. Your major "theme" should be related to the up-dating of business education curriculum in order to better prepare his future office workers.
 - f. Show a copy of the questionnaire to the boss explaining format and organization. (Our primary interest is in assessing office tasks.) (A simple check-type instrument--no extensive writing required.)
 - g. Random selection of needed person(s)
 1. Define "office workers" for him
 2. Determine total number of office workers in firm
 - h. Obtain the name(s) of the person(s) supervisor(s). Indicate that you will contact supervisor first in each case.
- V. Contact supervisor of each person selected at random.
- A. Introduce yourself and explain who you represent
 - B. Explain company's random selection
 - C. Explain objectives of research (briefly)
 - D. Explain random selection of the person selected
 - E. Seek his permission to ask the person if he/she would be willing to complete the questionnaire
- VI. Contact person selected
- A. Introduce yourself and explain who you represent
 - B. Explain company's random selection and his/her random selection
 - C. Explain objectives of research (somewhat briefly)
 - D. Show the person the questionnaire, explaining format and organization
 1. Simple check-type instrument relating specifically to tasks performed

2. No extensive writing asked for
 3. About 35 minutes needed to complete the questionnaire
- E. Ask person to complete questionnaire
1. Voluntary on person's part
 2. We need his/her help
 3. Smile and say please
- F. Explain the two critical factors pertaining to the questionnaire
1. Please respond to all questions--either yes or no
 2. It does not have to be a task performed as a regular part of their job to check yes. (The extreme case: If they have performed the task in the last two years while working for their present employer.)
- G. Hopefully, the questionnaire would be completed in the next 2-3 days and returned so it doesn't get lost.

VII. Method of Returning Questionnaires

- A. One- or two-person office. Give employee the return envelope supplied and ask him/her to forward the questionnaire to us
- B. Larger-sized organization (if the persons are in a centralized location).
1. If there is a personnel manager or office manager you have contacted, give him the return envelopes and request that he coordinate the return of the questionnaires. This tends to guarantee quick returns. Just ask the employees to turn in the completed questionnaire to Mr. X, and he will forward it to us.
- C. Larger-sized organizations (if decentralized operation). Use your own judgment.

VIII. Reporting Form

- A. Complete two copies (one carbon). One for your records, send the other to Ross Byrd, School of Education, Washington State University.
- B. You will be contacted as questionnaires are received.

APPENDIX M

INSTRUCTIONS FOR RANDOM SELECTION OF OFFICE EMPLOYEES

It is very important that office employees in this sample be selected at random. If you were simply to contact the personnel director of a company and ask him to give the questionnaire to some office workers, it is quite probable that he would give it to his secretary and any other secretaries close at hand. The results would show that most office workers do secretarial tasks. We want our survey to be truly representative of all office workers. This means we must distribute our questionnaires randomly.

To determine which office employee is to receive a questionnaire, use the following procedure:

1. Assign an identifying number to each employee. This can be done by sequentially numbering each employee on the list. If there is a large number of employees working for the particular company, you can assign an identifying number by page number and sequence on the page. An employee might be number 12 on page eight. His number would be 8-12.
2. Refer to your table of random numbers. There are 2,500 digits arranged in columns and rows. They are grouped five columns and five rows to a block. After you have sequentially numbered employees, you use only one column. If there are 10 to 99, you will need two columns. If you are identifying by page number and position on the page, use one column for page number and the necessary number of columns to cover the number of names listed on the page.
3. To determine where to start in the table, ask the personnel director (or whoever your company contact is) to think of a number between 1 and 50 and a letter between A and J. This will give you the coordinate of a single row and a block of five columns. You may select any combination of the five columns to give you the number of columns you need. For example: 1st, 2nd, and 3rd; or 2nd, 3rd, and 4th; or 3rd, 4th, and 5th.
4. The digits in the columns and rows you have selected represent the identifying number of the first one in your sample. In case this number does not represent any individual, simply go to the next row below your starting point. Follow the columns down the page until you are at the bottom and then to the next columns to the right. Select the numbers that represent identifying numbers of people on your list until you have selected as many as you need from that company.
5. Note that this procedure can be used even when not all employees on the list are office employees. You can assign an identifying number to all on the list but use only those selected who are office workers.

TABLE OF RANDOM DIGITS

	A	B	C	D	E	F	G	H	I	J
1	31820	96220	03272	26581	78097	72107	55619	26792	06097	39837
2	29382	37929	17134	73696	25562	01160	93459	20525	40682	02049
3	31732	37369	51306	93270	05700	18907	21848	25477	93051	75333
4	66178	13305	16612	59642	05363	70075	21446	9841	30626	53231
5	68967	63104	55412	60291	33018	83050	34498	96186	07377	84214
6	79065	82451	71937	06951	76103	54506	59585	66589	37083	65908
7	37376	68508	99304	79353	81625	03672	10824	37381	26202	94938
8	95938	92934	35466	49965	40003	27126	33750	92645	53154	58654
9	55216	10408	27310	36026	51011	38992	31137	04099	90320	16690
10	48647	23436	57051	40620	53999	04812	07334	68951	11154	27056
11	28656	18962	67973	00480	15666	12512	92129	52487	96247	54405
12	28974	80959	35743	09827	32176	45536	19462	53531	34605	64037
13	21649	39352	02802	07741	48996	70996	29783	43060	70957	71339
14	27765	77007	37198	22386	14664	44699	32064	39476	70361	84588
15	85928	81409	47569	63650	70406	38158	99977	50397	81640	60534
16	47152	61161	55650	59326	45632	05687	71413	19442	19295	51319
17	93726	47599	89215	92599	89339	61017	00142	45481	84572	53086
18	32838	41376	73172	87202	05075	77224	92348	12112	63250	91815
19	70486	82498	92822	10969	03000	08607	97309	20070	47863	33083
20	79488	92605	65000	56618	55878	93243	15252	78329	46009	42103
21	09208	85060	26710	82939	95725	89491	47604	79244	05028	95766
22	16939	07170	29552	29011	94767	79494	94381	67269	40614	32923
23	05335	51267	26154	51796	48400	06773	50640	33933	44343	50720
24	21345	30048	90614	09192	21860	85128	38253	89422	59672	41990
25	85339	00049	36076	14481	07938	11842	32976	54614	51277	89792
26	69745	73460	20811	75371	52268	80674	97094	45555	43638	87272
27	94174	75628	64919	09046	80142	93381	60246	82213	16110	83203
28	16518	52438	64749	46778	95875	27645	56539	86954	16867	55120
29	12066	64440	24460	56820	90778	27159	50936	30047	37308	50265
30	91696	32931	77526	40245	35086	12667	86708	69907	36043	29781
31	71104	33982	95397	98007	39251	03285	41941	50700	52141	28468
32	06451	89499	97397	87452	94446	64223	02958	02635	60893	01177
33	56140	97304	69970	28698	33440	37466	34077	46788	14641	43632
34	76933	81226	15337	01676	72421	84085	01044	63476	79337	16668
35	17284	31319	86622	45843	50783	79384	11531	62407	10411	84253
36	37488	03628	43494	31862	76045	55577	74199	14041	20115	31048
37	77765	38319	58683	60125	13182	77783	15034	86720	80690	46932
38	83826	08549	97184	46069	03011	23858	14451	31402	70233	06652
39	74514	47141	04583	29966	61762	12470	81578	42151	05470	57768
40	23751	27586	77320	67981	02370	54453	05313	52078	43382	05988
41	87899	42644	62412	10724	67503	17035	26854	59971	37938	40472
42	21018	58106	41902	04214	56040	89061	63966	91537	56888	64993
43	32752	47930	88466	47118	67965	24737	70448	02898	12417	44840
44	15726	89205	29248	80865	87163	83837	83213	45097	05133	57245
45	32583	08623	04384	44980	30841	20804	90509	49558	77569	07387
46	63887	07348	56384	43152	39906	15064	11557	52753	60304	39446
47	79519	70114	44634	21886	21823	32813	88713	10771	32044	19104
48	59577	12182	41503	13629	79996	81728	91859	90941	44187	16365
49	35683	73286	28939	48003	10264	01551	84204	25717	52587	90723
50	64079	32263	78436	38479	10279	50244	01414	35872	58851	55800

Appendix N

QUESTIONNAIRE REPORTING FOR:

Name & Address of Company (Employing Unit)	Owner, Personnel Manager, office manager, etc.	Phone Number Company (C) or Person's (P)	Total No. of office workers	Department or office person works in	Person's im- mediate super- visor	Person receiving question- naire	Returned

ERIC DOCUMENT RESUME

DATE OF RESUME

December, 1966

1. ACCESSION NO.		2. ERIC SATELLITE CODE	3. CLEARING HOUSE CONTROL NO.	FOR INTERNAL ERIC USE ONLY (Do Not Write In Space Below)	
4. SOURCE U.S. Dept. of Health, Education, and Welfare Office of Education, Bureau of Research Final Report (6/65 - 12/66)				DATE RECEIVED	
5. TITLE A Research Model for Identification of Task and Knowledge Clusters Associated with Performance of Major Types of Office Employees' Work. Project No. ERD-257-65				IS MICROFILM COPY AVAILABLE? (Check one) <input type="checkbox"/> Yes <input type="checkbox"/> No	
6. AUTHOR(S) Perkins, Edward A. Jr., & Byrd, F. Ross				IS DOCUMENT COPYRIGHTED? (Check one) <input type="checkbox"/> Yes <input type="checkbox"/> No	
7. DATE 12/66				HAS COPYRIGHT RELEASE BEEN GRANTED? (Check one) <input type="checkbox"/> Yes <input type="checkbox"/> No	
8. PUBLICATION 64		9. REFERENCES 14		DATE, NAME, AND COMPLETE ADDRESS OF AUTHORITY TYPE OF RELEASE	
10. REPORT/SERIES NO. 5		11. CONTRACT NO. OE-5-85-109			
12. PUBLICATION TITLE A Research Model for Identification of Task and Knowledge Clusters Associated with Performance of Major					
13. EDITOR(S) N.A. Types of Office Employees' Work					
14. PUBLISHER Dept. of Education, Wash. State U. Pullman, Wash.					
15. ABSTRACT (200 words max.) Purpose: To develop a research model that will enable investigators to identify (a) the actual major tasks performed by a representative sample of office workers within any geographical area; (b) the major knowledges required to perform those tasks; and (c) the essential combinations of "tasks and knowledge clusters," which will help educational curriculum planners develop instructional programs and materials that will maximize career-long occupational opportunity, competence, and choice.					
Method: (a) An office workers' population was identified by using Federal Census data and data from state governmental agencies. (b) With the assistance of university statisticians and electronic computers, a sample was selected in proportion to the number of office workers in five office-size categories within each major Standard Industrial Classification grouping. (c) A questionnaire composed of 600 office tasks was validated by 286 office workers and supervisors and by a jury of experts. (d) A structured procedure was developed for the distribution of the data-gathering instrument, analysis of data, and identification of knowledges associated with the performance of tasks.					
Results: The paradigmatic construction for a task-knowledge investigation is presented in the form of five flow charts.					
Implications: The findings of a study that utilizes this research model in a given region may be statistically generalizable to other regions if the proportion of office workers in the various cells (size of firm X in a given SIC) of the regional population matrixes is not significantly different.					
16. RETRIEVAL TERMS (Continue on reverse)					
Office occupations Model Clusters, task and knowledge Sample technique Population identification Questionnaire			Job analysis Jury technique		
17. IDENTIFIERS					
Vo-Tech Ed. P. and P. Project EPD-257-65					

Figure 3. ERIC Document Resume

INSTRUCTIONS FOR COMPLETING ERIC DOCUMENT RESUME

The resume is to be used for storing summary data and information about each document acquired, processed, and stored within the ERIC system. In addition to serving as a permanent record of each document in the collection, the resume is also the primary means of dissemination. The upper left corner of the form (fields 1-14) is designed to conform to descriptive cataloging standards set forth by the Committee on Scientific and Technical Information (COSATI). Read the following instructions and complete the resume as directed.

A. GENERAL INSTRUCTIONS:

1. Read each entry point. If any point is not applicable, place "N.A." in the appropriate field. Except for those which you are instructed to leave blank, all fields must be completed with either the required information or "N.A."
2. Enter date of completion of the resume in space provided in upper right corner.
3. Entry must fit into space provided; if necessary use standardized abbreviation as cited by the American Psychological Association Publication Manual. (Publication Manual may be obtained from the American Psychological Association, Order Department, 1200 17th Street, N.W., Washington, D. C. 20036.)

B. SPECIFIC INSTRUCTIONS:

- Field 1. **Accession No.:** Leave blank. A permanent ED number will be assigned to each report and attendant documentation records as they are processed in the ERIC system.
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16 RETRIEVAL TERMS (Continued)

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