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A Survey of Job Activities of Entry-Level Employees in Accounting/Bookkeeping/Recordkeeping Positions in Relation to the Michigan Vocational/Technical Program Performance Objectives for Bookkeepers with Implications for Secondary School Curriculum

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A SURVEY OF JOB ACTIVITIES OF ENTRY-LEVEL EMPLOYEES IN ACCOUNTING/BOOKKEEPING/RECORDKEEPING POSITIONS IN RELATION TO THE MICHIGAN VOCATIONAL/TECHNICAL PROGRAM PERFORMANCE OBJECTIVES FOR BOOKKEEPERS WITH IMPLICATIONS FOR SECONDARY SCHOOL CURRICULUM

by

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Kathryn R. Tomaszewski

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INTRODUCTION

Statement of the Problem

The purpose of this study is to provide sufficient data for determining whether the accounting curriculum in the Grand Rapids Public Schools is providing the training needed by entry-level accounting/bookkeeping/recordkeeping employees for the job tasks defined in the Michigan Department of Education Recommended Minimum Vocational/Technical Program Performance Objectives for Bookkeepers, and to provide data for possible revision of the curriculum.

Questions to be Answered

The major questions to be answered by this study are:

1. What activities are engaged in by entry-level employees in accounting/bookkeeping/recordkeeping positions that are included in the high school curricula, especially in the accounting course?

2. What activities engaged in by entry-level employees in accounting/bookkeeping/recordkeeping positions are not included in the high school curricula, especially in the accounting course?

3. What differences, if any, will be found in work activities in different sizes and types of businesses?

4. What specific types of equipment are used by entry-level employees in accounting/bookkeeping/recordkeeping positions?

5. When a computerized accounting system is used, what understanding of accounting concepts is required in entry-level accounting/bookkeeping recordkeeping job activities?

6. What are the effects of computerization on job opportunities in accounting/bookkeeping/recordkeeping and what are the implications of those effects for high school accounting curricula?

7. Are the activities in 1 consistent with the performance objectives for bookkeepers as outlined and adopted by the Michigan State Department of Vocational/Technical Education?

8. What career paths might be open to entry-level employees in the accounting/bookkeeping/recordkeeping field?

Significance of the Problem

Historically, in the United States, the main objective of bookkeeping instruction has been the development of specific skills for employment.

> From the Colonial period to date, instruction in some aspects of bookkeeping and accounting has always been considered the backbone of any educational program intended to prepare individuals for business employment. The past 200 years have witnessed the extension of accounting education at all levels in public and private schools, as well as a diversification of course offerings, an increased professionalization of accounting and accounting education, and more recently, a growing concern for an adequate response to the impact of automation on accounting procedures.[1]

Although colonial schools were established as early as 1668 to provide formal opportunities for learning, bookkeeping was mentioned as

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[1]Padamakar M. Sapre and Roscoe D. Perritt, "A Historical Development of Accounting and Data Processing," Business Education, Yesterday, Today, and Tomorrow, Fourteenth Yearbook (Reston, Virginia: National Business Education Association, 1976), p. 1.

early as 1635 when a Mr. Morton taught students to "read, write, and cast accounts" in Plymouth, Massachusetts.[1] The first public high school in the United States, English High School in Boston, taught bookkeeping soon after it opened in 1821, and other schools later included it in their curriculum.[2] Some young people sought apprenticeships with established businessmen and learned bookkeeping "on the job."[3]

As the economic system expanded and businesses increased in size, the need for more accountants or bookkeepers increased and private business schools developed to train office workers. Employers came to depend on the private business schools to furnish them with workers.[4]

After 1900, public secondary schools began to train increasingly large numbers of bookkeepers. Comparative enrollment figures for business courses indicate that only typing now surpasses accounting/bookkeeping classes in popularity in public secondary schools.[5] In

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[1]Walter Scott Monroe, Development of Arithmetic as a School Subject, Department of Interior, Bureau of Education, Bulletin No. 10 (1917), p. 22. As cited by Edwin G. Knepper, "Historical Development of the Business Curriculum," The Changing Business Education Curriculum, Fourth Yearbook (Somerville, New Jersey: Somerset Press, The Eastern Commercial Teachers Association and The National Business Teachers Association, 1947), p. 18.

[2]Jessie Graham, The Evolution of Business Education in the United States and Its Implication for Business-Teacher Education. (Los Angeles: University of Southern California Press, 1933), p. 22.

[3]Sapre and Perritt, op. cit., p. 2.

[4]loc. cit., p. 3.

[5]Lewis D. Boynton, Methods of Teaching Bookkeeping/Accounting, (Cincinnati: South-Western Publishing Company, 1970), p. 7.

1948-49, a total of 472,163 students were enrolled.[1] In 1970-71, the number of students enrolled in accounting/bookkeeping classes had risen to 623,059,[2] an increase of 31.9%.

Prior to World War II, most bookkeeping in business was done by the manual process of double-entry system. The full responsibility for keeping the business and financial records of the employer were taken care of by the bookkeeper. In most situations, the bookkeeper probably started with a basic bookkeeping education (from high school or private business school), often beginning at the lowest level of employment in the firm. He/she would advance through the various jobs and experiences and eventually would become the full-charge bookkeeper, able to handle all phases of the accounting work.[3]

With the introduction of computers and electronic data processing, the duties of bookkeepers have changed drastically. The bookkeeper's job has been shattered: part of it has become merely clerical in nature and part has become the profession of accountancy. The requirements of electronic data processing (EDP) have necessitated a simplification of tasks, but the volume of work has increased the number of tasks and the number of people involved.[4]

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[1]Boynton, op. cit., p. 27.

[2]U.S. Department of Health, Education, and Welfare. Digest of Educational Statistics. (Washington, D. C.: Government Printing Office, 1974). As cited by Margaret C. Reap, "Bookkeeping--Here from the Beginning," The Journal of Business Education, 51:7 (April 1976), p. 321.

[3]Boynton, op. cit., pp. 4-6.

[4]ibid.

Over the years, the distinction between various jobs in the accounting area has become sharper. The division of labor and the specialization of operations result in definitely defined competencies for each operation. At the top is accountancy as a profession. But for every accountant, there are perhaps a dozen people performing other clerical functions. The Dictionary of Occupational Titles maintains a clear distinction between persons engaged in the profession of accounting and those engaged in occupations of a clerical nature, regardless of the job title used.[1]

Hanna[2] commented on these changes in relation to changes in high school teaching:

> Major changes have taken place in business procedures. Machine recording has largely replaced manual recording. The computer is changing the concept of what constitutes a set of records. The number of office workers who actually keep pen-and-ink records is decreasing. Yet more data is being processed, and more workers are involved in some phase or other of data processing. The importance of bookkeeping has decreased.

Secondary school programs in bookkeeping have not yet fully reflected these occupational changes. Most schools continue to try to meet the needs of the old full-time bookkeepers, ignoring the division of labor which has taken place in most accounting systems.

Woolschlager[3] made one of the most effective criticisms of high school accounting/bookkeeping in 1964, saying that publishers and

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[1]Boynton, op. cit., p. 7.

[2]Marshall J. Hanna, "The New High School Accounting Course," Business Education World, 49 (February 1969), p. 9.

[3]Ruth Woolschlager, "High School Bookkeeping - As It Was, So Shall It Always Be? A Fable," Business Education Forum, 18:6 (March 1964), pp. 19-20.

teachers have changed the content of the bookkeeping course very little, ignoring the businessmen's contributions and the research showing need for less stress on mechanics of recording and more emphasis on principles and economic concepts behind accounting practices and business management.

Tonne[1] is outspoken in his criticism of high school programs in accounting/bookkeeping:

> . . .How much of traditional bookkeeping is still needed? To what extent has double-entry bookkeeping changed to control accounting? How are financial records maintained? By the type of double-entry bookkeeping we teach? Rarely, and in those rare cases, not performed by recent high school or community college graduate. Yet the kind of bookkeeping we teach (now called accounting) could with little adaptation be taught with a text of the year 1900.

Following an extensive survey of accounting/bookkeeping entry-level employees in New York City and upstate New York, West[2] concluded that high school bookkeeping instruction should be limited to the actual duties of entry-level employees, and that preparation of bookkeepers/accountants should be left to further education and job experience. He says that conventional high school instruction goes far beyond what employers want or need from entry-level employees and far beyond what the entry-level employees need to complete their job duties.

As indicated by research, the traditional high school curriculum serves very little purpose for initial job entry. Clerks now perform

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[1]Herbert A. Tonne, "Curriculum Lag in Business Education," The Journal of Business Education, 49 (April 1974), p. 273.

[2]Leonard J. West, Survey of Entry-Level Bookkeeping Activities in Relation to the High School Bookkeeping Curriculum, Research Report No. 73-1. (New York: Institute for Research and Development in Occupational Education, City University of New York, 1973), pp. 190-193.

most entry-level bookkeeping tasks without any previous specialized school training with on-the-job training seeming to be adequate. Most people who work in accounting/bookkeeping/recordkeeping jobs take college courses in accounting when they feel the need for further training for advancement.[1]

The Occupational Outlook Handbook, 1978-79 Edition,[2] states that bookkeeping workers numbered almost 1.7 million persons in 1976 and that thousands of job openings for bookkeepers are expected every year through 1985. About 90% of the workers are women. Although job openings are numerous, bookkeeper employment is expected to grow slowly because the occupation is large and turnover high. The high turnover, which is due to a need to replace workers who die, retire, or stop working for various reasons, increases promotional opportunities for the incumbent employee who is properly trained for advancement. Entry-level workers who start doing routine recording tasks, machine operation, typing, cashier tasks, or as general office assistants, may advance to positions such as office or division manager/department head, accountant, or similarly named positions.

Business educators face the challenge of preparing students for initial employment (entry-level positions). What shall be taught? Is the proper way to determine a course content to ascertain what is needed by the graduate as he goes to the job? When those needs have been

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[1]Reap, op. cit., p. 323.

[2]U. S. Department of Labor, Bureau of Labor Statistics. Occupational Outlook Handbook, 1978-79 Edition. (Washington, D. C.: U. S. Government Printing Office, 1978), pp. 91-92.

determined, will educators know whether or not they are teaching to meet those needs? Do business educators need to revise their concept of the accounting/bookkeeping course as it relates to present business practices and procedures? Should they try to teach the student the skills he will need to advance from the entry-level position?

In an attempt to provide leadership in the field of vocational education, the Michigan Department of Education planned a broad attack and began producing performance objectives for the vocational/technical program as early as 1972.[1] Although the program covered multiple phases, the outcomes were batteries of performance objectives created by groups of teachers, which were evaluated by advisory committees made up of representatives of business and industry, as well as other teachers. Before being officially adopted, these performance objectives were reviewed by local teachers and administrators within each district and revisions made. Each local district had the option either to adopt the state's recommended performance objectives or to create their own set and submit it for approval. Bookkeeping was one vocational area for which a set of performance objectives was written in Michigan (See Appendix D).

If accounting/bookkeeping instruction in high schools is construed to be vocational education, it must have as its primary objective preparation for immediate employment after the student leaves school.

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[1]Adele F. Schrag, "The Status of Behavioral Objectives in Business Education," Evaluation and Accountability in Business Education, Sixteenth Yearbook, National Business Education Association (Reston, Virginia: National Business Education Association, 1978), pp. 31-32.

The content of the accounting/bookkeeping/recordkeeping curricula, then, should coincide with the requirements for entry-level positions in accounting/bookkeeping/recordkeeping available to the graduates of that curricula. The data provided by this study should help to determine whether, in fact, the Grand Rapids Public Schools are providing the training needed for accounting/bookkeeping/recordkeeping entry-level jobs. The data collected by this study should also help to determine whether the performance objectives adopted by the Michigan Department of Education for bookkeepers are realistic in terms of jobs available for entry-level accounting/bookkeeping/recordkeeping positions.

Limitations of This Study

The data for this study has been collected from businesses in the metropolitan Grand Rapids, Michigan area. The size of the companies selected for this study needed to be of sufficient size to employ entry-level workers. For this reason, manufacturing firms employing between 250 and 1,000 total employees were selected as the source of data.

The study was to be limited to at least fifteen and not more than twenty business firms. The data was collected from fifteen of the Grand Rapids area businesses by means of a questionnaire-interview conducted by the writer. Fifty-one employees were interviewed.

It is anticipated that the eight questions listed will provide sufficient data to determine whether the Grand Rapids Public Schools are providing the training needed for entry-level workers in accounting/bookkeeping/recordkeeping positions. It is not the purpose nor intent

of this study to suggest or construct a modified curricula, but only to provide a base of information for that purpose.

Definition of Terms

Accounting

Accounting is a profession including the work of persons who have been trained to interpret the meaning of business transactions and business records; to audit accounts and records; and to advise and supply help in systematizing the kinds of accounts, forms, books, and records best suited for individual businesses. Some accountants are specialists in various fields, such as estate accounting, tax accounting, cost accounting, and government accounting.[1]

Bookkeeping

Bookkeeping is usually considered an occupation and includes the work of employees who are concerned with the whole or major picture of the firm's business transactions, not just parts as in recordkeeping. Most bookkeepers must know how to complete records for all parts of the bookkeeping/accounting cycle and the principles underlying these records.[2]

Recordkeeping

Recordkeeping includes the work of accounting clerks variously known as posting clerks, entry clerks, payroll clerks, and billing

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[1]Boynton, op. cit., pp. 10, 317.

[2]loc. cit., pp. 9, 317.

machine operators. These employees are dealing with only one segment of the accounting cycle, and ordinarily do not need to understand the other functions of the bookkeeping/accounting cycle in order to perform their job activities.[1]

Accounting/bookkeeping/recordkeeping position

As used in this study, accounting/bookkeeping/recordkeeping position will refer to a clerical position within the accounting department of a business.

Data processing

Data processing is the recording, sorting, classifying, calculating, summarizing, and reporting of facts.[2] It may also be defined as the manipulation of unorganized facts about business operations to obtain organized useful information.[3]

Automated data processing

Automated data processing is the processing of data by machines, usually electronic, and is commonly called computerized or electronic data processing (EDP).

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[1]Boynton, op. cit., 9, 316.

[2]Robert M. Swanson et al. Century 21 Accounting, Second Edition. (Cincinnati: South-Western Publishing Company, 1977), p. 6.

[3]David H. Weaver et al. Accounting 10/12. Third Edition. (New York: Gregg Division, McGraw-Hill Book Company, 1977), p. 434.

Computerized accounting

Computerized accounting is keeping accounting records by means of machines and equipment that operate automatically.

Performance objective

A performance objective is a description of what a learner should be able to do when he has learned a skill or acquired a certain understanding and it includes the standards for measuring the learner's performance.

Vocational or occupational office education

Vocational office education is that body of subject matter that provides practical experience organized into programs of instruction for pupils to prepare for and achieve career objectives in their selected office occupation.[1]

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[1]"Guidelines for Office Education Programs in Michigan," Bulletin of Michigan Department of Education, Vocational Education and Career Development Service (January 1972), p. 1.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

This chapter is concerned with reviewing research and professional literature related to the study. A number of useful research studies dealt with the analysis of office tasks or duties performed by office employees and/or office education students. This area of business education research has been one of continual emphasis for many years. The professional literature dealt with the changes in business procedures, school preparation for employment, and the need for curriculum revision in the accounting/bookkeeping/recordkeeping area.

Related Research

A very early study, directed by Nichols (1927)[1] was designed to assess and analyze the work performed by office employees. This was the first study found to relate general facts pertaining to duties and responsibilities of clerical office employees to business education courses. Nichols used a total of 3,400 clerical workers employed in 54 business organizations located in 16 states, with a wide variety of office types. He gathered data pertaining to the tasks and duties performed by clerical workers, using questionnaires and interviews, ending with forty-eight tasks which he arranged in descending order of frequency of performance.

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[1] Frederick G. Nichols, A New Conception of Office Practice, Harvard Bulletin in Education, No. XII. (Cambridge, Massachusetts: Harvard University Press, 1927).

The specific conclusions which are related to this study indicated that there were certain well-defined clerical jobs for which training should and could be given, that existing high school courses were not adequately preparing youth for specialized office jobs, that there was little relationship between the quality of clerical work being done by office personnel and the training they had received, and that specialized clerical training should be a part of the high school office program.

A number of more recent studies have reached the same conclusion: school learning does not meet employment needs, either because it has been too advanced or of the wrong type of instruction.

Spanswick (1967)[1] tried to identify a number of manual bookkeeping jobs for which experienced and non-experienced employees with one year of high school bookkeeping were hired, and examined the nature of the activities these employees performed in relation to their training and/or experience. Spanswick found that most firms he investigated in the New York and Chicago areas were unwilling to hire a person with only one year of bookkeeping in high school unless that person also had some job experience in the bookkeeping field. In most cases, these people had to enter the bookkeeping field through a clerical non-bookkeeping job. Spanswick found that employers who were not convinced that the usual one-year course in high school bookkeeping is effective in preparing persons for manual bookkeeping jobs commented that the

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[1]Ralph Sterling Spanswick, A Study to Determine the Qualifications and Skills Desired, Accepted, and Actually Used in Manual Bookkeeping Jobs Which Were Listed in Chicago and New York City Newspapers During the Months of May and August 1966 (Unpublished doctoral dissertation, Northern Illinois University, 1967).

teaching in high school bookkeeping is not effective. Workers who had taken only a one-year course in high school bookkeeping stated that their job experience rather than their high school training had taught them to handle the job tasks performed in their work.

Luxner (1970)[1] examined the factors affecting the employability of vocational bookkeeping students graduating from Pittsburgh high schools and found that only 6 of the 89 graduates responding (6.7%) were able to find employment in entry-level bookkeeping positions. Other positions obtained by 7.9% of the respondents were in the Dictionary of Occupational Titles job family of Computing and Account Recording. An additional 18% were employed in office positions where at least 25% of their time was devoted to bookkeeping tasks. Therefore, a total of 32.6% were involved in the utilization of their bookkeeping training. The description of the bookkeeping tasks performed on their jobs established the fact that no skill was required which had not been developed in the first year of bookkeeping. Of the students who were unemployed, 86.7% stated it was because business wanted experienced workers as bookkeepers.

Luxner concludes that

> . . .as a vocational subject, advanced bookkeeping, taught in the traditional method which includes the making of complicated entries, such as closing or adjusting entries, and the manual completion of partnership and corporation practice sets, is indefensible. . .It meets neither the job requirements for accounting clerks nor accountants.[2]

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[1]Lois A. Luxner, Factors Affecting the Employability of Vocational Bookkeeping Students. (Doctoral dissertation, University of Pittsburgh, 1970. University Microfilms No. 71-8003).

[2]loc. cit., pp. 145, 156.

Luxner recommends that the first year of bookkeeping emphasize the mastery of concepts that apply to any technique, rather than the mastery of manual techniques. Her recommendation for a second year of bookkeeping would be a program with the basic objective of skills at "the proficiency level in the placing of data or information on paper, film, tapes, or other media."[1] The vocational bookkeeping program should be augmented by an intensive clerical training program which will emphasize the fundamental business skills in order to prepare the student to meet entry-level requirements for general clerical positions.

A Detroit study conducted by Kushner (1970)[2] led him to conclude that since none of the Detroit high school graduates surveyed had secured entry-level jobs classified as bookkeepers or straight-copy typists, the school curriculum should be adjusted to the needs of business. In another area of this study, employers were asked to evaluate a list of qualities desired in an entry-level employee. Of the twenty qualities evaluated, the most sought after by employers were dependability, accuracy in performing operations, and ability to follow directions.

A comprehensive study by Frame (1971)[3] was not limited to the accounting/bookkeeping area. The purpose of his study was to determine

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[1]Luxner, op. cit., p. 147.

[2]John Kushner, A Vocational Profile of the High School Graduate with Implications for Business Education. (Detroit: Wayne State University, Doctoral thesis, 1970. University Microfilm 71-17278).

[3]Terry M. Frame, The Relationship Between Tasks Performed by Selected Office Employees and Office Education Students. (Doctoral dissertation, Northern Illinois University, 1971. University Microfilm 71-29818).

the relationships which existed between office tasks performed by first- and second-year office employees and by high school students in vocational office education classes. The study was conducted among 166 office employees with less than two years of experience and 448 Arizona public school students about ready to graduate in the office education curriculum.

In the accounting and computing occupations surveyed, Frame found that statistical comparisons provided evidence that 14 of the 600 office tasks included in the study were performed by significantly higher percentages of office employees than by office education students in this area. He also found that significantly higher percentages of students than office employees had performed 37 of the 600 tasks included in the study.

Frame's conclusions most applicable to this study were that a large number of tasks commonly performed by first- and second-year office employees are not commonly performed by high school students enrolled in vocational office education courses. Further, he found that many office tasks commonly performed by high school students in office education classes are not commonly performed by office employees, including those in the financial and recordkeeping task cluster. Frame concludes, because of this, that an apparent need exists to increase the percentages of office education students who perform the most common office tasks by revising the curriculum to include the office tasks omitted and to eliminate instruction in the tasks not often performed by office employees.

Buckley (1972)[1] conducted a study in the Atlanta, Georgia area among 100 firms for the purpose of determining the availability of employment in areas of bookkeeping, secretarial, and data processing positions requiring knowledge of bookkeeping but no higher education or work experience. He concluded that high school graduation is the prime educational requirement in that geographic area and that most businesses will hire a high school graduate providing he/she has taken a course in bookkeeping or has had work experience. He found that 48% did not require high school bookkeeping if the prospective employee had previous work experience. He found that secretaries, clerical workers, and data processing workers were not required to have bookkeeping training. Firms which required bookkeeping training were not concerned whether it had been one or two years training in high school. Buckley found that larger firms were using automated data processing equipment in their accounting systems, but 62% of the firms he surveyed had no data processing positions.

The major purpose of West's[2] comprehensive study in 1973 was to provide a basis for potential modification of the high school courses of study in recordkeeping/bookkeeping/accounting to bring them into close accord with the actual job activities of entry-level bookkeepers and accounting clerks. His data was gathered primarily in New York City, with some from upper New York State cities. His findings showed

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[1]Dale Buckley, Investigation of the Availability of Employment Requiring a Knowledge of High School Bookkeeping. (Doctoral thesis. Atlanta: Georgia State University, 1971). As summarized by Buckley in GBEA Armchair Bulletin III (Spring 1972), pp. 1-2.

[2]West, op. cit.

employers agreeing that high school accounting/bookkeeping/recordkeeping instruction goes far beyond their needs for beginning employees. Previous high school training is seldom an employment requirement for entry-level employees in clerical accounting/bookkeeping positions, and even those with previous high school training reported their on-the-job training contributed more to their ability to perform their job activities than did their previous high school accounting/bookkeeping classes. He further found that the job duties and responsibility levels of those with no school training in accounting/bookkeeping/recordkeeping were no different from those with only high school training. Generally, job responsibility and job promotion depended on satisfactory work experience, post-high school classes, and general ability, not on high school accounting/bookkeeping instruction.

The effects of computerization was an area in his investigation. West found that use of the computer in accounting systems is widespread in larger firms, and that its effects are to reduce the need for understanding accounting/bookkeeping concepts, since each employee deals with only a small segment of the accounting cycle. He further found that the computerized record forms bear little resemblance to the textbook forms learned in school, and there are variations between the school and job terminology.

He found little interrelationship between data processing instruction and accounting/bookkeeping/recordkeeping instruction.

> The curriculum in data processing that is offered in some of the high schools seems to presuppose a clear demarcation between bookkeeping and data processing personnel--in that the DP curriculum does <u>not</u> deal with the concepts that underlie

> financial recordkeeping (journalizing, posting, etc.). That demarcation appears to be fictitious--applicable, if at all, only to some of the very largest employers. Instead, our own survey data show overwhelmingly that, when ADP is in effect, most bookkeepers are partly involved in it; likewise, some data processing personnel require conceptual knowledge of bookkeeping while others do not. There is no clear line between the job requirements of bookkeepers and those of data processors who handle financial recordkeeping information.[1]

West's conclusions that his various findings demonstrate a need for a major overhaul of the content and methodology of high school recordkeeping/accounting/bookkeeping instruction may be explained by a major generalization of the entire study. In his own words:

> Only a modest portion of the activities of entry-level bookkeepers appear to require an understanding of the concepts particular to the maintenance of financial records, and the applicable concepts are substantially more modest than those that prevail in high school bookkeeping instruction in this country.[2]

Summary of related research

Much of the related research has dealt with the preparation of high school students for employment, and has shown that school learning and training often do not meet employment needs of business. The high school graduate may take a job for which he/she is over-prepared, or, conversely, for which he/she has had no preparation. On-the-job training seems effective for a large number of entry-level jobs.

Changes in technology have caused changes in office procedures, but in many cases these changes have not yet been reflected in the school curriculum.

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[1]West, op. cit., p. 5

[2]West, loc. cit., p. 188.

Most researchers agree that the school curriculum must be adjusted to meet employment needs of business.

Related Journal Articles

Many professional journal articles reflect the newer developments in business procedures. Most writers believe that changes should be made in the traditional accounting/bookkeeping course, but not all agree what the changes should be. Most also agree that the accounting curriculum must include instruction in automated data processing, but are not in agreement about the best way to incorporate it into accounting/bookkeeping courses.

In discussing future projections in vocational education for bookkeepers and related workers, Anderson (1968)[1] says that educators are faced with the challenge of providing educational experiences for prospective employees to succeed in an era of constant change. She believes

> . . .New employees need a different type of education. The narrow training emphasizing how to perform sample tasks must be replaced by a broad educational program that stresses competency built upon understanding and application of business principles. The purpose of the vocational business curriculum must be to provide a program that will educate students to function efficiently in the modern office.

Hanna's (1969)[2] comments on the major changes taking place in business procedures have been cited in Chapter I (see page 5). He concludes that analysis of employment demands indicates that the high school

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[1]S. E. Anderson, "Vocational Education for Bookkeepers and Related Workers - Projections for the Future," Business Education, An Evaluative Inventory, Sixth Yearbook (Washington, D. C.: National Business Education Association, 1968), p. 73.

[1]Hanna, op. cit., pp. 9-11, 23.

course should not be bookkeeping-oriented, but should develop an understanding of how businesses process and use accounting data.

Hanna writes that the traditional course deals mainly with recording and reporting of data, while most accounting/bookkeeping positions today involve the capturing, classifying, and organizing of data. The methods of reporting data are changing with the increased use of computers, and the higher-level employees (accountants, management) are interpreting and using the reports and financial statements which the computer prints out.

Wunsch (1976)[1] believes the primary objective for high school accounting is for students to acquire knowledge, skills, and attitudes needed for employment within a variety of careers in the business world, saying a student cannot learn to be a full-charge bookkeeper with one year of accounting, but the course can serve as a valuable background for careers as a salesperson, stenographer, payroll clerk, secretary or general office clerk, purchasing clerk, accounts payable or receivable clerk, order clerk, billing clerk, bookkeeping machine operator, or inventory clerk. "Training in accounting," says Wunsch, "should assist students in developing habits that will make them more employable and that will enhance their chances for promotion."

Reap (1976),[2] tracing the historical progress of bookkeeping instruction, says

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[1]Michael R. Wunsch, "Issues in Teaching Accounting," Business Education - Yesterday, Today, and Tomorrow, Fourteenth Yearbook (Reston, Virginia: National Business Education Association, 1976), p. 143.

[2]Reap, op. cit., p. 323.

> Research clearly indicates that the traditional high school curriculum in bookkeeping serves little purpose for initial job entry. Most entry-level bookkeeping is being performed by clerks without prior specialized school training; on-the-job training seems to be adequate; and most bookkeepers who feel the need for further training for advancement, take college courses when the need arises.[1]

Further support for this position is given by Binnion and Thomas[2] in a discussion of instructional objectives evaluation of accounting/bookkeeping/recordkeeping. They suggest that the learning activities must be based upon the needs of the beginning office jobs, saying that the primary function of high school business education is the preparation of students for entry-level positions in business, industry, government, etc. They cite research showing that true accounting jobs are filled by those who normally have some sort of postsecondary education, but that accounting jobs are not filled by the recent high school graduate who has only entry-level skills. They indicate that it is the responsibility of the teacher to plan the curriculum so that it will provide for the needs of the student and the community.

There are those who believe vocational accounting/bookkeeping instruction must be more specific and task-oriented. Iskra (1972)[3] says, "Entry-level requirements for high school graduates seeking office

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[1]Reap, op. cit., p. 323.

[2]John E. Binnion and Edward G. Thomas, "Evaluating Instructional Objectives in Recordkeeping/Bookkeeping/Accounting," Evaluation and Accountability in Business Education, Sixteenth Yearbook (Reston, Virginia: National Business Education Association, 1978), pp. 213-224.

[3]John Iskra, Jr., "Accounting," Changing Methods of Teaching Business Subjects, Tenth Yearbook (Washington, D. C.: National Business Education Association, 1972), pp. 160-166.

employment show the need for segments of the accounting curriculum rather than a complete knowledge of accounting." Iskra advocates seeking advice of the business community in planning instruction, indicating that the use of advisory committees from the business community is mandated by the Vocational Education Act (1963). Curriculum plans must involve employers because accounting instruction closely related to data processing problems is tangent to many jobs.

Buckley (1972)[1] favors discovering the tasks and duties performed by bookkeepers on the job through interviews and sending questionnaires to bookkeepers and office managers of local businesses and then making these specialized requirements a part of classroom instruction.

A similar system of collecting information from local businesses was advocated by McKitrick (1974)[2] in his discussion of the preparation of specialized materials for training an accounts receivable clerk. He suggests that local businessmen favor this type of instruction because they find that beginning employees who have completed it will not need extensive on-the-job training before they become productive workers.

The effects of automation were discussed by Haga (1967).[3] Routine bookkeeping tasks were the first to be automated, not only by means of punched-card equipment, but by office machines of all kinds.

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[1]Dale Buckley, "Tasks and Duties Performed by Bookkeepers," Business Education Forum 27:3 (December 1972), pp. 16-17.

[2]Max O. McKitrick, "Materials for Training Specialized Accounting Clerks," Business Education Forum 28:4 (January 1974), pp. 44-45.

[3]E. J. Haga, "What Automation Means for Bookkeeping," Selected Readings in Business and Office Occupations, Fifth Yearbook (Washington, D. C.: National Business Education Association, 1967), pp. 55-62.

The main effect of this continuing process of automation has been a splintering of total systems into various procedures; such as Accounts Receivable or Payable, which can be handled rather mechanically by clerks having no detailed knowledge of the complete accounting/bookkeeping cycle. Haga believes an average high school business graduate would have a hard time securing one of the few full-charge bookkeeping positions still available.

Based on a research study by Werner, he and Gryder (1973)[1] advocate greater emphasis on the integration of data processing with accounting instruction. Employment requirements of business firms are affected by the electronic computer since the computer is doing the work previously done by many accounting clerks. Werner and Gryder say these developments require that individuals employed in accounting and clerical occupations understand the theory of accounting and be able to interpret the reports produced by the computer.

Evidence is increasing daily, says Morrison (1977)[2] that computers are becoming a vital component of office operations, both large and small. He says this trend indicates a change in job office titles, roles, responsibilities, and career paths. It becomes important for the business educator to incorporate the computer into many learning exercises in the business education curriculum in order to develop the ability on the part of the students to use the tool to its potential.

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[1]Donald Werner and Robert Gryder, "Integrate Accounting and Data Processing," Business Education Forum 28:3 (December 1973), pp. 32-33.

[2]James L. Morrison, "Computer Education from the User's Viewpoint," Business Education Forum 31:4 (January 1977), pp. 5-9.

Resistance on the part of educators places the students at a disadvantage in the job market.

Tonne (1970),[1] made the following synopsis of the situation:

> There has been a revolution in the manner in which records are kept in the last seventy-five years. . .At least 95 percent of all recording is now done mechanically and increasingly by means of electronic data processing. Instead of formal journals and ledger books, these records, reduced to single bits of information, are made automatically on cards, tapes, magnetic drums, discs, and by many other devices. . .The terms debit and credit are not used. . .bookkeeping teachers still teach the outworn processing and use new excuses to do so. They insist that the best way to teach electronic recording processes is by means of traditional bookkeeping. . . Times have changed and unless bookkeeping teachers change their subject rapidly they will not have the opportunity to hang on for three centuries. The pace of change today will not tolerate such delay.

In a later article, Tonne (1974)[2] comments that every year hundreds of research projects are completed, but the program of school learning changes little, and then largely on the basis of fad rather than objective evidence. He suggests that the business education leaders produce and implement a modern business curriculum that recognizes what should be taught in school and what must be learned on the job.

Summary of periodical literature

The journal articles emphasize the changes being made in modern office procedures because of changes in technology. Most writers find

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[1]Herbert A. Tonne, "A Critique of Bookkeeping Instructional Content," The Journal of Business Education, XLVI:3 (December 1970), pp. 106-7.

[2]_____, "Curriculum Lag in Business Education," The Journal of Business Education, XLX:7 (April 1974), p. 273.

the present system of instruction in accounting out of step with present business practices, and emphasize the need to integrate data processing instruction in the accounting curriculum.

Many educators are advocating the use of specialized materials developed from observation of community business practices, although some maintain a general education is more practical to the student in the long run.

Summary of Related Literature

The preceding review of related research and professional literature has highlighted references relating to the current problem. Some of the recurring findings include:

1. The preparation of high school students for office employment has been and still is a critical problem because of inadequate or inappropriate school training.

2. Changes in technology have resulted in changes in business procedures, creating a need for those involved in preparing students for business employment to re-assess their curricula, and to design vocational instruction which is relevant to the current labor market.

CHAPTER III

THE DESIGN OF THE STUDY

Description of the Study

The information for this study was collected from fifteen Grand Rapids area businesses by means of questionnaire-interviews conducted by the writer. Data collected pertained to the job tasks performed by fifty-one entry-level accounting/bookkeeping/recordkeeping employees.

Selection of Sample Population

Since the purpose of the study was to determine activities of entry-level workers in relation to job tasks defined in the performance objectives stated by the Michigan Department of Education, the workers to be interviewed needed to be entry-level workers; i.e., workers who had little or no experience and/or training for the job at which they were working.

The writer decided to use manufacturing firms in the metropolitan Grand Rapids area as the source of sample population. The size of the businesses chosen had to be large enough to employ entry-level workers as well as workers with more training and experience. Therefore, a decision was made to choose businesses which had a total worker population of 250-1,000. The rationale for this decision was that with at least 250 employees, there should be a sizable office-support group. Thus, there would be entry-level positions in the accounting/bookkeeping recordkeeping area, whereas a smaller business might hire one or two

bookkeepers or accountants with a greater degree of education and/or experience.

Further support for this position is given by Kushner,[1] whose survey of Detroit high school graduates showed that Detroit companies hiring more than 100 employees accounted for 51 percent of all the office and sales jobs secured by 1968 graduates in the survey. Kushner concludes, therefore, there is a relationship between the size of the company and the number of entry-level jobs available: The larger the company, the more likely they are to have entry-level jobs.

A further requirement of the sample population source was that it must be served by the Grand Rapids Public Schools. Most logically, then, these businesses with entry-level workers would be located in the metropolitan Grand Rapids area. For the convenience of the researcher, the Regional Grand Rapids Directory of Manufacturers and Manufactured Products,[2] compiled by the Grand Rapids Area Chamber of Commerce, was used as the source of a list of companies with potential interviewees. It was decided by the writer that the number of companies to be included in the survey would not be less than fifteen and not more than twenty.

The 1976 edition of the Directory contains twenty-eight businesses in the 250-499 employee category and sixteen in the 500-1000 group.

Four companies were eliminated from the potential list as being too far from the area assumed as a market for the graduates of the

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[1]Kushner, op. cit., p. 132.

[2]Regional Grand Rapids Directory of Manufacturers and Manufactured Products (Grand Rapids, Michigan: Printing Arts Company, Grand Rapids Area Chamber of Commerce, 1976).

Grand Rapids Public Schools since they were located in small towns on the outer edges of the county. Two others were eliminated as being a subsidiary of a much larger company and thus failing to qualify for the requirements.

A letter of introduction was sent to the Personnel Director in each of the thirty-eight businesses (See Appendix F). The letter explained that the writer was making a survey of Grand Rapids area businesses to determine whether the Grand Rapids Public Schools was including in its curriculum the training needed by beginning workers in the accounting/bookkeeping field. The letter asked for their help and cooperation in allowing the writer to have access to entry-level employees during working hours for a short interview. It explained that the writer was interested only in the tasks the employees performed on the job and did not want any confidential information.

In the letter, the writer set up an approximate date on which she would call the letter recipient in each firm to determine the firm's willingness to cooperate in the study and to find out the name of the Accounting Department manager (or similar person), what kind of entry-level jobs existed in the department, and how many employees were now employed on those jobs.

A list of common job titles for entry-level jobs in accounting/bookkeeping/recordkeeping, compiled from the Dictionary of Occupational Titles, was enclosed with the letter to help the personnel manager or accounting department manager to determine the types of jobs in which the writer was interested. (See Appendix G for a copy of this list.)

Within a week after sending out the letters, the writer called each of the thirty-eight Personnel Directors to whom a letter had been sent to find out which were willing and able to cooperate. This became a time-consuming task, often with many call-backs, before it was finally arranged that fifteen of the original list would allow the writer to interview their employees in accounting/bookkeeping/recordkeeping positions. (See Appendix I, Table XXX, page 155.)

Various reasons were cited by the twenty-three firms which chose not to participate in the study. Six said they had so little turnover that they had no positions which would be considered entry-level. Four indicated that all their accounting activities were done in another city, and two employed outside accounting firms to do their work. Three were engaged in contract talks and did not want to involve their office employees at that time. Two said it was the policy of the company to allow no outsiders to talk with employees during company work time. One said no and would give no reason for the answer. Four gave sundry reasons for not participating in the survey: vacations, no one in the office wanted to participate, not convenient. Only one was eliminated because the writer finally gave up trying to contact the personnel manager after seven phone calls without reaching any decision.

A list of the participating firms in given in Appendix A.

The writer found that the Personnel Managers who were interested in cooperating wanted more information about the survey and this was given in the phone conversation. When the company had agreed through the Personnel Manager to assist in the survey, the writer then contacted the person designated (office manager, accountant, controller, etc.) to

set up an appointment to conduct the interviews. During this telephone conversation, the writer again explained the purpose of the survey interviews and the type of positions in which she was interested. About a week before the interviews were scheduled, a set of personal-data questionnaires was sent to the designated person who gave them to the entry-level employees for completion before the time of the interview. This procedure decreased the amount of time required for the interviews and increased the amount of data collected. Fifty-one employees in the fifteen businesses were interviewed.

Types of Entry-Level Jobs to Be Investigated

Since the purpose of the study was to investigate the activities engaged in by entry-level employees in accounting/bookkeeping/record-keeping and to determine whether they were consistent with the performance objectives outlined by the Michigan Department of Education for high school bookkeeping, it became necessary to define the jobs which were involved.

The performance objectives adopted by the Michigan Department of Vocational/Technical Education use the occupational designation of "Bookkeeper," with the United States Office of Education Code Number: 14.0102. This code number corresponds to the Dictionary of Occupational Titles Occupational Division 210. The definitions of bookkeeper as found in the Dictionary of Occupational Titles[1] are:

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[1]U. S. Department of Labor, Dictionary of Occupational Titles (Washington, D. C.: Superintendent of Documents, U. S. Printing Office, 1977), p. 165.

> 210-382-014 BOOKKEEPER (clerical) I, full-charge bookkeeper; general bookkeepers. Keeps complete set of records of financial transactions of establishment: Verifies and enters details of transactions as they occur or in chronological order in account and cash journals from items, such as sales slips, invoices, check stubs, inventory records, and requisitions. Summarizes details on separate ledgers, using adding or calculating machine, and transfers data to general ledger. Balances books and compiles reports to show statistics, such as cash receipts and expenditures, accounts payable and receivable, profit and loss, and other items pertinent to operation of business. Calculates employee wages from plant records or timecards and prepares checks or withdraws cash from bank for payment of wages. May prepare withholding, Social Security, and other tax reports. May compute, type, and mail monthly statements to customers. May complete books to or through a trial balance. May operate bookkeeping machines.
>
> 210-382-018 BOOKKEEPER (clerical) II. Keeps one section of set of financial records, performing duties as described under BOOKKEEPER (clerical) I. May be designated according to section of bookkeeping records kept, such as ACCOUNTS-PAYABLE BOOKKEEPER (clerical); ACCOUNTS-RECEIVABLE BOOKKEEPER. . .

The Michigan Department of Vocational/Technical Education's performance objectives for bookkeepers are based mainly on Bookkeeper I above. Entry-level accounting/bookkeeping/recordkeeping jobs will include only portions of the tasks included in the above description of Bookkeeper I, but will more apt to be in Bookkeeper II, and will be only one part of a full-charge bookkeeper's duties.

The writer prepared a list from the Dictionary of Occupational Titles of accounting/bookkeeping job titles and a copy was sent to each Personnel Director with the introductory letter. (See Appendix G.)

Development of the Data-gathering Instruments

The data was collected by the writer from personal-data questionnaires and during a series of personal interviews conducted on site with the workers, following a set of pre-determined questions as a guide.

Development of the personal-data questionnaire

The personal-data questionnaire sent to be completed prior to the interview consisted of 27 questions that requested identifying and background information from the interviewees. A complete personal-data questionnaire will be found in Appendix B.

Questions 1-10 asked about educational and employment history of the employee, including questions about the job requirements for training in accounting/bookkeeping. Questions 11-12 solicited information about career paths and promotional opportunities. Questions 16-18 and 22-23 asked about machine usage on the job, computational activities, and typing activities on the job. The individual's involvement in data processing activities were inquired about in Questions 19-21. The last question asked the employee to try to list the ten most important activities of the job.

One performance objective from the adopted Michigan Performance Objectives was covered in Questions 24-26 regarding handwriting and whether the individual's handwriting was tested prior to employment.

Another performance objective from the Data Processing section was included in Question 22 regarding arithmetical calculations made by the employee. The performance objective states: Given a 10-key adding machine and an assortment of addition problems, the learner will compute the answers within an appropriate period (with 90% accuracy). The questionnaire asks: About how many hours a week do you spend making calculations (either manually or by machine)? Question 16 asks the respondent to indicate what machines are used on the job.

Description of the interview questionaire

The interview was chosen as the medium for collecting data. It is superior to other means of gathering information since people are usually more willing to talk than to write answers. If the interviewer has been able to establish a friendly relationship with the interviewee, more information can be secured than the individual would put in writing. The interviewer is able to explain the reasons for the study and what kind of information he wants. On a one-to-one basis, there is less chance for misinterpretation than when the explanations and questions are given in a written questionnaire. Furthermore, it is possible to explore areas which were unplanned in the original investigation.[1]

A series of questions was developed by the writer for use during the interview, and a copy was given to each interviewee to use for reference, with the questions being asked orally and answers and comments being recorded by the interviewer.

Since a comparison was desired between the job activities of entry-level workers and the Michigan performance objectives, a cross-indexing was done between the questions and performance objectives to ensure that each performance objective was covered by at least one question. (See Appendix E.) The performance objectives which were not included in questions dealt with written examinations, employability skills, and cooperative education technique.

The performance objectives as published by the Michigan Department of Vocational/Technical Education for bookkeepers divide the performance objectives into the following divisions:

[1]John W. Best, Research in Education (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1970), pp. 186-7.

I. Handwriting

II. Journalizing and Posting

III. Cash Accounting

IV. Inventory Control

V. Payroll

VI. Taxes

VII. Verification Procedures

VIII. Accrual and Cash Systems

IX. Data Processing

In an attempt to establish a common ground of job descriptions, the writer made comparisons between the Dictionary of Occupational Titles definitions, titles of Instructional Programs from the United States Office of Education, Michigan Performance Objectives for Bookkeepers, job titles and definitions given by a local Kelly Girl Office, and newspaper classified advertisements.

With the exception of payroll, the groups of performance objectives did not match exactly any of the job descriptions. Therefore, in the development of the interview-questionnaire, the performance objectives were re-arranged into groupings which would more nearly match those found in office jobs.

These sections also represent broad areas of instruction in high school accounting/bookkeeping, and the writer felt that this arrangement would facilitate the asking of questions during the interview, since the areas covered in the performance objectives were re-arranged into groups of tasks which accounting clerks often perform.

The sections of the interview questionnaire are:

A. Accounts Payable

B. Accounts Receivable

C. Purchases

D. Merchandise Inventory Records

E. Sales

F. Cash Receipts

G. Cash Payments

H. Payroll

I. Petty Cash

J. Financial Statements

K. General Journal and General Ledger

L. Data Processing

The completed interview questionnaire consisted of a series of 113 questions regarding the job activities in the various areas of accounting as listed above. A copy of the questionnaire is included in Appendix C.

A performance objective consists of three parts: (1) the conditions under which the student will (2) perform certain tasks and (3) how the performance of these tasks will be measured. The conditions stated in the Michigan performance objectives for bookkeepers are not stated in terms of job tasks as much as they are in terms of textbook learnings. For example, under the "Journalizing and Posting" divison, Performance Objective No. 5 states: "Given 25 Accounts Receivable/Accounts Payable business transactions, the learner will journalize and post the entries in a special journal with 90% accuracy." Performance Objective No. 6

states: "Given 25 Accounts Receivable/Accounts Payable business transactions, the learner will journalize and post the entries in a combination journal with 90% accuracy." Performance Objective No. 8 says: "Given 10 business transactions affecting purchases on account and sales on account, the learner will select the proper account in the subsidiary ledger and post it for all transactions with 100% accuracy."

Since very little detailed information could be collected from an employee by asking only, "Do you journalize and post accounts receivable or accounts payable transactions?" the questionnaire needed to be more specifically directed to job activities in the accounts payable or accounts receivable area. Therefore, the writer included in the Accounts Payable section such questions as, "Do you record or post invoices received from vendors/creditors for purchases?" and "Do you post to vendors'/creditors' accounts the amounts of cash paid to them?"

Other questions relating to journalizing and posting were included in the sections on Purchases, Sales, Cash Receipts, Cash Payments, Payroll, Petty Cash, and the General Journal and General Ledger.

The Cash Accounting division of the performance objectives includes four performance objectives, and these were covered in the interview questionnaire in Cash Receipts, Cash Payments, and Petty Cash sections.

Performance Objective No. 1, Cash Accounting is: "Given a bank deposit slip and a list of checks, currency, and coins, the learner will prepare a checking account deposit slip with 100% accuracy." This performance objective became Question 3 in the Cash Receipts section. Other questions in this area included related tasks such as the verification

of a check amount through calculation of any discounts, entering checks in a cash receipts journal or similar record, recording of the bank deposits in the checkbook/register, totaling the cash records and posting of the cash journal to the proper ledger.

Performance Objective No. 2, Cash Accounting, asks the learner to show proficiency in writing checks and this was included in the first question in the Cash Payments section of the questionnaire: "Do you prepare checks and stubs (register or voucher record) for cash disbursements?" A set of related questions similar to those included in the Cash Receipts section were also included here.

Performance Objective No. 3, Cash Accounting, refers to the reconciliation of a bank statement. It is covered in question 7 in Cash Payments.

Petty Cash transactions are referred to in Performance Objective No. 4, and this was directly covered in the Petty Cash section questions on the interview questionnaire.

Inventory Control was handled in only one performance objective: "Given a sales breakdown (by department, product line, etc.), the learner will calculate the new perpetual inventory totals." A question in the Purchases section asked: "Do you record quantities purchased on inventory, stock, or open-to-buy records?" Questions in Section D, Merchandise Inventory Records, also dealt with this, as did questions 3 and 13 in the Sales section.

The Payroll section of the interview questionnaire included 15 questions, the first 9 of which cover the performance objectives for Payroll.

The last six questions in the Payroll section cover the Taxes division of the Michigan Performance Objectives. These have to do with the employer's payroll tax liabilities, withheld income and FICA taxes, and other tax forms which must be completed by a business.

The writer included a question on "one-write" systems and peg-boards because textbooks used locally in the high schools[1] make frequent references to such systems.

Michigan Performance Objectives Verification Procedures division lists two performance objectives. The first one states: "Given 25 source documents, the learner will verify the entire source document." Questions relating to this were included in many parts of the questionnaire:

> Accounts Payable, No. 6: Do you compare statements received from creditors/vendors with balances in their accounts?
>
> Accounts Receivable, No. 4: Do you prepare statements of account?
>
> Purchases, No. 2: Do you compare merchandise received with purchase invoices received?
>
> Sales, No. 5: Do you verify the items in 4 (extensions, discounts, deductibles, freight charges) which another person has calculated?
>
> Cash Receipts, No. 1: Do you calculate (verify) any discounts, allowances or partial payments before recording incoming checks?
>
> Cash Payments, No. 5: Do you determine or verify cash balances by comparing the checkbook balance with balance of cash journal?
>
> Petty Cash, No. 6: Do you have any responsibility for maintaining or proving or balancing the petty cash drawer?

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[1] Weaver et al, op. cit. and Swanson et al, op. cit.

Data Processing, No. 3: Do you compare (verify) data processing coding or input forms with original business papers or bookkeeping records?

Data Processing, No. 5: Do you compare or balance data processing printouts with original business papers?

The writer did not believe that any entry-level workers would be involved in accruals, but since a performance objective was included asking for a description of a cash system and an accrual system, a question was asked in the General Journal and General Ledger section regarding adjusting entries for accrued items.

The Data Processing Performance Objectives covered a wide area in three performance objectives. The first one states: "Given a 10-key adding machine and an assortment of addition problems, the learner will compute the answers." Similar situations were presented in many of the questions included in the questionnaire, although the respondent was not required to be using a 10-key adding/listing machine, nor limited to addition problems. Thirty-four questions referred to making calculations of some kind.

A written examination was included in the second Data Processing performance objective, asking for a comparison of manual and electronic data processing cycle, definitions of common data processing terms, and input media. The writer included questions regarding coding, input sheets, and printouts in an effort to determine what is being done currently in business.

Flow charts were the subject of the last performance objective in Data Processing, with the learner being asked to flow chart the path from input to output from source documents. The writer asked the

respondents if flow charts are used or prepared to show steps in the processing of data.

Two answers were required for every question in the interview questionnaire: Do you perform this task? and, if so, Where did you learn to do this task, in school or on the job?

The "where learned" part of the answer was included by the writer in an attempt to discover what kinds of job tasks are being performed on the job in which instruction is not being given in school. By implication, this data could show whether or not the performance objectives for bookkeepers are valid or should be modified.

Treatment and Analysis of Data

The data was collected by means of a previously completed personal-data questionnaire collected by the researcher at the time of the interview and by means of an interview questionnaire.

When all of the fifty-one interviews had been completed, the data was keypunched and summarized by computer. The computer analyzed the input in percentage terms based on the fifty-one respondents. The two questionnaires were analyzed separately.

Not all of the data responses on the personal-data questionnaire could be computerized, and had to be tabulated manually before being analyzed. Many notes were made during the interview on the questionnaires qualifying the answers given, and were consulted as the researcher made an analysis of the tabulated data.

After the statistical analysis was made of all data collected, tables were constructed to present the major findings in a form that could be easily interpreted.

Summary of Design of the Study

The data in this study was collected from fifteen Grand Rapids area businesses by means of questionnaire-interviews conducted by the writer. Data collected pertained to the job tasks performed by fifty-one entry-level accounting/bookkeeping/recordkeeping employees.

The sample population of this survey was selected from employees of manufacturing companies listed in the Regional Grand Rapids Directory of Manufacturers and Manufactured Products. The survey was limited to businesses having a total employee group of between 250 and 1,000, since the writer felt this would provide a sizable office-support group which would include entry-level employees.

Letter and telephone contacts were made to the entire group of forty-four businessess with the exception of four which were eliminated as being too far from the contiguous Grand Rapids area served by the Grand Rapids Public Schools, and two others which were subsidiaries of larger companies, and thus did not qualify for the 1,000 employee limit set by the writer. Fifteen companies agreed to participate in the survey.

A personal-data questionnaire was designed to collect information about the respondent's age, educational preparation, employment tenure, hiring requirements for the job, job title and duties, machines used on the job, possible career paths, and contact with computerized accounting. The twenty-seven questions on the personal-data questionnaire were completed prior to the interview.

The interview questionnaire was constructed as a guide to the interview and asked 126 questions about 113 job activities related to

the school curricula and the Michigan Department of Education Recommended Minimum Vocational/Technical Program Performance Objectives for Bookkeepers. For each question, the interviewee was required to answer the question, "Do you perform this task, and, if so, where did you learn to do it, on the job or in school?"

When the fifty-one interviews were completed, the collected data was tabulated by computer and manually for analysis. Separate analyses were made of the data from the personal-data questionnaire and the interview questionnaire. Many tables were constructed to present the findings in a form that could be easily interpreted.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The selected businesses were contacted by letter and by telephone. In each firm, the personnel officer was the initial contact. The secondary contact was a person in the accounting department or an office manager. Fifteen businesses agreed to cooperate in the survey, and fifty-one interviewees were selected by the secondary contact people as being entry-level workers. Data was collected from the fifty-one employees by means of a personal-data questionnaire filled out by the employees prior to the interviews and through a personal interview conducted on site by the researcher. Data was tabulated by computer as well as manually from the questionnaires and from notes taken during the interviews.

Age, Sex, and Educational Preparation of Respondents

Respondents to the survey were asked to report their ages as either 16-24 years of age or 25+ years of age. This span of years was used since some people are sensitive about their age and do not wish to reveal it to a stranger. The responses showed that 41.1% of the interviewees were in the under-24 years-of-age group and 58.9% were in the 25+ age group.

Since the researcher had asked for only entry-level workers, the results of the age groupings had been expected to show a concentration in the 16-24 years-of-age group as entry-level workers are commonly

understood by vocational educators to be beginning workers. In both the letters and telephone conversations, the researcher had asked for entry-level employees. Since collected data show more people in the 25+ age group, "entry-level" jobs must be defined in terms of the duties performed rather than the chronological age of the employee. This would indicate that many people spend much of their working life in entry-level jobs, and that employers apparently define entry-level positions in terms of the job activities rather than the age of the employee.

The researcher felt that it was unnecessary to ask the sex of the interviewee on the questionnaire. Of the fifty-one people interviewed, only one was a male.

Information regarding the educational status of the respondents was elicited in question 4 of the personal-data questionnaire. Table I on page 47 summarizes the answers given to this question. Of the fifty-one persons interviewed, all were high school graduates, twelve had taken classes in private business schools, ten in junior or community colleges, and eight in 4-year colleges.

Five respondents indicated they had taken post-high school training courses at two different institutions. One person indicated holding an associate degree from a junior college, but no one held a baccalaureate degree. It may be inferred, then, that entry-level employees in accounting/bookkeeping/recordkeeping jobs need to graduate from high school, but can handle the job requirements without additional post-high school training.

The pertinent background training of the interviewees taken while in high school is shown in Table II on page 48. Twice as many employees

TABLE I

EDUCATIONAL STATUS OF RESPONDENTS

Level of Education	Number	%* of 51 Respondents
High School Graduate	51	100
Private Business School:		
0 Semesters	39	76.5
1 Semester	5	9.8
2 Semesters	3	5.9
4 Semesters	3	5.9
5 Semesters	1	1.9
		100.0
Junior/Community College:		
0 Semesters	41	80.4
1 Semester	1	1.9
2 Semesters	4	7.9
3 Semesters	2	3.9
4 Semesters	3	5.9
		100.0
4-Year College:		
0 Semesters	43	84.4
1 Semester	3	5.9
2 Semesters	4	7.8
3 Semesters	1	1.9
		100.0

*Percentages rounded to equal 100%

TABLE II

HIGH SCHOOL BACKGROUND OF RESPONDENTS
SHOWING JOB-PERTINENT COURSES

Job-Pertinent Course	No.	% of 51 Respondents
No courses in Accounting/Bookkeeping or Recordkeeping	17	33.3
At least one semester of Accounting/ Bookkeeping/Recordkeeping	34	66.7*
	51	100.0
Recordkeeping:		
1 year	6	11.7
2 years	2	3.9
Accounting/Bookkeeping:		
1 year	19	37.2
2 years	11	21.5
Clerical Procedures (or similar)		
1 year	9	17.6
2 years	13	25.4

*Percentage rounded to equal 100%

had high school courses in accounting/bookkeeping/recordkeeping as those who had no courses while in school. Some respondents had taken more than one of the three courses listed, making it impossible to have the table total to 100%.

Table III on page 49 tabulates the answers to question 5: How many accounting/bookkeeping courses have you taken since high school? In all, 35.2% indicated they had taken some post-high work. Of the 18 people who responded they had taken some type of accounting/bookkeeping course since graduation from high school 6 had taken no accounting/

TABLE III

POST-HIGH SCHOOL TRAINING IN ACCOUNTING/BOOKKEEPING

Number of Courses	No.	%* of 51 Respondents
None	33	64.8
1 semester	6	11.8
2 semesters	8	15.7
4 semesters	2	3.9
7 semesters	1	1.9
10 semesters	1	1.9
		100.0

*Percentages rounded to equal 100%

bookkeeping/recordkeeping classes while in high school. This suggests that when a need was felt for further training, the employee undertook it, regardless of what the high school training had been. Supplementary data which would be helpful in interpreting Table III would be whether this additional training had been taken prior to employment or during employment.

One respondent added a note on her questionnaire to the effect that although she had not taken any college courses in accounting, she had helped her husband through three and had profited from the studying she had done with him.

Work Experience with Present Employer

Respondents were asked to tell how long they had worked for the present employer and how long on their present job for their present employer.

TABLE IV

EMPLOYMENT TENURE WITH PRESENT EMPLOYER

Length in Years	No.	%*
Less than one year	12	23.6
1 year	11	21.6
2 years	3	5.8
3 years	2	3.9
4 years	5	9.9
5 years	2	3.9
6 years	1	1.9
7 years	1	1.9
8 years	2	3.9
9 or more years	12	23.6
Totals	51	100.0

*Percentages rounded to equal 100%

It becomes obvious that entry-level employment applies to no specific age group and that the length of employment is not the main consideration in determining whether an employee is considered as entry-level, since 31.3% had been employed more than five years.

Although 31.3% of the interviewed employees had been employed by their firms for more than five years, the number who had been performing the same job for their present employer for more than five years was only 21.5%, as shown in Table V below.

TABLE V

LENGTH OF TIME PERFORMING PRESENT JOB FOR PRESENT EMPLOYER

Number of Years on Present Job	No.	%*
Less than one year	15	29.5
1 year	15	29.5
2 years	3	5.8
3 years	4	7.9
4 years	3	5.8
6 years	2	3.9
7 years	3	5.8
9 or more years	6	11.8
Totals	51	100.0

*Percentages rounded to equal 100%

The researcher determined that of the 30 employees who had been working on their present job for one year or less, eleven had been previously employed in the same firm, but had been transferred to the new position. The remainder had been newly employed during the past year.

Since the employer chose to consider these people as entry-level, it must again be affirmed that entry-level positions are determined by

the level of the job tasks performed, not the length of time an individual has been working at the particular job.

Employment requirements in relation to school training in accounting or bookkeeping were questioned (question 9, parts a and b) to determine whether any training in or conceptual knowledge of accounting/bookkeeping/recordkeeping was required on the entry-level jobs being investigated. Although 34 people or 66.6% indicated that it was not needed for their employment, an equal number of interviewees indicated they had at least one semester of high school training in accounting/bookkeeping/recordkeeping (See Table II). Previous training was not listed as a condition of employment by 19.6%, and seven left this question blank, saying they were not sure.

A second section of this question inquired about the requirement of previous job experience in some type of accounting or bookkeeping as a condition of employment. Yes and No answers were equally divided, with 43.1% answering for each. Again, 13.7% of those interviewed were not certain whether job experience had been a prerequisite for their employment.

Job experience does not appear to be a controlling factor in whether or not an applicant is given an entry-level position. Since the 43.1% who said it was a condition of employment had previous work experience, the granting of employment could seem to be a condition of employment whether or not it actually was.

Several of the personnel managers contacted during the initial phase of the research told the researcher that previous school training and job experience were, to them, less important than the applicant's

personal qualities: attendance record in school, proficiency in basic arithmetic, spelling ability, ability to follow directions using good common sense, and a positive work attitude.

Respondents Judged Ability to Perform Job Duties in Relation to Training

Although most of the questions on the personal-data questionnaire asked for factual answers, in question 8 the respondents were asked to give an opinion about the contribution their school training had made to their ability to perform their job duties. The question read: "Did you learn or could you have learned to perform your present job duties without previous school training in accounting/bookkeeping?" Provided answer blanks were: Entirely, Mostly, Partly, No.

TABLE VI

RESPONDENTS JUDGED ABILITY TO PERFORM JOB DUTIES WITHOUT PREVIOUS SCHOOL TRAINING

Judgment	No.	%*
Entirely	24	47.1
Mostly	12	23.5
Partly	12	23.5
No	2	3.9
Totals	50#	98.0#

*Percentages rounded to equal 100%
#Only 50 employees responded to the question

One respondent who failed to answer this question had just been transferred to a new position and did not feel qualified to answer.

The 47.1% who said they could have performed their job duties without any previous school training represent nearly half of all the respondents. In comparing the age group into which these employees fell, it was found that 15 employees were in the 25+ age group and the remaining 9 in the 16-24 years-of-age grouping. The researcher believes that the lapse of time since the employees were in school may have affected the judgment when answering this question. It is possible that a person may not remember the type of conceptual learning which took place in school and be able to apply it to the actual job duties being performed. In other words, after a number of years, a person may not actually remember where he learned to do a certain task.

It should be considered significant, however, that the respondents could not associate school learnings with the actual job duties being performed. It seems that there has been little transfer of school learning to on-the-job activities, since two-thirds of the respondents had previous courses in accounting/bookkeeping/recordkeeping in high school. The respondents do not seem to recognize that the activities of their jobs are variations of the accounting concepts they learned in high school. The researcher believes that high school accounting/bookkeeping/recordkeeping can have more transfer to job performance if the high school teacher will include in the instruction a wider representation of local practices, record forms, and terminology; and show how these are related to the conceptual learnings which are taking place in the classroom.

Job Titles and Overview of Job Duties of Respondents

Requests for information about the respondents' job duties were scattered throughout the personal-data questionnaire, as well as some questions being asked during the interview. The main source of data for the following analyses is question 27 from the personal-data questionnaire, with additional information found in questions 10, 16-18, and 22-26.

Job titles of respondents

Each respondent was asked to indicate his/her job title. The responses are shown in Table VII on the following page.

Employees perception of actual time spent on accounting/bookkeeping

The employee's perception of the job held was questioned in question 10 which asked what percentage of time was actually spent on accounting/bookkeeping work. Eleven people found it impossible to assign a percentage of time; 23.5% said they spent only 25% on actual accounting/bookkeeping; 7.8% said 50% was spent in actually working on accounting/bookkeeping; 11.7% said 75% was spent on actual accounting/bookkeeping; and 35.2% said 90% or more time was spent on actual accounting/bookkeeping work on their job.

Analysis of duties of accounts receivable clerks

The largest single grouping is the Accounts Receivable Clerk with 33.3% of the total group of respondents being involved. Seven people listed their job title as Accounts Receivable Clerk, or some variation of this title. The most important activity of these jobs was listed as

TABLE VII

JOB TITLES OF RESPONDENTS

Job Title		No.
Accounts Payable Clerk		11
Accounts Receivable Clerks:		
Accounts Receivable Analyst	1	
Accounts Receivable/Invoice Clerk	7	
Billing Clerk	5	
Customer Claims Representative	1	
Credit Clerk	3	17
Accounting Assistant/Secretary		1
Accounting Clerk		2
Bookkeeper*		1
Cashier		3
Clerk (also Chief Clerk, General Clerk)		3
Computer Operator/Accounts Receivable Clerk		1
Data Entry, Key-tape Clerk		1
General Ledger Clerk		1
Order Department Clerk		2
Payroll Clerk		7
Property Accounting Clerk		1
Total		51

*Job duties for bookkeeper showed this person to be an Accounts Payable Clerk

processing checks or applying cash received from customers. The amount of time estimated being spent on the activity of receiving cash and

recording it in customers' accounts varied from 100% to 30%. Three of the seven clerks also said they had to make out the deposit form after recording all checks. Other accounts receivable tasks performed included making (figuring, typing) credit memos; aging accounts receivable (or using printout) and making telephone calls or writing letters regarding past-due accounts; verifying invoices; typing invoices and other business forms; and helping with other miscellaneous office tasks. Only one person in this category used a bookkeeping machine to record receipts of cash in the customers' accounts.

Billing Clerks were the next largest group of Accounts Receivable Clerks, with five employees using that as a job title. The amount of time spent in preparing invoices varied from 40% to 80%. Each clerk said much time was spent in making calculations before the actual typing was done, with time estimates varying from 10 hours to 35 hours weekly. One of the five did all the billing on an IBM MOES II Computer terminal, indicating that 70% of her time was spent on billing, with an additional 10% on key-to-tape entry.

Similar job titles do not necessarily mean the same job activities, as shown by the three credit clerks' listing of job duties. Two were employed by the same firm, being Credit Clerk I and Credit Clerk II. Part of Credit Clerk II's duties included supervising Credit Clerk I. Credit Clerk I said 40% of her time was spent recording and preparing the daily cash sheet, a summary of all checks received from customers. The remainder of her time was spent answering credit inquiries, checking on past-due accounts, taking dictation, and filing. The Credit Clerk II spent 20% of her time in supervision, 20% approving credit and making

credit investigations, 25% making telephone collections or writing collection letters. Miscellaneous duties of answering the telephone, working on receivables, and replying to dealer inquiries were included in her job activities.

The third Credit Clerk, an employee of a newspaper, had job activities similar to those of the credit clerks in the manufacturing firms, although the product sold was advertising. Her job included preparing the ads for billing, sending second notices when not paid, checking contracts for credit, working with the credit bureau for reports, and checking refunds to be sent. One activity listed was checking the published bankruptcy list against unpaid accounts to establish possible bad debts.

The Customer Claims representative stated that about 70% of her working time was spent in writing up, investigating, processing, and issuing credit on customer claims; and writing reports relative to claims handling. The remainder of her time was spent on various cost accounting reports, including metal usage, maintenance redistribution, standard analysis, energy consumption, and finished goods inventory. She made widespread use of printouts from the computer in these activities.

The Accounts Receivable Analyst spent about 40% of her time figuring salesmen's commissions at rates which varied according to the product sold; she also had to balance the invoice register with the ledger account, issue credit memos, and prepare and keep sales tax records.

Analysis of duties of accounts payable clerks

The second largest group in the survey were the Accounts Payable Clerks. Twelve people, representing 23.5% of the respondents, were

included here. In contrast to the Accounts Receivable clerks, most of these employees who performed the accounts payable function were called Accounts Payable Clerks. The one exception was the bookkeeper whose main job duties indicated her to be an accounts payable clerk; however, this person did work on the general ledger and general journal as well as in the accounts payable department.

Seven of the twelve Accounts Payable Clerks included as a major job duty the matching of purchase invoices with purchase orders, matching receiving slips to invoices, or matching purchase orders to receiving slips. The amount of time assigned to this function varied from 20% to 60%. Another recurring job duty for the Accounts Payable Clerks was an arithmetical function of verifying amounts and totals on invoices and figuring discounts. The number of hours given to making calculations was estimated to be from 7 to 38, with a mean time of 20 hours. This would represent about one-half of the work week being spent making some type of calculation. All of these people indicated they used a 10-key adding/listing machine or an electronic calculator.

Suggestive of the changes in accounting procedures from manual to automated data processing, job tasks included input by means of key-punch, key-to-tape, and terminal; typing offline; checking printouts from the computer against original invoices or transmittal sheets; and preparing lists of needed checks for the computer to prepare. This information was more apparent from the answers to questions asked during the interview than from the job activities listed on the questionnaire, where the respondent was asked merely to list the ten most important activities of the job rather than telling how they were performed.

Other duties performed by the Accounts Payable Clerks included writing checks (manually, typed, or computer prepared), preparing debit memos, filing, checking computer printouts of cash payments, preparing list totals of cash payments, coding invoices, reconciling bank statements, and miscellaneous office duties. One Accounts Payable Clerk prepared the Salary Payroll for the firm.

Analysis of duties of payroll clerks

Four of the seven payroll clerks worked exclusively on payroll. The other three spent 25-40% of their time on accounts payable activities; operating a bookkeeping machine; and paying freight bills, installers, etc. The Payroll Clerks found it difficult to estimate what percentage of time was spent in each activity of the jobs. Each of the Payroll Clerks started the payroll process by figuring time cards. Although the researcher did not interview a payroll clerk in each of the fifteen companies surveyed, it was determined that all fifteen prepared the payroll with computer assistance, mostly in-house, but two with outside firms doing the processing.

One Payroll Clerk listed as an activity keypunching the payroll, but most indicated during the interview they prepared transmittal sheets. During the interview all said that the computer printout or the completed checks had to be verified before being issued to employees.

Additional related duties included making out labor cost reports, distribution reports, keeping a Daily Time/Production Report file up to date, keeping the payroll tax records, working with new hires and changes, and reconciling the payroll bank statement.

Analysis of duties of cashiers

Three respondents gave their job title as Cashier or Cashier Helper. Two of the three worked for the same firm, a newspaper. Each indicated that about 25% of the day was spent waiting on customers. Checks were also received by mail. Copies of all invoices (statements) sent to customers were used as a journal, with charges and receipts of payments being recorded on the cash register after being listed. Filing was a large part of the processing of the ticket ledger, as the group of classified ad tickets was called.

The third Cashier was employed in a wholesale baking firm. About 50% of her day was taken up with making out the bank deposit for the previous day's receipts. She also had to balance settlement sheets, make out a weekly balance report for accounts receivable, and other miscellaneous cash reports.

Analysis of duties of order entry clerks

Not all of the employees whose duties were in the category of order entry clerks gave their title as that. Job titles included Order Entry Clerk, Order Department Assistant, Chief Clerk, and Data-Entry Key-Tape Operator. The four respondents in this group indicated that 75% to 80% of their working time was devoted to typing orders; making calculations; and doing related filing, phoning, and mailing.

Analysis of duties of miscellaneous clerks

Accounting Clerk was the job title given by two respondents. One listed her duties as handling cash receipts, processing payable invoices, making a receivable daily report, and ledger posting.

The other Accounting Clerk was unable to list the important activities of her job since she had worked at it only two days, having been transferred after more than a year with the company. She did know that she was to produce reports summarizing sales by product lines.

An employee who called herself General Clerk was a "Jacqueline-of-all-trades" and moved from one job to another within the office, assisting anyone who needed extra help for a day or week. She indicated that sometimes she typed, did calculations on invoices, ran the key-punch, checkwriter, and copier.

Clerk was given as the job title for an employee who was performing such tasks as posting to the general ledger, taking a trial balance, making weekly and monthly statements, filing use tax reports, and doing the bank reconciliation statement. She had worked for her present employer for five years, but only one year on this job.

A General Ledger Clerk at a larger firm also posted to the general ledger for 15% of her working time, but spent 60% of her time auditing invoices, writing invoice spread sheets (transmittal forms), and filing invoices.

The only person to list herself as a Computer Operator spent about 40% of her time operating the computer, keypunch, and sorter. The remainder of her time was spent in balancing accounts receivable proofs, checking in orders, and balancing other reports. She also helped the accounts receivable cashier when time allowed.

Fixed asset records and budgets were the primary concern of the Property Accounting Clerk. She made the calculation of depreciation for each fixed asset and then prepared the transmittal sheets for entering

the data into the computer. She was responsible for checking printouts for accuracy. She also maintained the computer records for budgets, entering prepared information into the computer by preparing the transmittal sheets. Factory work orders took up the remainder of her time.

The Accounting Assistant/Secretary started her job as a general secretary to the firm's accountant. Her job duties, in addition to her secretarial duties of filing, typing, receptionist, now include preparing and filing tax reports, helping to prepare budgets, and assisting with some of the closing work. Although she did not take accounting/bookkeeping in high school, she has taken two night classes in accounting since beginning work at this job.

Summary of respondents job duties

The listing of important duties of their jobs on the personal-data questionnaire by the respondents does not easily lend itself to a statistical analysis because of the extreme variation in the percentage of time assigned to each task. Many of the tasks, however, recurred frequently. Following is an encapsulation of the recurring duties of each main group.

Accounts Receivable Clerks. The main duties listed by accounts receivable clerks were processing checks or applying cash to customers' accounts; making out deposit tickets; preparing, processing, typing of credit memos; calculating and verifying invoices; typing invoices; approving credit and making credit investigations; making summaries or lists of checks/cash received; balancing lists or schedules with ledger accounts; and preparation of transmittal sheets and verifying printouts.

Accounts Payable Clerks. The main job duties listed for the accounts payable clerks were matching invoices with purchase orders or receiving slips and matching purchase orders with receiving slips; verifying amounts of totals on invoices and figuring discounts; preparing and recording debit memos; preparing checks or asking computer to prepare checks; preparing lists/totals of checks sent or invoices paid; reconciling the bank statement; checking printouts with source documents.

Payroll Clerks. The main duty of payroll clerks was the figuring of time cards and submitting data to computer for preparation of employee paychecks.

Cashiers. The recurring duty for cashiers was processing cash received from customers, verifying the amounts, and preparing listings or summary totals.

Order Entry Clerks. The main job duty for order entry clerks was to calculate extensions and totals on orders before typing.

Miscellaneous Accounting Clerks. The recurring job task for the miscellaneous clerks was making calculations of various types: auditing invoices, adding cash receipts, figuring depreciation, making out tax reports, figuring commissions, and reconciling bank statements. They also prepared transmittal sheets for submitting data to the computer and verified printouts when received.

Analysis of duties in comparison to size of business

In the preparation of the questionnaires, the researcher did not ask any questions regarding the size of the entire office-support group or the size of the accounting department. This would have allowed a

comparison of duties based on the size of the accounting department and total employees.

A comparison is possible, however, of the duties of accounting/bookkeeping/recordkeeping employees based on the total number of employees of the business. The largest business surveyed, a manufacturer of public seating and institutional furniture, had some of the most specialized clerks: Property Accounting Clerk and Accounts Receivable Analyst. In the smallest business surveyed, a manufacturer of electronic cash registers, the duties of the employees did not always match the title given. For example, the payroll clerk spent only 40% of her time on payroll and an equal amount running a billing machine. The Credit Department Clerk spent 30% of her time taking dictation and filing. The Accounts Payable Clerk spent 20% of his time on salary payroll and other work.

One other small firm had an accounting department with six people and each had a main duty, but shared in other tasks. The payroll clerk was also the accounts payable clerk.

A general inference from this data is that the employee in the smaller company will probably have a greater variety of tasks to perform than the employee in the larger company.

Machines used by respondents

In order to secure the extent of involvement with the typewriter and other office machines, question 16 asked what machines the respondent used on the job. Table VIII on page 66 summarizes this data. Questions 17 and 18 inquired about how many hours the respondent spent

TABLE VIII

OFFICE MACHINES USED BY RESPONDENTS

Machine	No.	%*
Typewriter	43	84.3
10-key Adding/Listing	23	45.0
10-key Electronic Calculator	40	78.4
Full-key Adding/Listing	1	1.9
Full-key Rotary Calculator	1	1.9
Comptometer	6	11.7
Checkwriter	10	19.6
Keypunch machine	4	7.8
Bookkeeping Machine	7	13.7
Billing Machine	2	3.9
Xerox or other copier	42	82.2
Duplicator (Spirit, mimeo, offset)	4	9.8
Computer terminal console	2	3.9
Key-to-tape data entry	4	7.8
Cathode ray tube unit	3	5.8
Optical character reader equipment	-	----

*Percentages based on 51 respondents. Table VIII cannot total 100% since all employees indicated the use of more than one machine.

typing and what kinds of typing was done. These findings are summarized in Tables IX on page 69 and Table X on page 70.

One person said that only one machine (10-key Adding/Listing) was used in the performance of her job duties. This respondent was an accounts receivable clerk who processed checks received and applied the cash to customer's accounts before preparing a deposit slip. Ten respondents used only two machines, and thirteen respondents used three. The greatest variety of machines used was nine by one person, and this was the general clerk who assisted where needed in the office.

The most commonly used machine was the typewriter, with 43 or 84.3% indicating it was used in the performance of job duties. In the case of the keypunch and billing machine operators, all but one in each area indicated also using a typewriter. The number of respondents using keyboarding skills is then increased to 45 or 88.2% of the total respondents.

Students in high school who are expecting to work at entry-level positions in the accounting/bookkeeping field should be informed of the necessity of developing good keyboarding skills on the typewriter or keypunch. Few high schools have access to billing machines for training purposes.

A Xerox or other copying machine was the second most commonly used machine by 82.2% of the respondents, while only 9.8% indicated the use of a duplicator (spirit, mimeo, etc.). This corroborates the findings in Chapter II that technology is changing business practices.

The 10-key electronic calculator was the third most commonly used office machine with 78.4% using it. Some respondents who used an electronic machine also used a 10-key adding/listing machine, since 45% of the respondents indicated its use on the job. All respondents used

either an adding/listing or a calculator of some kind in the performance of their job duties.

The researcher believes that students who are expecting to work at entry-level positions in the accounting/bookkeeping/recordkeeping field should also develop some proficiency in the touch system of operating a ten-key machine, either an adding/listing or an electronic calculator. Schools should continue to give instruction on adding/listing machines as long as businesses use them.

Six people indicated the use of a comptometer in job duties. The researcher determined that five of those six were in the 25+ age grouping. Only two of the fifteen companies visited use the comptometer in office work, and it was not the only form of calculator in use in these two firms. The Grand Rapids Public Schools no longer teach the use of the comptometer.

Other machines listed as being used by the respondents were the dictaphone, cash register, Pitney-Bowes mailing machine, telecopier, telex, decollator, switchboard. Several listed the telephone as an office machine used.

Analysis of typewriter usage.

Forty-three respondents indicated the use of a typewriter was a part of their job duties. The amount of time devoted to typing on the job is summarized on the following page in Table IX. The percentages of interviewees in each category is based on only the 41 respondents who gave a number of hours spent typing each week. (One of the 43 respondents did not designate any exact number of hours and one wrote "seldom" as an answer to the number of hours per week spent in typing.)

TABLE IX

HOURS RESPONDENTS TYPE EACH WEEK

Hours	No.°	%*
1	12	29.3
2	5	12.2
3	5	12.2
4	1	2.4
5	2	4.9
6	1	2.4
7	1	2.4
8	3	7.4
15	2	4.9
16	2	4.9
20	3	7.4
25	1	2.4
30	1	2.4
32	1	2.4
36	1	2.4
Total	41	100.0

°Number equals 41 respondents giving actual time
*Percentages rounded to equal 100%

For the 41 respondents who gave an hourly evaluation of time spent in typing, the median hours is 3 and the mean, 8.1. It is important to note that of the 43 respondents who type, 25.5% spend fifteen or more hours a week typing, with 16.2% typing twenty or more hours weekly.

Analysis of kinds of typing done by respondents

TABLE X

KINDS OF TYPING DONE BY RESPONDENTS

Kinds of Typing	No.*	%*
Fill in forms (invoices, purchase orders, tax forms, checks, etc.)	32	74.4
Letters/Memos	22	51.1
Statistical Tables	8	18.6
Reports	9	20.9
Envelopes	28	65.1
Other: Bulletins, affidavits, debit memos, daily cash sheet, employee earnings ledger sheets	5	11.6

*Based on 43 respondents who type as part of job activity.

Of all the categories provided for the respondents to check in question 18 regarding what kind of typing was done, the greatest number, 74.4% of the 43 who type, checked filling in forms of various kinds. Addressing envelopes was the second largest group with 65.1%, and memos and letters represented the third largest grouping with 51.1% responding that they typed these forms. As most people responded to one or more of the kinds of typing done, the table cannot total 43 nor 100%.

If more employees work on filling in forms, typing envelopes, and typing letters and memos than on other typing, high school courses in typing should give adequate instruction and mastery in these areas. Emphasis on straight-copy typing seems negated by this data.

Hours spent by respondents in making calculations

Question 22 asking about how many hours a week the respondent spends making calculations, including totals, discounts, verifying, etc., was included not only to get an overview of the entry-level worker's activities, but to act as a check on the performance objective for bookkeepers (See Appendix D): Given a 10-key adding machine and an assortment of addition problems, the learner will compute the answers within an appropriate period with 90% accuracy. A second performance objective which could be checked with this question was: Given 25 source documents, the learner will verify the entire source document with 100% accuracy.

TABLE XI

HOURS RESPONDENTS SPEND MAKING CALCULATIONS EACH WEEK

Number of Hours	No.	%*
1 - 5	2	3.9
6 - 10	13	25.5
11 - 15	7	13.7
16 - 20	6	11.8
21 - 25	6	11.8
26 - 30	7	13.8
31 - 35	2	3.9
36 - 40	5	9.8
Unable to estimate/did not answer	3	5.8
Totals	51	100.0

*Percentages rounded to equal 100%

The 6-10 hour group was the single largest area, and the mean fell within this grouping at 8.35 hours weekly spent making calculations. The median, however, was at 15 hours.

In an analysis of the 16-20 hour group, all of the respondents had answered 20 hours. Therefore, 50.9% (26 people) estimated that 20 or more hours weekly were spent in making calculations. This represents 50.9% of entry-level respondents who spend at least half of their working time making some kind of calculations, either manually or with a machine.

Judged responsibility for one's own work

In answering the question: In general, is your work checked by someone else or do you have final responsibility for its correctness, nearly twice as many respondents, 62.8% indicated they held final responsibility for the correctness of their work, while 37.2% indicated their work was checked by someone else.

In analyzing this data, the researcher discovered that of the people who said they were personally responsible for the final correctness of their own work, 75% were in the 25+ age group. Of those in the 25+ age group, 75% had been working on their present job for more than a year.

In the group of employees who said that someone checked their work for correctness, 83.4% were in the 16-24 years-of-age group. Of those 16-24 years of age, 38.4% had been working at their job less than a year and 60.8% had been working at their job for more than a year.

In general, the older people who had been longer on the job felt more responsible for the accuracy of their own work. High School

students should be made aware that on the job there is usually no one in a teacher-like position who will check on all their work for correctness, nor is there an answer book in which to check an answer to a problem. The employee must accept the responsibility for the accuracy of the work produced.

Data copying done by respondents

The value of a business document is sometimes measured by its legibility and this was a consideration in the performance objective for handwriting included in the Michigan performance objectives for bookkeepers: Given any material, the learner will write or print so well that any document prepared by the learner will be usable according to an authoritative text or equivalent reference manual. To check the validity of this performance objective, the researcher included questions 24 and 25 asking whether the respondent does any copying of documents in handwriting and whether handwriting was tested prior to employment.

Table XXII on the following page shows the estimates of the percentage of time the respondents spend in copying data from one document to another, not counting permanent records.

Although three people said they spent no time copying data, fifteen chose not to answer. The researcher examined the list of job duties given by each non-respondent to this question and judged that most of these respondents would probably do a minimal amount of copying, 5% at the most. Based on the percentages stated by the thirty-six respondents, the mean time spent copying data would be 17%; however, if

TABLE XII

PERCENTAGE OF TIME SPENT COPYING DATA

Percentage of Time	No.	%*
0	3	5.8
1 - 5	15	29.6
10	3	5.8
15	2	3.9
20	3	5.8
25	2	3.9
30	1	1.9
40	2	3.9
50	4	7.9
85	1	1.9
No answer	15	29.6
Totals	51	100.0

*Percentages rounded to equal 100%

one included the entire group of fifty-one respondents, using no answer to mean zero time was spent copying, the mean copying time of the respondents would be 12%.

Although 5.8% of the respondents indicated that handwriting had been tested prior to employment several qualified a no answer by saying that the application was handwritten, and thus tested. During the interview, the researcher questioned others and all said essentially the same, that no handwriting test other than the handwritten job application had been given.

The data shown in Table XII and answers to the questions about handwriting indicate to the researcher that the performance objective concerning handwriting is a valid one and students should be encouraged to improve and maintain good handwriting skills.

Possible Career Paths in Respondents' Positions

Questions 11-15 of the personal-data questionnaire inquired into the previous job title held by a person who had received a promotion, the job title next above the present position held, what the employee perceived as a factor upon which promotion depended, and the employee's perception of job promotion possibilities within the firm. From this data, the researcher hoped to be able to answer questions about what career paths are available to entry-level workers in the accounting/ bookkeeping field.

Job titles of previously held positions

Table XIII on the following page presents the job titles previously held by respondents who had received a promotion since beginning work for their present employer.

It will be noted that some of the job titles included in Table XIII are identical to those given as being presently held by other of the respondents (See Table VII, page 56).

TABLE XIII

JOB TITLES OF PREVIOUSLY HELD POSITIONS OF RESPONDENTS WHO HAD RECEIVED PROMOTION

Accounting Assistant	Cost Accounting Clerk
Accounting Clerk	Credit Clerk
Accounts Payable Clerk	File Clerk
Accounts Payable Coordinator	Head Receptionist
Accounts Receivable Cashier	Paymaster
Accounts Receivable Clerk	Receivable Clerk
Accounts Receivable Clerk/Typist	Receptionist/Switchboard
Bookkeeper	Secretary
Billing Clerk	Shipping Clerk
Clerk	

Title of next higher position

To establish the next step in the career path or ladder, the respondents were asked to tell the title of the position above theirs.

Only twenty-six of the fifty-one respondents indicated a higher position. A number of respondents put a question mark in the answer blank and the remainder left it blank. The computer operator commented there was no higher position in her department.

Five people indicated that the accountant or bookkeeper/accountant was the next higher step, and others show some sort of supervisory position. Very few next higher positions represent clerical positions. (See Table XIV on following page.)

TABLE XIV

TITLE OF NEXT HIGHER POSITION NAMED BY RESPONDENTS

Accountant (3)
Accounts Payable Clerk
Accounts Payable Clerk No. 1
Accounts Payable Manager
Accounts Receivable Analyst
Accounts Receivable Clerk
Accounts Receivable Supervisor
Bookkeeper/Accountant (2)
Chief Clerk
Chief Payroll Clerk
Controller
Cost Accountant (3)
Credit Manager
General Accountant
General Accounting Supervisor
Head Bookkeeper
Manager, Accounting Department
Manager, Order Department
Payroll Supervisor Assistant
Senior Accounts Receivable Clerk
Senior Credit Partner

Promotional opportunities within the firm

In answer to the question of whether the respondent felt there were good chances for promotion within the firm, 54.9% said no and 31.3% said yes, with 13.8% leaving it blank.

A no answer was given by 56.9% to the question of whether the employee had received a promotion since beginning work, while 37.3% said they had received a promotion. Only 5.8% failed to answer.

The respondent's opinion on the basis for promotion within the company was asked in question 15.

TABLE XV

RESPONDENTS JUDGED BASES FOR PROMOTION

Basis for Promotion	No.	%*
Mainly job experience and performance	20	39.3
Equally between school training and job performance	11	21.5
Mainly formal school training	5	9.8
Failed to answer	15	29.4
Totals	51	100.0

*Percentages rounded to equal 100%

Two of the fifteen respondents who failed to answer, made comments: "None of the above" and "Haven't found out yet."

Of the five respondents who indicated formal schooling was the main basis for promotion, three had not received any promotion since

employment. All of the five had no post-high training in accounting, but had at least one course of accounting/bookkeeping/recordkeeping in high school.

This data would indicate to the researcher that some of the promotions the respondents received were, in actuality, merely horizontal transfers rather than vertical advancement on the career ladder. It seems evident from the next higher position named by the respondents (See Table XIV) that many of the next steps on the career ladder for the respondents would be in lower management and would require further school training in order to qualify.

Use of Computerized Accounting

The impact of modern computer technology was evidenced in the answers to questions 19-21 of the personal-data questionnaire, which asked whether the respondent's company used electronic data processing equipment, who owned it, and to what areas it applied in the accounting field. During the interview, other questions were asked about the respondents involvement with data processing.

It was determined that all fifteen companies, 100% of those involved in the survey, utilized the computer in some aspect of accounting, as 73.4% had on-premises computers (owned or leased) and 40% used outside computers. This 40% can be further analyzed into 26.6% which used only outside computer assistance and 13.4% which used both their own and outside sources.

One firm which used both in-house and external computers, used the outside source for only payroll. The other firm was in the process

of moving the accounting department from another city to Grand Rapids and were presently using the leased computer service locally until a new and larger computer was installed on premises, still using the in-house computer in the other city.

TABLE XVI

AREAS OF COMPUTER USAGE IN RESPONDENTS FIRMS

Accounting Area	No.	%
Accounts Payable	11	73.3
Accounts Receivable	13	86.6
Payroll	15	100.0
Inventory	11	73.3
Purchases	8	53.3
Sales	12	80.0

Because of the multiple involvement in computer usage, the totals of Table XVI cannot equal 15 nor 100%.

During the interviews, several interviewees indicated that they had heard plans for further expansion of computer services to areas other than those presently used in several of the companies.

It will be noted from Table XVI that no area other than payroll was 100%. No matter what the size of the company involved, it is impossible to computerize the accounting department all at once. Interviewees indicated changeovers had been taking place for several years, with manual and computerized accounting being used at the same time.

Analysis of Data Collected During Interviews

The 113 detailed job activities on the interview questionnaire are organized into twelve areas representing broad areas of instruction in high school accounting/bookkeeping. Some job activities were subdivided, requiring 126 responses from the interviewee. The writer wished to compare job activities actually performed by entry-level workers in accounting/bookkeeping/recordkeeping positions with the Recommended Michigan Minimum Vocational/Technical Program Performance Objectives for Bookkeepers (See Appendix D).

Each interviewee was asked to respond to two questions regarding each of the 113 job activities: Do you perform this task? and Where did you learn to perform it, school or on the job?

On the entry-level of job performance, job activities are limited in scope and each interviewee was not expected to perform all 113 job activities included on the questionnaire. As shown in an analysis of job duties earlier, most entry-level respondents performed relatively few different tasks.

Nineteen of the 126 items on the interview questionnaire were not covered in any of the Michigan Performance Objectives. These questions covered such items as whether the employee prepares debit memos, statements, credit memos, purchase orders, requisitions, and vouchers; kinds of filing done; what financial statements are prepared by the employee; and whether the worker figured due dates on invoices. They were included by the researcher in order to gain additional data on entry-level job activities.

TABLE XVII

JOB ACTIVITIES RELATED TO JOURNALIZING AND POSTING PERFORMANCE OBJECTIVES: PERCENTAGE OF RESPONDENTS WHO PERFORM THESE ACTIVITIES AND WHERE RESPONDENTS LEARNED TO DO ACTIVITIES

Section of Questionnaire		Job Activity	% of 51 Performing	Learned	
				School	Job
Accounts Payable	1.	Record or post invoices received from vendors/creditors . .	23.4	1.9	21.5
	2.	Post to creditors' accounts amount of debit memos or credit granted for merchandise returned or damaged goods	13.6	1.9	11.7
	4.	Post to vendors'/creditors' accounts amounts of cash paid to them	23.4	1.9	21.5
Accounts Receivable	1.	Record or post invoices directly to accounts of customers .	11.7	---	11.7
	2.	Post or record credit memos directly to customer accounts .	15.7	1.9	13.7
	8.	Record accounts written off as bad debts.	5.8	1.9	3.9
Purchases	3.	Code purchase invoices to indicate nature of goods received	9.8	---	9.8
	7.	Record purchase invoices in purchases journal	3.9	---	3.9
	8.	Post to proper accounts payable account from the purchases journal	1.9	---	1.9
	11.	Record debit memos in a journal	13.6	1.9	11.7
	14.	Enter vouchers in a voucher register.	1.9	---	1.9
Sales	2.	Make journal entries for credit memos	15.6	1.9	13.7
	8.	Make entries in a sales journal	13.6	1.9	11.7
	9.	Post sales journal to proper ledger	5.8	1.9	3.9
Cash Receipts	2.	Enter incoming checks in a cash receipts journal.	23.5	1.9	19.6
	5.	Total any cash journals, cash receipts registers, or any cash receipts records	5.8	1.9	3.9
	6.	Post transactions recorded in cash receipts journal to proper ledger or file	9.7	1.9	7.8

TABLE XVII (continued)

JOB ACTIVITIES RELATED TO JOURNALIZING AND POSTING PERFORMANCE OBJECTIVES: PERCENTAGE OF RESPONDENTS WHO PERFORM THESE ACTIVITIES AND WHERE RESPONDENTS LEARNED TO DO ACTIVITIES

Section of Questionnaire		Job Activity	% of 51 Performing	Learned	
				School	Job
Cash Payments	2.	Code checks or stubs by function or accounts	9.7	1.9	7.8
	3.	Record in cash payments journal issued checks.	21.5	---	21.5
	6.	Make journal entries recording operating expenses.	1.9	---	1.9
	8.	Make journal entries for bank charges.	3.8	1.9	1.9
	10.	Post journal entries to proper ledger.	7.7	1.9	5.8
Payroll	6.	Journalize and post payroll entry in the proper journal and ledger	5.8	---	5.8
	13.	Journalize and post transactions for tax liabilities in appropriate journal and ledger	3.9	---	3.9
Petty Cash	4.	Sort petty cash vouchers/slips before recording.	7.8	---	7.8
	5.	Post directly from petty cash journal to general ledger.	1.9	---	1.9
General Journal and General Ledger	1.	Record any entries in general journal.	7.8	---	7.8
	2.	Post from general journal to general ledger.	9.7	1.9	7.8
	3.	Record notes receivable/payable in general or other journal.	1.9	---	1.9
	4.	Record entries relating to interest income or expense.	---	---	---
	6.	Make correcting entries in general journal and post to general ledger	9.7	1.9	7.8
	7.	Make adjusting entries for accrued items	7.8	---	7.8
	8.	Post from combination journal to general ledger.	3.9	---	3.9
Data Processing	1.	Enter data on coding or input sheets for data processing	54.9	---	54.9
	4.	Enter coding information on business papers in preparation for data processing.	48.9	---	48.9
	6.	Enter corrections on coding/input forms for data processing.	52.9	---	52.9

Many of the performance objectives were included in at least two of the interview questions. One in the Data Processing section was omitted completely because it asked for a written examination on terms.

Journalizing and posting activities and performance objectives

Journalizing and posting performance objectives were covered in the questionnaire sections on Accounts Payable, Accounts Receivable, Purchases, Sales, Cash Receipts, Cash Payments, Payroll, Petty Cash, General Journal/General Ledger, and Data Processing (See Appendix D). Thirty-six items in the interview questions dealt with journalizing and posting.

Since two-thirds of the respondents had indicated that they had at least one course of accounting/bookkeeping/recordkeeping in high school and slightly over one-third of the respondents had post-high school training in accounting/bookkeeping/recordkeeping (See Tables II and II), the results of the Learned column are impressive. To the researcher the significance lies not so much in the greater percentage of respondents indicating they learned to do certain activities on the job rather than in school, but that they could not associate any school learnings with the actual job duties performed.

The findings do not necessarily mean that these activities were not taught, but that the interviewee had probably forgotten that they were taught, or could not make any association of conceptual learnings with practices being followed on the job. The teaching in high school should be directed toward more transference to the job, as was suggested in the earlier discussion of the data on the respondents judged ability to perform the job without previous accounting/bookkeeping/recordkeeping training.

The Michigan Performance Objectives indicate what accounting/bookkeeping skills a student should have when a two-year program in high school is completed. A student should be prepared to be a Bookkeeper I or Bookkeeper II as described in Chapter III, page 33. The researcher believes that there are very few openings as a bookkeeper for a high school graduate with one/two years of accounting/bookkeeping training, and that the emphasis in the performance objectives has been wrongly placed. This opinion is supported by studies From Frame, Luxner, Spanswick, and West (See Chapter II).

The analysis of the data in Table XVII support the above opinion that entry-level workers in accounting/bookkeeping/recordkeeping jobs are not given jobs as bookkeepers, but are given mainly clerical jobs in the bookkeeping area which do not require a use of the conceptual learnings which took place in high school accounting/bookkeeping/recordkeeping classes. Tables XVIII-XXIV continue to support this statement.

The data indicates that entry-level workers do perform the job activities of journalizing and posting, as included in the performance objectives; however, the results in the data processing section are very significant. No longer does a journal look like the journal pictured in the standard textbook. Most of the interviewees who indicated they performed the journalizing function were included in the 54.9% who entered data on coding or input sheets for data processing. The job function of journalizing is present, but the form has changed.

The researcher believes that the performance objectives are valid as listed insofar as they cover the theory of journalizing and posting. Unless an entry-level worker were employed in a business which used only

manual techniques in the accounting department, however, the skills and understandings which the student had would not be entirely applicable, and therefore the performance objectives are not realistic. Additional performance objectives should cover the skills and understandings a student should have in order to journalize and post when electronic data processing systems are used. A high school student in accounting/bookkeeping/recordkeeping should have instruction which includes the activities and forms utilized when electronic data processing is used. If this is done, students will be better prepared for entry-level positions in accounting/bookkeeping/recordkeeping.

Additional performance objectives which would be of value to the high school instructor and student would include reference to methods of discovering errors in recording and methods of proving accuracy of the journals and ledgers, whether the process is manual or electronic.

Cash accounting activities and performance objectives

The job activities related to cash accounting were found in the Cash Receipts, Cash Payments, Payroll, and Petty Cash sections of the interview questionnaire. Fifteen job activities were included as applying to cash accounting.

The Michigan Performance Objectives for cash accounting are primarily concerned with preparing deposit slips, completing a check and check stub/register, reconciling the bank statement, and accounting for petty cash (See Appendix D).

The greatest response to any item in those related to cash accounting was 25.4% for preparing checks and stubs for cash disbursements. Notes taken during the interviews by the researcher, however,

TABLE XVIII

JOB ACTIVITIES RELATED TO CASH ACCOUNTING PERFORMANCE OBJECTIVES:
PERCENTAGE OF RESPONDENTS WHO PERFORM THESE ACTIVITIES AND WHERE RESPONDENTS LEARNED TO DO ACTIVITIES

Section of Questionnaire		Job Activity	% of 51 Performing	Learned	
				School	Job
Cash Receipts	1.	Prepare a deposit slip for incoming checks after they have been recorded	17.5	1.9	15.6
Cash Payments	1.	Prepare checks and stubs (register or voucher record) for cash disbursements.	25.4	1.9	23.5
	2.	Code checks or stubs by function or account	21.5	---	21.5
	4.	Record in a check register checks that have been issued	17.5	1.9	15.6
	7.	Reconcile the bank statement with cash journal and checkbook	7.8	1.9	5.9
	11.	Write checks to reimburse petty cash fund	17.6	---	17.6
Payroll	5.	Prepare the payroll checks.	3.9	---	3.9
	11.	Prepare the necessary checks when filing government tax forms	9.7	1.9	7.8
Petty Cash	1.	Prepare petty cash slips or vouchers.	5.8	---	5.8
	2.	Record petty cash slips/vouchers in petty cash book or journal	5.8	---	5.8
	3.	Make payments from petty cash	5.8	---	5.8
	4.	Sort petty cash slips/vouchers before recording	7.8	---	7.8
	5.	Post directly from petty cash journal to general ledger	1.9	---	1.9
	6.	Have any responsibility for maintaining/proving/balancing the petty cash box or drawer.	7.8	---	7.8
	7.	Write a check to reimburse petty cash when needed	17.6	---	17.6

indicate that preparation of a check manually is the exception rather than the rule. Most employees who prepared checks indicated they prepared a list or transmittal sheet for computer-prepared checks. Computer-prepared checks then have to be verified, burst (separated), and signed manually or run through the check signer.

The writer believes this indicates that high school instruction in accounting/bookkeeping/recordkeeping should also have reference to computer-prepared checks, with emphasis that the same information is required whether the check is handwritten or computer prepared. Students should know that the printout balance has to balance out, just as check stub balances must do.

There were no performance objectives from the Michigan list which were not covered by at least one cash accounting job activity on the interview questionnaire. All job activities were performed by the interviewees with varying percentages: 1.9% to 25.4% of the employees. (See Table XVIII, page 87) As was the case with the journalizing/posting activities, an overwhelming number said they learned to do the activity on the job: Only five job activities with 1.9% for each, were indicated as having been learned in school. The comments made regarding the journalizing/posting performance objectives are also applicable to the cash accounting performance objectives: The researcher believes that the interviewee does not realize that some of the activities were studied in high school, and that the concepts apply to the activities now being performed on the job.

Inventory control activities and performance objectives

Only one performance objective is included in the Inventory Control division: Given a sales breakdown (by department, product line, etc.) the learner will calculate the new perpetual inventory totals with 90% accuracy. Six job activities are included in the interview questionnaire.

Not one employee involved in inventory control activities indicated they had learned how to perform any of their job activities in school. This is one instructional area in which these answers may be valid, since very little time is given in high school accounting/bookkeeping/recordkeeping to actual methods of inventory control. Much time is spent discussing merchandise inventory, perpetual and physical inventories, but little time is spent on activities showing how to calculate inventory and the various kinds of record forms used.

As shown in Table XIX on page 90, only 3.9% of the respondents had any connection with perpetual inventory records. However, others indicated they kept various kinds of inventory records, with the highest percentage recorded in inventory control (13.7%) being given to the job activity of recording or summarizing sales by department, product lines, or territories. This actually is the preparation of the "condition" part of the performance objective.

Insofar as entry-level workers do perform the tasks involved in the inventory control performance objective, it is valid. The writer believes, however, that the Michigan Performance Objectives should not be limited to one inventory control performance objective, and that additional performance objectives should be added to cover other methods

TABLE XIX

JOB ACTIVITIES RELATED TO INVENTORY CONTROL PERFORMANCE OBJECTIVES:
PERCENTAGE OF RESPONDENTS WHO PERFORM THESE ACTIVITIES AND WHERE RESPONDENTS LEARNED TO DO ACTIVITIES

Section of Questionnaire	Job Activity	% of 51 Performing	Learned	
			School	Job
Purchases	1. Record quantities purchased on inventory, stock, or open-to-buy records.	3.9	---	3.9
Merchandise Inventory Records	4. Maintain perpetual inventory records.	3.9	---	3.9
	5. Keep any of your inventory records by electronic data processing (computer)	7.8	---	7.8
Sales	3. Keep inventory records or records of merchandise stock numbers sold.	9.8	---	9.8
	13. Record or summarize sales by department, product lines, or territories	13.7	---	13.7
Data Processing	7. Enter inventory information on coding or input forms for data processing	9.8	---	9.8

of inventory control, including the increasing use of the computer in inventory control.

Payroll job activities and performance objectives

Payroll performance objectives were covered in the questionnaire section on payroll, where nine items included the skills and understandings of four performance objectives.

Not one of the seven payroll clerks indicated they had learned how to perform any of their job activities in school. Since a payroll clerk is considered an entry-level position, and all payroll clerks in the companies surveyed begin the payroll process with timecards, the researcher believes that more time should be spent in teaching the function of the time card and how to figure time cards of various types, including figuring piecework.

All of the companies in the survey used computerized accounting for the payroll function. None of the respondents indicated they completed a payroll register manually, but during the interview discussion indicated they realized the printout received from the computer was the payroll register.

The clerks who performed the other functions of payroll which are included in Table XX on page 92 indicated the figuring of withholdings and preparing payroll checks were for exceptions that did not go through the computer.

The performance objectives devoted to payroll seem to be valid and are well written. The writer would recommend, however, that more opportunity be given for high school students to experience the first

TABLE XX

JOB ACTIVITIES RELATED TO PAYROLL PERFORMANCE OBJECTIVES:
PERCENTAGE OF RESPONDENTS WHO PERFORM THESE ACTIVITIES AND WHERE RESPONDENTS LEARNED TO DO ACTIVITIES

Section of Questionnaire	Job Activity	% of 51 Performing	Learned	
			School	Job
Payroll	1. Compute regular time, overtime, and total hours from time cards showing "in" and "out" times.	13.7	---	13.7
	2. Calculate gross earnings of employees	7.8	---	7.8
	3. Figure piecework earnings of employees.	3.9	---	3.9
	4. Calculate withholdings for federal income tax, FICA, state income tax, and other deductions.	1.9	---	1.9
	5. Prepare the payroll checks.	3.9	---	3.9
	6. Journalize and post the payroll entry in the proper journal and ledger.	5.8	---	5.8
	8. Update the employee earnings record for each employee . . .	1.9	---	1.9
	9. Complete the payroll register for each pay period	---	---	----

step in the payroll process, that of figuring time cards. Additional performance objectives should be written which will recognize that many businesses now use the computer-prepared payroll, since entry-level workers in this survey actually completed only the first performance objective regarding time cards.

Taxes job activities and performance objectives

Three performance objectives are included in the taxes division of the Michigan Performance Objectives. Three questions in the interview questionnaire pertain directly to preparation of tax reports and two are related, preparing the necessary checks and journalizing/posting the necessary entries.

Table XXI on page 94 is a repetition of previous data tables in the dearth of answers in the school learnings column. The researcher must again state the probability that some conceptual teaching was given in high school classes regarding tax liabilities, but, as in the payroll activities, the teaching activities are more textbook oriented than practical.

If entry-level workers are going to work with and prepare information for government tax forms, some work should be done in the classroom on the actual forms to be used. This affirms the researcher's earlier statements that classroom instruction should reflect the business practices of the community. The textbooks most frequently used in the Grand Rapids area[1] do not include all of the tax forms included in the performance objectives. In order to meet the performance objective,

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[1] Swanson et al, op. cit. and Weaver et al, op. cit.

TABLE XXI

JOB ACTIVITIES RELATED TO TAXES PERFORMANCE OBJECTIVES:
PERCENTAGE OF RESPONDENTS WHO PERFORM THESE ACTIVITIES AND WHERE RESPONDENTS LEARNED TO DO ACTIVITIES

Section of Questionnaire	Job Activity	% of 51 Performing	Learned	
			School	Job
Taxes	1. Calculate the employer's payroll tax liability and journalize and post necessary entry in proper journal and ledger.	---	---	---
	10. Prepare and file any of the following forms:			
	a. Employer's annual federal unemployment tax return . . .	5.8	---	5.8
	b. Employer's quarterly federal tax return	3.9	---	3.9
	c. Withheld income and FICA tax.	5.8	---	5.8
	d. Wage and tax statements	1.9	---	1.9
	e. Reconciliation of income tax withheld and transmittal of tax statements	3.9	---	3.9
	f. Employee's withholding allowance certificate.	1.9	---	1.9
	g. Exemptions from:			
	1) withholding monthly sales, use, withholding tax return	1.9	---	1.9
	2) annual and monthly sales tax return.	3.9	---	3.9
	3) annual and monthly withholding tax return.	3.9	---	3.9
	11. Prepare any additional government tax forms	5.8	---	5.8
	12. Write the necessary checks when filing the forms in 10 & 11	9.7	---	9.7
	13. Journalize and post the transactions for tax liabilities in appropriate journal and ledger	3.9	---	3.9

the classroom teacher must obtain and use these forms as part of the teaching materials for a course in bookkeeping/accounting, whether the students are being prepared to be bookkeepers or entry-level clerical workers in accounting/bookkeeping/recordkeeping positions.

Not one employee reported calculating the employer's payroll tax liability and journalizing and posting the necessary entry. This, apparently, is a function given to management rather than to the entry-level workers who were interviwed. From that standpoint, this performance objective is not valid. Conversely, however, if an entry-level worker is to prepare some of the information to report these tax liabilities, a conceptual knowledge of why the forms are being prepared and filed should help in the worker's understanding of the job activity and contribute to his completion of the task.

Verification procedures job activities and performance objectives

The Verification Procedures division of the Michigan Performance Objectives include only two performance objectives (See Appendix D), and they are concerned with the verification of source documents and finding the errors causing an incorrect trial balance. The researcher included twenty-three questions on the interview questionnaire which could be related to verification procedures. See Table XXII, pages 96 and 97, for the complete listing and data.

It must be explained that the researcher intentionally broadened the questions on verification to include calculating balances, preparation of statements, comparison of various kinds of source documents, balancing of accounts receivable/payable schedules, etc. Since most

TABLE XXII

JOB ACTIVITIES RELATED TO VERIFICATION PROCEDURES PERFORMANCE OBJECTIVES:
PERCENTAGE OF RESPONDENTS WHO PERFORM THESE ACTIVITIES AND WHERE RESPONDENTS LEARNED TO DO ACTIVITIES

Section of Questionnaire	Job Activity	% of 51 Performing	Learned	
			School	Job
Accounts Payable	5. Calculate balances owed to creditors/vendors.	11.7	---	11.7
	6. Compare statements received from creditors/vendors with balances in their accounts.	23.4	1.9	21.5
	7. Prepare schedules or lists of account balances at the end of the month.	11.7	---	11.7
	8. If you prepare a schedule of accounts payable, are you responsible for making it equal its controlling account in the general ledger.	15.6	---	15.6
Accounts Receivable	3. Calculate balances in accounts.	25.4	1.9	23.5
	4. Prepare statements of accounts.	15.6	1.9	13.7
	5. Prepare schedules or lists of account balances at the end of the month.	9.7	1.9	7.8
	6. If you prepare a schedule of accounts receivable, are you responsible for making it equal its controlling account in the general ledger	9.7	1.9	7.8
Purchases	2. Compare merchandise received with purchase invoices received	15.6	---	15.6
	10. Prepare debit memos for merchandise returned or errors on purchase invoices	19.5	1.9	17.6
	12. Compare the amount total on purchase invoices with the amount budgeted for that item	3.9	---	3.9
Merchandise Inventory Records	3. Compare physical inventory count with inventory or stock records	3.9	---	3.9

TABLE XXII (continued)

JOB ACTIVITIES RELATED TO VERIFICATION PROCEDURES PERFORMANCE OBJECTIVES:
PERCENTAGE OF RESPONDENTS WHO PERFORM THESE ACTIVITIES AND WHERE RESPONDENTS LEARNED TO DO ACTIVITIES

Section of Questionnire	Job Activity	% of 51 Performing	Learned	
			School	Job
Sales	2. Prepare sales invoices.	21.5	1.9	19.6
	5. Verify the items (extensions, discounts, deductibles, freight charges) which another person has figured	31.3	3.9	27.4
	6. Prepare credit memos.	25.4	1.9	23.5
Cash Receipts	1. Calculate/verify any discounts, allowances, partial payments before recording incoming checks.	23.5	3.9	19.6
Cash Payments	5. Determine/verify/prove cash balances by comparing the check-book balance with balance of cash journal	5.8	1.9	3.9
Petty Cash	6. Have any responsibility for maintaining/proving/balancing the petty cash box or drawer.	7.8	---	7.8
Financial Statements	1. Prepare a trial balance of the general ledger	7.8	1.9	5.8
General Journal and General Ledger	6. Make correcting entries in general journal and post to the general ledger.	9.7	1.9	7.8
Data Processing	3. Compare (verify) data processing coding/input forms with original business papers or bookkeeping records	47.0	---	47.0
	5. Compare or balance data processing printouts with original business papers	58.8	---	58.8
	6. Enter corrections on coding or input forms for data processing.	52.9	---	52.9

entry-level employees would not be engaged in trial balance activites, the researcher felt that balancing schedules would be a comparable task.

The data in Table XXII indicates that verification procedures is a job activity which is engaged in by nearly one-third of the employees surveyed, with the exception of one activity in the data processing section of the questionnaire. That job activity was comparing or balancing data processing coding or input/output forms with original business papers or bookkeeping records, and was reported to be performed by 58.8% of the interviewees. To the researcher, this indicates the involvement of nearly three/fifths of the interviewees in some type of verifying activity, as well as indicating that employee involvement in computerized accounting is an important activity of entry-level workers.

During the interview, a common qualifying remark when answering yes to questions in this section was a variation of: "The computer prepares the list from my transmittal sheet and I verify it."

The researcher believes that the performance objectives in the Verification Procedures division should be rewritten to include more specific applications of verification procedures, some with direct references to computerized accounting.

Accrual and cash systems job activities and performance objectives

The performance objective in the Accrual and Cash Systems Division of the Michigan Performance Objectives require an understanding rather than a skill, since it asks the learner to describe a cash system and an accrual system for business. To test whether any entry-level workers handle accruals, one job activity question was included in the

interview questionnaire in the General Journal and General Ledger Section. The data is recorded in Table XXIII on page 100.

Only two people (3.9% of those interviewed) said they made adjusting entries for accrued items. They gave their job titles as Property Accounting Clerk and Accounting Clerk/Accounts Receivable. Neither listed this activity directly in their answer to the question regarding the ten most important activites of the job, although one did say she helped with the monthly end/closing activities. This does not appear to be an important activity for entry-level accounting workers.

Since the performance objective asks only that the student differentiate between the two systems: cash and accrual, the performance objective is valid for bookkeepers, but adds little to an entry-level worker's comprehension of job activities.

Data processing job activities and performance objectives

The Data Processing division of the Michigan Performance Objectives includes three performance objectives (See Appendix D). The first performance objective limits the student activity to computing the answers to addition problems, the second to a comparison of manual and data processing, and the last to preparing a flow chart to show data processing from input to output.

If one, however, accepts the definition of data processing as recording, sorting, classifying, calculating, summarizing, and reporting of data, then practically any activity performed by an office worker can be construed as processing of data. It was in this context that forty-seven job activities on the interview questionnaire were chosen as having

TABLE XXIII

JOB ACTIVITIES RELATED TO ACCRUAL AND CASH SYSTEMS PERFORMANCE OBJECTIVES: PERCENTAGE OF RESPONDENTS WHO PERFORM THESE ACTIVITIES AND WHERE RESPONDENTS LEARNED TO DO ACTIVITIES

Section of Questionnaire	Job Activity	% of 51 Performing	Learned	
			School	Job
General Journal and General Ledger	7. Make adjusting entries for accrued items	3.9	---	3.9

TABLE XXIV

JOB ACTIVITIES RELATED TO DATA PROCESSING PERFORMANCE OBJECTIVES: PERCENTAGE OF RESPONDENTS WHO PERFORM THESE ACTIVITIES AND WHERE RESPONDENTS LEARNED TO DO ACTIVITIES

Section of Questionnaire	Job Activity	% of 51 Performing	Learned	
			School	Job
Accounts Payable	3. Prepare debit memos for merchandise returned or damaged . .	23.4	1.9	21.5
	5. Calculate balances owed to creditors/vendors.	11.7	---	11.7
	7. Prepare schedules or lists of account balances at the end of the month.	11.7	---	11.7
Accounts Receivable	3. Calculate balances in accounts.	25.4	1.9	23.5
	4. Prepare statements of account	15.6	1.9	13.7
	5. Prepare schedules or lists of account balances at the end of the month.	9.7	1.9	7.8

TABLE XXIV (continued)

JOB ACTIVITIES RELATED TO DATA PROCESSING PERFORMANCE OBJECTIVES:
PERCENTAGE OF RESPONDENTS WHO PERFORM THESE ACTIVITIES AND WHERE RESPONDENTS LEARNED TO DO ACTIVITIES

Section of Questionnaire		Job Activity	% of 51 Performing	Learned	
				School	Job
Merchandise Inventory Records	1.	Keep cost records for manufacturing departments	1.9	---	1.9
	2.	Price or total merchandise for physical inventory	5.8	---	5.8
	4.	Maintain perpetual inventory records.	3.9	---	3.9
Sales	2.	Prepare sales invoices.	21.5	1.9	19.6
	3.	Keep inventory records or records of merchandise stock numbers sold.	9.8	---	9.8
	4.	Calculate for recording on sales invoices:			
		a. extensions.	17.5	1.9	15.6
		b. discounts	15.6	1.9	13.7
		c. deductibles	13.6	1.9	11.7
		d. freight charges	9.7	1.9	7.9
	5.	Verify the items in 4 which another person has calculated	31.3	3.9	27.4
	6.	Prepare credit memos.	25.4	1.9	23.5
	11.	Calculate salesmen's commissions.	9.8	---	9.8
	12.	Keep a record of salesmen's expenses.	3.9	---	3.9
	13.	Record or summarize sales by department, product lines, or territories	13.7	---	13.7
	14.	List or total sales invoices, credit memos, allowances.	23.5	3.9	19.6
	15.	Type (prepare) or file back orders.	9.8	---	9.8
Cash Receipts	1.	Calculate (verify) any discounts, allowances, or partial payments before recording incoming checks	23.5	3.9	19.6
	3.	Prepare a deposit slip for incoming checks after they have been recorded	17.5	1.9	15.6
	4.	Record bank deposits in a journal/checkbook	5.8	1.9	3.9
	5.	Total cash journals/receipts registers/records.	9.7	1.9	7.8

TABLE XXIV (continued)

JOB ACTIVITIES RELATED TO DATA PROCESSING PERFORMANCE OBJECTIVES:
PERCENTAGE OF RESPONDENTS WHO PERFORM THESE ACTIVITIES AND WHERE RESPONDENTS LEARNED TO DO ACTIVITIES

Section of Questionnaire	Job Activity	% of 51 Performing	Learned	
			School	Job
Cash Payments	4. Record in a check register checks that have been issued . .	17.5	1.9	15.6
	5. Determine or verify cash balances by comparing checkbook balance with balance of cash journal.	5.8	1.9	3.9
	7. Reconcile bank statement with cash journal and checkbook. .	7.7	1.9	5.8
Payroll	1. Compute regular time, overtime, and total hours from time-cards showing "in" and "out" times.	13.7	---	13.7
	2. Calculate gross earnings of employees	7.8	---	7.8
	3. Figure piecework earnings of employees.	3.9	---	3.9
	4. Calculate withholdings for federal income tax, FICA, state income tax, city income tax, and other deductions	1.9	---	1.9
	7. Calculate the employer's payroll tax liability and journal-ize and post the necessary entry in proper journal/ledger	---	---	----
	9. Complete the payroll register for each pay period	---	---	----
	10. Prepare and file any of the following forms:			
	a. Employers annual federal unemployment tax return. . . .	5.8	---	5.8
	b. Employers quarterly federal tax return.	3.9	---	3.9
	c. Withheld income and FICA tax.	5.8	---	5.8
	d. Wage and tax statements	1.9	---	1.9
	e. Reconciliation of income tax withheld and transmittal of tax statements	3.9	---	3.9
	f. Employee's withholding allowance certificate.	1.9	---	1.9
	g. Exemptions from			
	1) withholding monthly sales, use, withholding tax return.	1.9	---	1.9
	2) annual and monthly sales tax return	3.9	---	3.9
	3) annual and monthly withholding tax return	3.9	---	3.9

TABLE XXIV (continued)

JOB ACTIVITIES RELATED TO DATA PROCESSING PERFORMANCE OBJECTIVES:
PERCENTAGE OF RESPONDENTS WHO PERFORM THESE ACTIVITIES AND WHERE RESPONDENTS LEARNED TO DO ACTIVITIES

Section of Questionnaire	Job Activity	% of 51 Performing	Learned	
			School	Job
Petty Cash	4. Sort petty cash slips/vouchers before recording.	7.8	---	7.8
	6. Have any responsibility for maintaining/proving/balancing the petty cash box or drawer	7.8	---	7.8
Financial Statements	1. Prepare a trial balance of the general ledger.	7.8	---	7.8
	2. Prepare worksheets with adjustments, income statement, and balance sheet.	5.8	---	5.8
	3. Prepare balance sheets or income statements.	7.8	---	7.8
	4. Prepare comparative balance sheets or income statements. .	5.8	---	5.8
	5. Prepare income tax or franchise tax returns.	1.9	---	1.9
	6. Make a post-closing trial balance.	1.9	---	1.9
	7. Use financial statements as a basis for preparing current ratios, working capital, or merchandising turnover	3.9	---	3.9
General Journal and General Ledger	5. Calculate amounts of interest income/expense	---	---	----
Data Processing	1. Make calculations in connection with entering data on coding or input sheets for data processing	58.8	---	58.8
	8. Use flow charts to follow steps in processing data	3.9	---	3.9
	9. Prepare flow charts for data processing.	---	---	----

to do with data processing. They were scattered throughout the twelve sections of the questionnaire. Since many of them also applied to specific other performance objectives, they have been reported and discussed in previous sections.

The interview questionnaire section on Data Processing, however, directed questions toward the commonly accepted definition of data processing as being computerized or electronic data processing. The findings for these questions have been recorded in other sections of this chapter with the exceptions of questions 1, 8, and 9, which are included in Table XXIV on page 103.

Since 100% of the interviewees indicated the use of an adding machine or calculator as part of their job activities, it could be expected that job activities related to data processing would be widespread. The data in Table XXIV, pages 100-104, confirms this. Once more, however, the ten responses in the school learned column were less numerous than the thirty-seven saying they learned to do the job activity on the job.

The researcher again must state that in all probability the worker had some exposure to some of these activities in school, but is not making a transference of school learning to job activities.

The highest response for any question in the data processing area was 58.8% in answer to the question about making calculations in connection with entering data on coding or input sheets for data processing. indicating again the involvement of entry-level workers with computerized accounting.

In answer to the flow chart question, only two interviewees indicated they used any kind of a chart showing the steps in processing data. Both said it was, in actuality, only a list rather than a chart.

No one indicated the preparation of a flow chart for data processing steps, causing the researcher to question the validity of these two performance objectives.

The researcher believes, that in view of the findings of this survey, that the data processing performance objectives should be rewritten to clarify the computational aspect of data processing. Many of the calculations made involve more than adding a series of numbers, and the performance objective should reflect this.

The data processing sections should be expanded to provide for some performance objectives on computerized accounting, based on the findings of this study that computer usage is widespread.

The researcher believes that the lack of state-adopted performance objectives should not preclude the teaching of accounting as it relates to computerized accounting.

Miscellaneous job activities not directly covered by performance objectives

Nineteen questions were included in the interview questionnaire by the researcher as being job activities which are related to the accounting/bookkeeping function, but which had no specific performance objective covering the job activity. Included were such activities as the preparation of debit/credit memos, purchase orders, vouchers, and statements; and filing activities. These activities are often clerical, and, as such, would apt to be entry-level employee activities.

TABLE XXV

JOB ACTIVITIES NOT DIRECTLY RELATED TO ANY PERFORMANCE OBJECTIVES:
PERCENTAGE OF RESPONDENTS WHO PERFORM THESE ACTIVITIES AND WHERE RESPONDENTS LEARNED TO DO ACTIVITIES

Section of Questionnaire		Job Activity	% of 51 Performing	Learned	
				School	Job
Accounts Payable	3.	Prepare debit memos for merchandise returned or damaged. .	23.4	1.9	21.5
Accounts Receivable	4.	Prepare statements of account.	15.6	1.9	13.7
	7.	Age accounts receivable to find out how long past due. . .	13.6	1.9	11.7
Purchases	1.	Prepare purchase orders or requisitions.	1.9	---	1.9
	5.	Calculate due dates on purchase invoices/bills/vouchers. .	1.9	---	1.9
	6.	File invoices according to due dates	9.8	---	9.8
	13.	Prepare vouchers for purchases	5.8	---	5.8
Sales	1.	Decide or help decide to whom credit should be extended. .	9.8	3.9	5.9
	6.	Prepare credit memos	25.4	1.9	23.5
	10.	File invoices:			
		a. numerically.	17.6	3.9	13.7
		b. chronologically.	7.7	1.9	5.8
		c. alphabetically	13.7	3.9	9.8
Cash Payments	9.	Use a pegboard or "one-write" system for any cash payments	3.9	---	3.9
Payroll	14.	Use a pegboard or "one-write" system for preparing payroll	1.9	---	1.9
General Journal and General Ledger	5.	Calculate amounts of interest income/interest expense. . .	----	---	---

TABLE XXV (continued)

JOB ACTIVITIES NOT DIRECTLY RELATED TO ANY PERFORMANCE OBJECTIVES:
PERCENTAGE OF RESPONDENTS WHO PERFORM THESE ACTIVITIES AND WHERE RESPONDENTS LEARNED TO DO ACTIVITIES

Section of Questionnaire	Job Activity	% of 51 Performing	Learned	
			School	Job
Financial Statements	2. Prepare worksheets with adjustments, income statements, and balance sheets	5.8	---	5.8
	3. Prepare balance sheets or income statements.	7.8	---	7.8
	4. Prepare comparative balance sheets or income statements. .	5.8	---	5.8
	5. Prepare income tax or franchise tax returns.	1.9	---	1.9
	6. Make a post-closing trial balance.	1.9	---	1.9
	7. Use financial statements as a basis for preparing current ratios, working capital, or merchandising turnovers. . . .	3.9	---	3.9

The data reported on Table XXV on pages 106-7 indicate that entry-level employees do perform these activities. In fact, 25.4% of the interviewees indicated they prepared credit memos and 23.4%, debit memos. Only 1.9% each each case indicated they had learned to do this in school. If entry-level workers are going to prepare these forms on the job, they should have more preparation in their use during the high school accounting/bookkeeping/recordkeeping or clerical procedures courses.

Since filing invoices numerically, chronologically, or alphabetically is performed by 49% of those interviewed, some training should be given in each method in accounting/bookkeeping/recordkeeping, since students do not always take the clerical/secretarial procedures or office practice courses in which filing is traditionally taught. The business simulations (practice sets) could be an excellent source of practice materials if the regular textbook activities do not include any.

The aging of accounts receivable, according to the 13.5% of the interviewees who perform this task, is now done by the computer, even though the input is manually prepared. High school instructors should make students aware of this process and how it can be speeded up by the computer.

The researcher included the questions about the pegboard or "one-write" system because the locally used textbooks have emphasized this as a widely used, labor-saving device. Only one company in the survey reported using any one-write system and no one used a pegboard. It is more likely that these would be used in a smaller business which did not

have access to computerized accounting, particularly in the area of payroll.

The one-write system used was explained by the interviewee as simply making four copies (by carbon, NCR paper, or computer) and then using the copies as a journal, subsidiary ledger, and as customer's copies. Cash payments were also made in multiple copies with the original being the check and the extra being filed as the record. These actually represent examples of journalless/ledgerless accounting.

The questions about financial statements were included because traditionally the first-year accounting/bookkeeping course stresses the preparation of worksheets, statements, closing entries, etc. No one who reported working on statements had complete responsibility for their preparation. Several indicated they fed data to the computer or received printouts to verify. The fixed asset clerk prepared only that section of the balance sheet from the printout she received. No one reported as having learned to do these activities in school.

Analysis of Job Activities by Frequency of Occurrence

The job activities listed on the interview questionnaire have been further analyzed by frequency of occurrence.

Job activities performed by more than 40% of respondents

The highest frequency is in the section related to Payroll, in which 100% response was indicated for preparation of the payroll by electronic data processing. Each of the seven payroll clerks interviewed indicated they figured time cards and then prepared a transmittal sheet for processing of the payroll by computer.

TABLE XXVI

JOB ACTIVITIES PERFORMED BY MORE THAN 40% OF RESPONDENTS IN ORDER OF FREQUENCY

Section of Questionnaire		Job Activity	% of 51 Performing
Payroll	14.	Prepare payroll by electronic data processing.	100.0
Data Processing	1.	Make calculations in connection with entering data on coding or input sheets	58.8
	5.	Compare or balance printouts with original papers.	58.8
	2.	Enter coding on input sheets for data processing	54.9
	6.	Enter corrections on coding or input forms for data processing	52.9
Purchases	6.	File purchase invoices according to due dates. 9.8	
Sales	10.	File invoices numerically, chronologically, alphabetically . . 39.2 . .	49.0
Data Processing	4.	Enter coding information on business papers for data processing.	48.9
	3.	Compare (verify) data processing coding/input forms with original business papers or bookkeeping records	47.0

Two items in the Data Processing section were equal in frequency with 58.5% for each: Making calculations in connection with entering data on coding or input sheets for data processing and comparing the printouts received with the original papers. These two items should be considered of equal importance, also, since the final printout will be only as accurate as the original calculations and entering of data.

Since the computer printout becomes the journal or ledger accounts, the need to understand the accounting/bookkeeping concept has been reduced, but the need for accuracy in calculating, balancing, and verifying has been increased. Students must learn methods of detecting errors in their own work as well as careful work habits to comply with these needs.

The items in Table XXVI have further significance because the job activities involved and performed by more than 40% of the respondents are not directly stated in any of the performance objectives. Therefore, the activities engaged in by more than 40% of entry-level accounting/bookkeeping/recordkeeping workers in this survey are not included in the performance objectives for bookkeepers.

Job activities performed by from 40% to 20% of respondents

The job activities performed by more than 20% and less than 40% of the respondents appear to be largely clerical in nature, requiring little or no conceptual knowledge of accounting. Verification of calculations is the highest frequency item with 31.3%. Classroom teachers can develop this skill by having students assist other students in checking work for errors and in discovering the reasons for errors in calculations.

TABLE XXVII

JOB ACTIVITIES PERFORMED BY FROM 40% TO 20% OF RESPONDENTS IN ORDER OF FREQUENCY

Section of Questionnaire	Job Activity	% of 51 Performing
Sales	5. Verify items which another person has calculated	31.3
	6. Prepare credit memos	25.4
Accts. Rec.	3. Calculate balances in accounts	25.4
Cash Payments	1. Prepare checks for cash disbursements.	25.4
Accounts Pay.	1. Record or post invoices received from vendors/creditors for purchases.	23.5
	3. Prepare debit memos.	23.5
	4. Post to vendors/creditors accounts amounts of cash paid to them.	23.5
	6. Compare statements received from vendors/creditors with account balances	23.5
Purchases	10. Prepare debit memos.	23.5
Sales	14. List or total sales invoices, credit memos, allowances	23.5
Cash Rec.	1. Calculate (verify) any discounts, allowances, or partial payments before recording incoming checks.	23.5
	2. Enter incoming checks in a cash receipts journal	23.5
	5. Total cash journals, cash receipts registers, any cash receipts records.	21.5
Sales	2. Prepare sales invoices	21.5
Cash Pay.	2. Code checks or stubs by function or account.	21.5

TABLE XXVIII

JOB ACTIVITIES PERFORMED BY FROM 19% TO 10% OF RESPONDENTS IN ORDER OF FREQUENCY

Section of Questionnaire		Job Activity	% of 51 Performing
Sales	4.	Calculate extensions for recording on sales invoices	17.6
Cash Receipts	3.	Prepare deposit slip for incoming checks after they have been recorded	17.6
Cash Payments	4.	Record in a check register checks that have been issued.	17.6
	11.	Write checks to reimburse petty cash fund.	17.6
Petty Cash	7.	Write checks to reimburse petty cash fund.	17.6
Accts. Pay.	8.	Make accounts payable schedule balance with controlling account. . . .	15.6
Accts. Rec.	2.	Record or post credit memos to customers accounts.	15.6
	4.	Prepare statements of account.	15.6
Purchases	2.	Compare merchandise received with invoices	15.6
	5.	Calculate due dates on invoices.	15.6
Sales	4.	Calculate discounts on invoices.	15.6
	7.	Make journal entries for credit memos.	15.6
Accts. Pay.	2.	Post to creditors' accounts the amounts of debit memos	13.7
Accts. Rec.	7.	Age accounts receivable to determine past-due accounts	13.7
Purchases	11.	Record debit memos in a journal.	13.7
Sales	8.	Make entries in a sales journal.	13.7

TABLE XXVIII (continued)

JOB ACTIVITIES PERFORMED BY FROM 19% TO 10% OF RESPONDENTS IN ORDER OF FREQUENCY

Section of Questionnaire	Job Activity	% of 51 Performing
Sales	4. Calculate deductibles for recording on sales invoices.	13.7
	13. Record or summarize sales by department, product lines, territories. .	13.7
Payroll	1. Compute regular time, overtime, and total hours from time cards showing "in" and "out" times	13.7*
Accts. Pay.	5. Calculate balances owed to creditors	11.7
	7. Prepare schedules or lists of account balances	11.7
Accts. Rec.	1. Record or post invoices to customers accounts.	11.7
Cash Payments	3. Record in a cash payments journal checks that have been issued	11.7

*This figure represents 100% of the payroll clerks interviewed

Job activities performed by from 10% to 19% of respondents

Most of the activities in this grouping are also clerical in nature: calculating balances and due dates; calculating extensions, discounts, and deductibles; summarizing sales by department, product lines, or territories, etc. Conspicuous by its absence was any item in the Data Processing section referring to electronic data processing. Even though there are some journalizing and posting activities involved, few require much conceptual knowledge of accounting/bookkeeping.

Job activities performed by less than 10% of respondents

By far the largest grouping according to frequency is the one for job activities performed by less than 10% of the respondents as shown in Table XXIX, pages 116-19.

Three of the items with zero response (Payroll 7 and 9 and Data Processing 9) are directly covered by performance objectives. It would appear that some adjustment should be made in the performance objectives to recognize that entry-level workers do not do these activities.

Summary of Findings

The findings in this study show that the entry-level employee is not necessarily a recent high school graduate, since 58.8% of the workers surveyed were in the 25+ age grouping. Nor can entry-level employees be defined in terms of length of employment, since 31.3% of the respondents had been employed by their present employer for more than five years, and 21.5% had been performing their present job for more than five years.

TABLE XXIX

JOB ACTIVITIES PERFORMED BY LESS THAN 10% OF RESPONDENTS IN ORDER OF FREQUENCY

Section of Questionnaire		Job Activity	% of 51 Performing
Accts. Receiv.	5.	Prepare schedules or lists of account balances	9.8
	6	Make schedule balance with controlling account in general ledger . . .	9.8
Purchases	3.	Code purchase invoices to indicate nature of goods received.	9.8
Sales	1.	Decide or help decide to whom credit should be extended.	9.8
	3.	Keep inventory records or records of merchandise stock numbers sold. .	9.8
	4.	Calculate freight charges for sales invoices	9.8
	11.	Calculate salesmen's commissions	9.8
	15.	Type or file back orders	9.8
Cash Receipts	6.	Post transactions recorded in cash receipts journal to ledger/file . .	9.8
Payroll	12.	Write the necessary checks when filing government tax forms.	9.8
General Jnl. and Ledger	2.	Post from the general journal to the general ledger.	9.8
	6.	Make correcting entries in general journal and post to general ledger.	9.8
Data Proc.	7.	Enter inventory information on coding or input forms	9.8
Mdse. Inv. Records	1.	Keep inventory records by electronic data processing	7.8
Cash Payments	7.	Reconcile bank statement with cash journal and checkbook	7.8
	10.	Post journal entries to proper ledger (general/subsidiary)	7.8
Payroll	2.	Calculate gross earnings of employees.	7.8

TABLE XXIX (continued)

JOB ACTIVITIES PERFORMED BY LESS THAN 10% OF RESPONDENTS IN ORDER OF FREQUENCY

Section of Questionnaire		Job Activity	% of 51 Performing
Petty Cash	4.	Sort petty cash slips/vouchers before recording.	7.8
	6.	Have responsibility for maintaining/balancing/proving petty cash . . .	7.8
Financial Statements	1.	Prepare a trial balance of the general ledger.	7.8
	3.	Prepare balance sheets or income statements.	7.8
Gen. Journal and Ledger	1.	Record any entries in the general journal.	7.8
	7.	Make adjusting entries for any accrued items	7.8
Accts. Rec.	8.	Record accounts written off as bad debts	5.8
Purchases	13.	Prepare vouchers for purchases	5.8
Mdse. Inv. Records	2.	Price or total merchandise for physical inventory.	5.8
Cash Receipts	4.	Record bank deposits in a journal/checkbook.	5.8
Sales	9.	Post sales journal to proper ledger or file.	5.8
Cash Payments	5.	Determine or verify cash balance by comparing checkbook balance with cash journal balance	5.8
Payroll	6.	Journalize and post the payroll entry in proper journal/ledger	5.8
	10.	Prepare employer's annual federal unemployment tax return.	5.8
	11.	Prepare any additional tax forms other than those listed in Payroll 10	5.8
Petty Cash	1.	Prepare petty cash slips or vouchers	5.8

TABLE XXIX (continued)

JOB ACTIVITIES PERFORMED BY LESS THAN 10% OF RESPONDENTS IN ORDER OF FREQUENCY

Section of Questionnaire		Job Activity	% of 51 Performing
Petty Cash	2.	Record petty cash slips or vouchers in petty cash book or journal . . .	5.8
	3.	Make payments from petty cash	5.8
Financial Statements	2.	Prepare worksheets with adjustments, income statement, and balance sheet	5.8
	4.	Prepare comparative balance sheets or income statements	5.8
Purchases	4.	Record quantities purchased on inventory records.	3.9
	7.	Record purchase invoices in a purchases journal	3.9
	12.	Compare amount total on purchase invoice with amount budgeted for item.	3.9
Mdse. Inv. Records	4.	Maintain perpetual inventory records.	3.9
Sales	12.	Keep a record of salesmen's expenses.	3.9
Cash Payments	8.	Make journal entries for bank charges	3.9
	9.	Use pegboard or "one-write" system for cash payments.	3.9
Payroll	3.	Figure piecework earnings of employees.	3.9
	5.	Prepare payroll checks for employees.	3.9
	10.	Prepare and file employer's quarterly federal tax return; withheld income and FICA tax statements; exemptions from annual and monthly sales tax return and withholding tax return	3.9
	13.	Journalize and post the transactions for tax liabilities.	3.9
Financial Statements	7.	Use financial statements for preparing current ratios, working capital, or merchandise turnover	3.9
Gen. Jnl./Lgr.	8.	Post from a combination journal to the general ledger.	3.9

TABLE XXIX (continued)

JOB ACTIVITIES PERFORMED BY LESS THAN 10% OF RESPONDENTS IN ORDER OF FREQUENCY

Section of Questionnaire		Job Activity	% of 51 Performing
Purchases	1.	Prepare purchase orders or requisitions	1.9
	8.	Post to proper accounts payable accounts from the purchases journal	1.9
	9.	Post to general ledger from the purchases journal	1.9
	14.	Enter vouchers in a voucher register.	1.9
Mdse. Inv. Records	1.	Keep cost records for manufacturing departments	1.9
	3.	Compare physical inventory count with inventory or stock records.	1.9
Cash Payments	6.	Make journal entries to record operating expenses	1.9
Payroll	4.	Calculate withholdings for employee paychecks	1.9
	8.	Update the employee earnings records.	1.9
	10.	Prepare/file wage and tax statements; employees withholding allowance certificate; exemption from withholding monthly sales, use, withholding tax return.	1.9
Petty Cash	5.	Post from petty cash journal to general ledger.	1.9
Financial Statements	5.	Prepare income tax or franchise tax return.	1.9
	6.	Make a post-closing trial balance	1.9
Gen. Journal and Ledger	3.	Record notes receivable/payable in general or other journal	1.9
	4.	Record entries relating to interest income/expense.	---
	5.	Calculate amounts of interest income or interest expense.	---
Payroll	7.	Calculate employer's payroll tax liability and journalize/post the entry.	---
	9.	Complete the payroll register	---
Data Process.	9.	Prepare flow charts for data processing systems	---

All of the respondents were high school graduates and 66.7% had at least one semester of accounting/bookkeeping/recordkeeping in high school. Only 35.2% had post-high school training in accounting/bookkeeping/recordkeeping. Graduation from high school was a job requirement, but neither job experience nor previous training in accounting/bookkeeping/recordkeeping seem to be a controlling factor in obtaining an entry-level accounting/bookkeeping/recordkeeping position.

Since 47.1% of the respondents in the survey felt they could perform their job duties entirely without previous training in accounting/bookkeeping/recordkeeping, there appeared to be little transference of learning from high school to the job. This was further evident from the responses made during the interviews when no interviewee could associate any school learnings for 62.6% of the 126 questions about job activities. The responses were overwhelmingly on the side of on-the-job training. The data in this survey were unable to measure whether or not the employee may have learned faster on the job because of previous training in accounting/bookkeeping/recordkeeping.

Sorting and matching activities were frequently mentioned as a job activity for entry-level workers, as were processing cash receipts and doing calculating and verifying activities.

Although the typewriter was the most commonly used office machine with 84.3% indicating its use in the performance of job duties, 100% of the respondents used some kind of a calculating machine, either an adding/listing or a calculator, and 82.2% used some kind of a copying machine. Twenty or more hours weekly were spent in making calculations by 50.9% of respondents.

Entry-level workers' mean typing time was 8.1 hours weekly, while only 16.2% of those who type spend more than twenty hours weekly typing. Entry-level workers indicated their typing time is primarily concerned with filling in various kinds of forms; typing envelopes, letters, and memos.

The job titles given by respondents in the survey correspond to those given in the Dictionary of Occupational Titles for entry-level positions. Career paths were not readily discernible since many of the employees interviewed had transferred from other entry-level jobs rather than upward. Additional training, experience, or both were apparently the key to further advancement within the companies visited.

Typical tasks performed by entry-level workers are covered in the conceptual teaching of the accounting/bookkeeping classes in high school, since only five of the 113 questions had no responses. Practical experience in the preparation and use of actual source documents seems lacking. Failure of the high school instructor to use current business practice as a guide to instruction within the curricular framework could explain, in part, the almost complete lack of transfer of school learning to the job activities.

Computerized accounting was used in all of the companies surveyed and most entry-level employees had some contact with the job activities associated with it.

The Recommended Minimum Vocational/Technical Program Performance Objectives for Bookkeepers in Michigan appear to have some validity in that the tasks performed by entry-level workers are covered, although mainly by implication rather than by definition. The performance

Objectives lack any reference to computerized accounting. The Data Processing Division limits the type of data to be processed and is not current in its application to automated data processing.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Introduction

The purpose of this study was to provide sufficient data for determining whether the accounting curricula in the Grand Rapids Public Schools is providing the training needed by entry-level accounting/bookkeeping/recordkeeping employees for the job tasks defined in the Michigan Department of Education Recommended Minimum Vocational/Technical Program Performance Objectives for Bookkeepers, and to provide data for possible revision of the curricula.

Eight major questions were proposed:

1. What activities are engaged in by entry-level employees in accounting/bookkeeping/recordkeeping that are included in the high school curricula, specifically in the accounting course?

2. What activities engaged in by entry-level employees in accounting/bookkeeping/recordkeeping are not included in the high school curricula, especially in the accounting course?

3. What difference, if any, will be found in work activities in different sizes and types of businesses?

4. What specific types of equipment are used by entry-level employees in accounting/bookkeeping/recordkeeping positions?

5. When a computerized accounting system is used, what understanding of accounting concepts is required in entry-level job activities?

6. What are the effects of computerization on job opportunities in accounting/bookkeeping/recordkeeping and what are the implications of those effects for high school accounting curricula?

7. Are the activities in 1 consistent with the performance objectives for bookkeepers as outlined and adopted by the Michigan State Department of Vocational/Technical Education?

8. What career paths might be open to entry-level employees in the accounting/bookkeeping/recordkeeping field?

Fifteen manufacturing firms in the metropolitan Grand Rapids area agreed to participate in a survey in which entry-level employees were asked to complete a personal-data questionnaire and take part in a personal interview. Fifty-one employees were interviewed.

Questions on the personal-data questionnaire were concerned with age and educational preparation of the respondents, employment tenure, hiring requirements of the job, job titles and duties, machines used on the job, possible career paths, and contact with computerized accounting.

The personal interview was guided by an interview questionnaire asking about 113 job activities related to the school curricula and Michigan Performance Objectives for Bookkeepers.

After the statistical data was tabulated manually and by computer, the researcher constructed tables to present the major findings in an easily interpreted form.

Entry-level workers in this study were high school graduates, over half were more than 25 years of age, 31.3% had been employed by their present employer for more than five years, and 21.5% had been performing their present job for more than five years. Entry-level workers are

best defined in terms of the job activities rather than age and tenure of employment.

Two-thirds of the employees surveyed had taken at least one semester of accounting/bookkeeping/recordkeeping in high school, and slightly over one-third had some post-high school training in accounting/bookkeeping/recordkeeping. Neither job experience nor previous school training in accounting/bookkeeping/recordkeeping seemed to be the controlling factor in the employment of the respondents.

There was little indication of transference of learning from high school to the job, since 47.1% of the respondents said they could perform their job duties entirely without any previous accounting/bookkeeping/recordkeeping training. This apparent lack of learning transfer was further supported by the finding that in 62.6% of the 126 job activities listed, respondents said they learned to perform on the job rather than in school.

All of the respondents used either a calculator or an adding/listing machine in the performance of job duties, 84.3% used a typewriter, with 82.2% using some type of copying machine. Entry-level workers spend a great deal of time in sorting, matching, filing, and calculating activities. Computerized accounting was used for at least part of the accounting in all of the companies surveyed, and most entry-level employees had job activities associated with the computer. In order of frequency, those activities associated with the computer had the highest frequency.

In comparing the job activities of the entry-level workers with the performance objectives for bookkeepers, the job activities are more

finely defined than the performance objectives. Journalizing and posting are done by entry-level workers, but only on a small segment of the accounting system. The performance objectives lack reference to computerized accounting and are limited in type of data defined to be processed.

Conclusions

Based on the findings of this study, the following conclusions have been reached.

1. On the whole, activities engaged in by entry-level workers are included in the high school curricula, but not specifically in accounting. They include activities associated with journalizing and posting, but entry-level employees were usually concerned with only a section of an accounting system rather than being a full-charge bookkeeper. Clerical tasks which make up a large part of an entry-level workers' job activities may be associated with accounts payable, accounts receivable, purchases, sales, inventory, cash payments, cash receipts, payroll, and data processing. Entry-level employees did not primarily engage in accounting activities related to the general journal, general ledger, and the preparation of statements.

2. Activities engaged in which are not included in the accounting curricula were mainly clerical in nature: use of office machines, typing, filing, processing of source documents, and use of the computer-related source documents and equipment. Instruction in these areas is given in other courses within the office education curricula.

3. The work of the employee in the offices of smaller companies had a greater variety of job activities than those in the larger companies. The more employees in each department, the more specialized were the job activities of the employees in that department.

4. The office machines most commonly used by entry-level workers were typewriters, adding machines/calculators, and copying machines.

5. When a computerized accounting system is used, entry-level workers in accounting/bookkeeping/recordkeeping positions were primarily concerned with the processing of data, preparation of transmittal forms, and the verification and use of computer-prepared printouts. A conceptual understanding of accounting does not seem to be needed by entry-level workers in this function.

6. The analysis of job activities of the entry-level worker implies that as computerization of accounting systems increases, there will also be an increase in the number of workers needed in the processing of data, preparation of transmittal forms, and verification and use of computer-prepared data; and the operation of computer-related equipment. If most entry-level workers have job activities related to the computer, the school curricula, especially the accounting course, must be modified to include instruction which prepares the entry-level accounting/bookkeeping/recordkeeping workers to handle these activities.

7. The conceptual level of the Michigan Performance Objectives for bookkeepers exceeds the need of entry-level workers in accounting/bookkeeping/recordkeeping positions for the job activities in which they are involved. The Michigan Performance Objectives need revision in the data processing section to broaden the computational aspect. The other

sections of the performance objectives must also be revised to recognize the use of computerized accounting.

8. Career paths were not readily discernible in the entry-level positions surveyed because many of the job transfers made within the companies did not show upward mobility. Advancement to higher levels seemed to require additional experience and education.

9. An entry-level worker is best defined in terms of the job activities rather than age or employment tenure.

Recommendations

On the basis of the data obtained from this study, the following specific recommendations are made:

1. The Recommended Minimum Vocational/Technical Program Performance Objectives for Bookkeepers should be revised to recognize the impact of automated data processing on the accounting systems of business.

2. The Recommended Minimum Vocational/Technical Program Performance Objectives for Bookkeepers should be further revised to recognize that entry-level workers secure jobs which are commonly clerical. Research-based competencies should be the basis for revision. The Vocational Technical Education Consortium of States (V-TECS)[1] has available a catalog of accounting/bookkeeping/recordkeeping competencies which

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[1] A Catalog of Performance Objectives, Criterion-Referenced Measures and Performance Guides for Secretarial, Stenographic, Typing, and Related Occupations (Blacksburg, Virginia: Polytechnic Institute and State University; and Richmond: Division of Vocational Education and Division of Educational Research and Statistics, Virginia State Department of Education, July 1975).

would furnish the competencies most apt to be needed by potential office workers. Another set of office work components is available from the New Office and Business Education Learning Systems (NOBELS).[1] Additional local research should be undertaken where deemed necessary to develop adequate task analyses on which to base the performance objectives. The local Business Advisory Committee should be consulted for advice on where emphasis should be placed. Objective-referenced tests should be developed to accompany the performance objectives.

3. The first year of accounting/bookkeeping in the high school should continue to emphasize basic accounting/bookkeeping concepts which apply to all financial data, whether processed manually, by machine, or by computer. The curricula must integrate as much as possible the accounting concepts with those of automated data processing since these two can no longer be considered as separate disciplines.

4. The second year of accounting/bookkeeping in high school should become vocational in its approach, with students being familiarized with the work of general and specialized accounting clerks; such as accounts payable and accounts receivable clerks, cash receipts and cash payments clerks, inventory control clerk, payroll clerk, coding clerk, voucher clerk, etc. The transference of learning can be increased with a cooperative work program or internship for second-year students enrolled in the course, since the conceptual learning can be related to practical experience.

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[1] F. Lanham et al, Development of Performance Goals for a New Office and Business Education Learnings System (NOBELS). Project No. 8-0414, U. S. Office of Education, Bureau of Research, 1970.

5. Teachers in accounting/bookkeeping/recordkeeping should be encouraged and taught how to teach for transfer of learning by specifically demonstrating the application of learned knowledge and skills. Teachers must become knowledgeable of local practices, types of business forms used locally, and any needed skills unique to the local area.

6. Students who are enrolled in accounting/bookkeeping and planning to engage in related employment following graduation from high school should be encouraged to take additional classes in the business curricula in high school which will improve their typing (keyboarding) skill and machine-operation skills, thus improving their chances of securing the desired employment.

7. Students who are enrolled in accounting/bookkeeping should be given both general and specific counseling about how the course can fit into their career plans. Although the profession of accountancy is at the top of the career ladder, the student should know that there are many satisfying jobs on each rung of the ladder from entry-level on up.

8. If a new set of performance objectives is written and implemented in Grand Rapids Public Schools using the above recommendations, a future research study should be made to determine if the amount of transfer of learning is greater when students are prepared for employment in accounting/bookkeeping/recordkeeping positions using performance objectives which are based on task analyses and include objective-referenced testing.

APPENDIXES

APPENDIX A

LIST OF PARTICIPATING BUSINESSES

R. C. Allen, Incorporated
Product: Electronic Cash Registers and Aircraft Flight Instruments
Employees: 272

American Seating Company
Product: Public Seating and Institutional Furniture, Gray Iron Products and Transportation Seating
Employees: 1,000

Baker Furniture Company
Product: Household and Office Furniture
Employees: 464

Bissell, Incorporated
Product: Home Care Devices and Chemicals
Employees: 450

Grand Rapids Metalcraft Division
Product: Automotive Stampings and Assemblies and TV Picture Tube Frames
Employees: 450

Grand Rapids Press
Product: Daily Newspaper
Employees: 475

Grocers Baking Company
Product: Variety breads, Hot dog/hamburger buns, Cakes, Sweet rolls, Yeast-raised donuts and pies
Employees: 550

Leon Chemical Company
Product: Injection Molded Automotive Parts and Plastic Parts for the Furniture Industry
Employees: 650

Leslie Metal Arts Company, Incorporated
Product: Automotive Decorative Hardware, Light Assemblies, Stamping Tools, Dies, and Builders Hardware
Employees: 690

Oliver Machinery Company
Product: Gray Iron Castings, Machine Tools, Packaging Machinery, Labelers, Slicers, and Labels
Employees: 510

Reynolds Metal Company
Product: Aluminum Extrusions of Tubing and Billets
Employees: 470

Rowe International, Incorporated
Product: Juke Box, Currency Changer, and Background Music
Employees: 350

Walter Hagen Golf Equipment
Product: Golf Clubs and Balls
Employees: 350

Westinghouse Electric Corporation
Product: Movable Office Furniture, Seating, ASD Group, Computer Room Access Flooring Movable Partitions
Employees: 350

Zin-Plas Corporation, Grand Rapids Die Casting Corporation
Product: Plumbing Components, Die Casting and Plating
Employees: 300

APPENDIX B

PERSONAL-DATA QUESTIONNAIRE

Your Name _____

Firm _____ Job Title _____

1. Age: 16-24 _____ 25+ _____ 2. High School Graduate? Yes__ No__

3. While in High School, did you study:
   a. No accounting, bookkeeping, or recordkeeping. . . . . _____

   b. Recordkeeping. . . . . 1 year _____ 2 years _____

   c. Accounting or bookkeeping. . . . 1 year _____ 2 years _____

   d. Clerical Procedures. . . . . 1 year _____ 2 years _____

4. Did you attend (circle number of years)
   a. Private business school. . . ½ 1 1½ 2 2½ 3

   b. Junior or Community College. ½ 1 1½ 2

   c. 4-Year College . . . . . ½ 1 1½ 2 2½ 3 3½ 4

   d. Degree? _____

5. How many accounting/bookkeeping courses have you taken since leaving high school? _____

6. How long have you worked for your present employer? _____

7. How long have you worked on this job for your present employer?_____

8. Did you learn or could you have learned to perform your present job duties without previous school training in accounting/bookkeeping?
   Entirely _____ Mostly _____ Partly _____ No _____

9. For your present job, did your employer require you to have
   a. Previous school training in accounting/bookkeeping? Yes ___No___

   b. Previous job experience in accounting/bookkeeping? Yes ____No___

10. On your present job, what percentage of time do you spend directly on accounting/bookkeeping? (Estimate)
    25% _____ 50% _____ 75% _____ 90% _____

11. What is the title of the next higher position above yours? _____

12. Do you think there are good chances for promotion here? Yes___ No___

13. Have you had a promotion since beginning work here?. . .Yes___ No __

14. If so, what was your job title before your present one?_____

15. Circle the letter that most nearly indicates what promotion depends upon in your firm:
    a. Mainly formal school training
    b. Mainly job experience and performance
    c. Equally between school training and job experience

16. What machines do you use on your job? Please check.

_____ Typewriter	_____ Bookkeeping machine
_____ 10-key adding/listing	_____ Billing machine
_____ 10-key electronic calculator	_____ Xerox or other copier
_____ Full-key adding/listing	_____ Duplicator (offset, spirit, mimeo)
_____ Full-key rotary calculator	
_____ Comptometer	_____ Computer terminal console
_____ Keypunch	_____ Key-to-tape data entry
_____ Checkwriter	_____ Cathode ray tube unit
	_____ OCR equipment

Other??_____

17. If you indicated in question 16 that you use a typewriter, how many hours a week do you spend typing? _____

18. If you do type, what kinds of things do you type?
    _____Fill in forms or other business papers (invoices, purchase orders, tax forms, checks, payroll forms, etc.)

_____Letters or memos	_____Reports
_____Statistical tables	_____Envelopes

Other??_____

19. Does your company use electronic data processing or equipment in the accounting/bookkeeping system? _____

20. If your answer to question 19 was yes, to what areas does it apply?

_____ Accounts Payable	_____ Inventory
_____ Accounts Receivable	_____ Purchases
_____ Payroll	_____ Sales

Other??_____

21. If your answer to question 19 was yes, is the work done on

_____ your own equipment? _____ outside equipment?

22. About how many hours a week do you spend making calculations (either manually or with a machine)? This would include taking totals, subtracting or figuring discounts, verifying amounts, etc.

_____

23. In general, is your work checked by someone else or do you have final responsibility for its correctness?

You _____ Someone else _____

24. What percentage of your time (roughly) do you spend in copying data from one record to another (not counting permanent records)?

_____%

25. Do you do any of your copying or business documents in handwriting?

Yes _____ No _____

26. Was your handwriting tested before employment? Yes _____ No _____

27. List in order from the most to the least, the 10 most important activities of your job. Try to decide what percentage of your time is involved in each.

1. _____ ____%
2. _____ ____%
3. _____ ____%
4. _____ ____%
5. _____ ____%
6. _____ ____%
7. _____ ____%
8. _____ ____%
9. _____ ____%
10. _____ ____%

NOTE: When presented to the respondent, the personal-data questionnaire was reduced in size and reproduced to fit entirely on an 8½-inch by 11-inch sheet of paper.

APPENDIX C

INTERVIEW QUESTIONNAIRE

Employee _____ Firm _____

	Perform		Where Learned	
A. ACCOUNTS PAYABLE	Yes	No	School	On Job
Do you . . .				
1. Record or post invoices received from vendors/ creditors for purchases.				
2. Post to creditors' accounts the amount of debit memos or credit granted by them for merchandise returned or damaged goods.				
3. Prepare debit memos for merchandise returned or damaged.				
4. Post to vendors'/creditors' accounts amounts of cash paid to them.				
5. Calculate balances owed to creditors/vendors . . .				
6. Compare statements received from creditors/ vendors with balances in their accounts.				
7. Prepare schedules or lists of account balances at the end of the month				
8. If you prepare a schedule of accounts payable, are you responsible for making it equal its controlling account in the general ledger.				
B. ACCOUNTS RECEIVABLE				
Do you . . .				
1. Record or post invoices/bills directly to the accounts of customers.				
2. Record or post credit memos directly to customer accounts.				
3. Calculate balances in accounts				
4. Prepare statements of accounts				
5. Prepare schedules or lists of account balances at the end of the month				
6. If you prepare a schedule of accounts receivable, are you responsible for making it equal its controlling account in the general ledger.				
7. Age accounts receivable to find out how long they are past due				
8. Record accounts written off as bad debts				

C. PURCHASES Do you . . .	Perform		Where Learned	
	Yes	No	School	On Job
1. Prepare purchase orders or requisitions.				
2. Compare merchandise received with purchase invoices/bills received.				
3. Code purchase invoices or bills to indicate the nature of goods received				
4. Record quantities purchased on inventory, stock, or open-to-buy records				
5. Calculate due dates on purchase invoices/bills/ vouchers				
6. File purchase invoices/bills according to due dates.				
7. Record purchase invoices/bills in a purchases journal.				
8. Post to the proper accounts payable account from the purchases journal.				
9. Post to the general ledger from the purchases journal.				
10. Prepare debit memos (credit slips) for merchandise returned or errors on purchase invoices.				
11. Record debit memos in a journal.				
12. Compare the amount total on purchase invoices with the amount budgeted for that item				
13. Prepare vouchers for purchases				
14. Enter vouchers in a voucher register				
D. MERCHANDISE INVENTORY RECORDS Do you . . .				
1. Keep cost records for manufacturing departments. .				
2. Price or total merchandise for physical inventory.				
3. Compare physical inventory count with inventory or stock records				
4. Maintain perpetual inventory records				
5. Keep any of your inventory recores by electronic data processing (computer)				

E. SALES

Do you . . .	Perform		Where Learned	
	Yes	No	School	On Job
1. Decide or help decide to whom credit should be extended.				
2. Prepare sales invoices.				
3. Keep inventory records or records of merchandise stock numbers sold.				
4. Calculate for recording on sales invoices:				
a. extensions.				
b. discounts				
c. deductibles				
d. freight charges				
5. Verify the items in 4 which another person has calculated.				
6. Prepare credit memos.				
7. Make journal entries for credit memos (returns/ allowances.				
8. Make entries in a sales journal				
9. Post sales journal to proper ledger (general, accounts receivable ledger or file)				
10. File invoices:				
a. numerically				
b. chronologically				
c. alphabetically.				
11. Calculate salesmen's commissions				
12. Keep a record of salesmen's expenses				
13. Record or summarize sales by department, product lines, or territories				
14. List or total sales invoices, credit memos, or allowances				
15. Do you type (prepare) or file back orders.				

Do you . . .	Perform		Where Learned	
	Yes	No	School	On Job
F. CASH RECEIPTS				
1. Calculate (verify) any discounts, allowances, or partial payments before recording incoming checks.				
2. Enter incoming checks in a cash receipts journal .				
3. Prepare a deposit slip for incoming checks after they have been recorded.				
4. Record the bank deposits in a journal/checkbook. .				
5. Total cash journals, cash receipts registers, or any cash receipts records.				
6. Post transactions recorded in cash receipts journal to proper ledger (general or subsidiary) or file.				
G. CASH PAYMENTS				
1. Prepare checks and stubs (register or voucher record) for cash disbursements				
2. Code checks or stubs by function or account. . . .				
3. Record in cash payments journal checks that have been issued.				
4. Record in a check register checks that have been issued				
5. Determine or verify (prove) cash balances by comparing the checkbook balance with balance of cash journal				
6. Make journal entries to record any operating expenses				
7. Reconcile the bank statement with cash journal and checkbook.				
8. Make journal entries for bank charges.				
9. Use a pegboard or "one-write"system for any cash payments				
10. Post journal entries to proper ledger (general/ subsidiary)				
11. Write checks to reimburse petty cash				

H. PAYROLL

Do you . . .	Perform		Where Learned	
	Yes	No	School	On Job
1. Compute regular time, overtime, and total hours from time cards showing "in" and "out" time . . .				
2. Calculate gross earnings of employees				
3. Figure piecework earnings of employees.				
4. Calculate withholdings for federal income tax, FICA, state income tax, city income tax, and other deductions.				
5. Prepare the payroll checks.				
6. Journalize and post the payroll entry in the proper journal and ledger				
7. Calculate the employer's payroll tax liability and journalize and post the necessary entry in the proper journal and ledger				
8. Update the employee earnings records for each employee.				
9. Complete the payroll register for each pay period.				
10. Prepare and file any of the following forms:				
a. Employer's annual federal unemployment tax form.				
b. Employer's quarterly federal tax return . . .				
c. Withheld income and FICA taxes.				
d. Wage and tax statements				
e. Reconciliation of income tax withheld and transmittal of tax statements				
f. Employee's withholding allowance certificate.				
g. Exemptions from				
1) withholding monthly sales, use, and withholding tax return.				
2) annual and monthly sales tax return. . . .				
3) annual and monthly withholding tax return.				
11. Prepare any additional government tax forms . . .				
12. Write the necessary checks when filing the forms in 11				
13. Journalize and post the transactions for tax liabilities in appropriate journal and ledger . .				
14. Use a pegboard or "one-write" system for preparing payroll				
15. Prepare your payroll by electronic data processing (computer).				

I. PETTY CASH Do you . . .	Perform		Where Learned	
	Yes	No	School	On Job
1. Prepare petty cash slips or vouchers				
2. Record petty cash slips/vouchers in petty cash book or journal.				
3. Make payments from petty cash.				
4. Sort petty cash slips/vouchers before recording. .				
5. Post directly from petty cash journal to general ledger				
6. Have any responsibility for maintaining and proving or balancing the petty cash box or drawer.				
7. Write a check to reimburse petty cash.				
J. FINANCIAL STATEMENTS Do you . . .				
1. Prepare a trial balance of the general ledger. . .				
2. Prepare worksheets with adjustments, income statement, and balance sheet				
3. Prepare balance sheets or income statements. . . .				
4. Prepare comparative balance sheets or income statements				
5. Prepare income tax or franchise tax returns. . . .				
6. Make a post-closing trial balance.				
7. Use financial statements as a basis for preparing current ratios, working capital, or merchandising turnover				

	Prepare		Where Learned	
	Yes	No	School	On Job
K. GENERAL JOURNAL AND GENERAL LEDGER				
Do you . . .				
1. Record any entries in the general journal.				
2. Post from the general journal to the general ledger				
3. Record notes receivable or notes payable in the general or other journal				
4. Record entries relating to interest income or interest expense				
5. Calculate amounts of interest income or interest expense.				
6. Make correcting entries in the general journal and post to the general ledger				
7. Make adjusting entries for accrued items				
8. Post from a combination journal to the general ledger				
L. DATA PROCESSING				
Do you . . .				
1. Make calculations in connection with entering data on coding or input sheets for data processing. . .				
2. Enter data on coding or input sheets for data processing				
3. Compare (verify) data processing coding or input forms with original business papers or bookkeeping records.				
4. Enter coding information on business papers in preparation for data processing.				
5. Compare or balance data processing printouts with original business papers				
6. Enter corrections on coding or input forms for data processing.				
7. Enter inventory information on coding or input for data processing.				
8. Use flow charts to follow steps in processing data				
9. Prepare flow charts for data processing systems. .				

M. HAVE WE FORGOTTEN ANYTHING? Is there anything else you do in the general field of accounting/bookkeeping/recordkeeping that we have not asked about? If so, please list those activities below:

_____

_____

APPENDIX D

MICHIGAN DEPARTMENT OF EDUCATION
RECOMMENDED MINIMUM VOCATIONAL/TECHNICAL PROGRAM PERFORMANCE OBJECTIVES

Occupational Designation: Bookkeepers

U.S.O.E. Code Number: 14.0102

Upon completion of this program, students will have the following skills and understandings as measured by teacher-made objectives referenced tests (ORT's), unless otherwise indicated:

I. Handwriting

1. Given any material, the learner will write or print so well that any document prepared by the learner will be usable according to an authoritative text or equivalent reference manual.

II. Journalizing and Posting

1. Given 25 business transactions, the learner will journalize the debits and credits in a combination journal with 90% accuracy.

2. Given a completed combination journal with 25 journalized transactions, the learner will select the correct accounts and post the debits and credits with 90% accuracy.

3. Given 25 business transactions, the learner will select the correct journal and journalize the debits and credits with 90% accuracy.

4. Given a completed set of special journals with 25 journalized transactions, the learner will select the correct accounts and post the debits and credits with 90% accuracy.

5. Given 25 Accounts Payable/Accounts Receivable business transactions, the learner will journalize and post the entries in a special journal with 90% accuracy.

6. Given 25 Accounts Receivable/Accounts Payable business transactions, the learner will journalize and post the entries in a combination journal with 90% accuracy.

7. Given 25 business transactions relating to distribution (i.e., departmental sales, profit-margin groups, product lines, sales territories, etc.), the learner will journalize and post with 90% accuracy.

8. Given 10 business transactions affecting purchases on account and sales on account, the learner will select the proper account in the subsidiary ledger and post it for all transactions with 100% accuracy.

9. Given 10 business transactions affecting cash sales and cash purchases, the learner will select the proper account in the subsidiary ledger and post it for all transactions with 100% accuracy.

10. Given an incorrectly posted transaction, the learner will prepare, journalize, and post the correcting entry with 100% accuracy.

III. Cash Accounting

1. Given a bank deposit slip and a list of checks, currency, and coins, the learner will prepare a check account deposit slip with 100% accuracy.

2. Given a blank check, check stub or check register, and the amount owed, the learner will fill in the check stub or register and write the check in accordance with the American Bankers Association requirements.

3. Given a list of cancelled checks, deposit slips, current and previous month bank statements, and a check register or check stubs, the learner will reconcile the bank statements with 100% accuracy.

4. Given 10 petty cash transactions, the learner will
   1. Disperse the fund
   2. Balance the fund
   3. Categorize (i. e., departmentalize, distribute, etc.)
   4. Reimburse the fund
   5. Journalize and post

   with 100% accuracy.

IV. Inventory Control

1. Given a sales breakdown (by department, product, line, etc.) the learner will calculate the new perpetual inventory totals with 90% accuracy.

V. Payroll

1. Given 10 time cards with the "in" and "out" time punched for a week and the necessary supporting information, the learner will compute the regular, overtime, and total hours worked and gross earnings with 90% accuracy.

2. Given the computed gross wages for the current period, the employee earnings record from the previous pay period, and the necessary tax publications, the learner will complete the payroll register with 90% accuracy.

3. Given a completed payroll register for 10 employees and the necessary forms, the learner will complete the employee check stub and the payroll check with 90% accuracy.

4. Given a completed payroll register and the necessary forms, the learner will journalize and post the payroll entry, and write the check to cover payroll with 100% accuracy.

VI. Taxes

1. Given the necessary information, the learner will determine the employer's payroll tax liability and journalize and post the liability with 100% accuracy.

2. Given the following forms:
   940 - Employers Annual Federal Unemployment Tax Return
   941 - Employers Quarterly Federal Tax Return
   501 - Withheld Income and FICA Taxes
   508 - Federal Tax Deposit for Unemployment Taxes
   W-2 - Reconciliation of Income Tax Withheld and Transmittal of Tax Statements
   W-4 - Employee's Witholding Allowance Certificate
   W-4E- Exemption from Withholding
   - Monthly Sales, Use and Withholding Tax Return (State of Michigan)
   - Annual and Monthly Sales Tax Return (State of Michigan)
   - Annual and Monthly Withholding Tax Return (State of Michigan)
   1020- MESC Form (State Unemployment Tax)
   the learner will determine the filing date and complete each form to meet the guidelines established by the Federal or State Government.

3. Given the necessary information, the learner will write the necessary checks for the employer's tax liabilities, journalize and post these transactions with 90% accuracy.

VII. Verification Procedures

1. Given 25 source documents, the learner will verify the entire source document, with 100% accuracy.

2. Given an incorrect trial balance, source documents, journals, and ledgers, the learner will trace the errors and make the necessary correcting entries to cause the trial balance to balance.

VIII. Accrual and Cash Systems

1. Given a description of transactions for a business, the learner will describe a cash system and an accrual system according to an authoritative text or its equivalent reference material.

IX. Data Processing

1. Given a 10-key adding machine and an assortment of addition problems, the learner will compute the answers within an appropriate, specified time, with 90% accuracy.

2. Given a written examination, the learner will compare and contrast the manual and electronic data processing cycle, define common data processing terms, and describe input media with 80% accuracy.

3. Given source documents, the learner will flow chart the path from input to output, including processing, according to an authoritative text or equivalent reference material.

APPENDIX E

CROSS INDEX OF MACHIGAN PERFORMANCE OBJECTIVES AND INTERVIEW QUESTIONNAIRE

The Roman numeral sections represent the divisions of the Michigan Performance Objectives. The listing of letter and sections (for example, C - 11) represents the section of the interview questionnaire and the number of the question within that section. For reference, a list of the sections of the interview questionnaire is given below.

A. Accounts Payable
B. Accounts Receivable
C. Purchases
D. Merchandise Inventory Records
E. Sales
F. Cash Receipts
G. Cash Payments
H. Payroll
I. Petty Cash
J. Financial Statements
K. General Journal and General Ledger
L. Data Processing

I. Handwriting

This was covered in the personal-data questionnaire.

II. Journalizing and Posting

1.	A - 1	A - 4	B - 8	C - 11	D - 7	F - 1
	G - 6	G - 8	H - 6	H - 13	K - 4	K - 5
	L - 2	L - 4				
2.	A - 1	A - 2	A - 4	G - 10	H - 6	H - 13
	K - 8					
3.	A - 1	A - 4	B - 1	B - 14	C - 7	C - 11
	C - 14	E - 7	E - 8	F - 1	F - 2	G - 3
	G - 4	G - 6	G - 8	H - 6	H - 7	H - 13
	K - 3	K - 4	K - 6			
4.	A - 1	A - 2	A - 4	B - 2	B - 3	C - 8
	C - 9	E - 9	F - 6	G - 10	H - 13	K - 2
5.	A - 1	A - 2	A - 4	B - 2	B - 8	C - 3
	C - 7	C - 8	C - 9	C - 11	E - 7	E - 8
	E - 9	F - 2	F - 6	G - 6	G - 8	G - 10
	K - 3					

6. A - 1 A - 2 A - 4 B - 1 B - 2 B - 8
C - 11 E - 7 E - 8 E - 9 F - 2 G - 10

7. E - 3 E - 7 E - 8 E - 9 E - 11 E - 12
E - 13 F - 12

8. A - 1 A - 2 A - 4 A - 5 B - 3 C - 11
F - 2 F - 6 G - 10

9. A - 1 A - 2 F - 6 G - 10

10. K - 6 K - 7

III. Cash Accounting

1. F - 3

2. G - 1 G - 2 G - 4 G - 11 H - 5 H - 12
I - 7

3. G - 7

4. G - 11 I - 1 I - 2 I - 3 I - 4 I - 5
I - 6 I - 7

IV. Inventory Control

1. C - 4 D - 4 D - 5 E - 3 E - 11 L - 7

V. Payroll

1. H - 1 H - 2 H - 3

2. H - 4 H - 9

3. H - 5 H - 8

4. H - 6

VI. Taxes

1. H - 7

2. H - 10 H - 11 J - 5

3. H - 12 H - 13

VII. Verification Procedures

1.	A - 5	A - 6	B - 3	B - 4	B - 5	C - 10
	C - 12	D - 3	E - 2	E - 4	E - 6	E - 11
	F - 1	G - 5	I - 6	L - 1	L - 3	L - 5
	L - 6	E - 5				
2.	A - 7	A - 8	B - 5	B - 6	J - 1	K - 6

VIII. Accrual and Cash Systems

1. K - 7

IX. Data Processing

1.	A - 3	A - 5	A - 7	B - 3	B - 4	B - 5
	C - 10	D - 1	D - 2	D - 4	E - 2	E - 3
	E - 4	E - 6	E - 11	E - 12	E - 13	E - 14
	E - 15	F - 1	F - 3	F - 4	F - 5	G - 4
	G - 5	G - 7	H - 1	H - 2	H - 3	H - 4
	H - 7	H - 8	H - 9	H - 10	I - 4	I - 6
	J - 1	J - 2	J - 3	J - 4	J - 5	J - 6
	J - 7	K - 5	L - 1			
2.	L - 8	L - 9				

APPENDIX F

Grand Rapids, MI 49506
July , 1977

Dear

Your help is needed and will be appreciated.

As part of my work toward a Specialist Degree in Business Education at Western Michigan University, I am making a survey of businesses in the Grand Rapids metropolitan area to determine whether the Grand Rapids Public Schools is including in its curriculum the training needed by beginning workers in the accounting/bookkeeping/recordkeeping field. I am an accounting teacher at Ottawa Hills High School.

Would your company assist me by giving me access to your entry-level employees in the accounting department for a short interview during working hours? This can be done at the convenience of the department head and the workers. Will you please check with the head of the accounting department to see if this is possible.

I will call you on July or to determine your company's willingness to cooperate with Western Michigan University and me in this study. From you, I will need to know the name of the Accounting Department manager, the entry jobs in the department, and about how many employees you have in these jobs. I will then contact the manager to set up appointments for the interviews. I am interested only in the tasks the people perform and do not want any confidential information.

I have enclosed a list of common job titles for entry-level positions to help you determine what kinds of jobs are involved. If you need any further information before making a decision, please call me at 456-5166.

Very sincerely yours,

Kay Tomaszewski

enclosure

APPENDIX G

COMMON JOB TITLES FOR ENTRY-LEVEL JOBS
IN
ACCOUNTING/BOOKKEEPING/RECORDKEEPING

Accounting Clerk
- Accounts Payable Clerk
- Accounts Receivable Clerk

Audit Clerk
- Cash Sales Audit Clerk
- Charge Accounts Audit Clerk
- C.O.D. Audit Clerk
- Expense Clerk
- Inventory Audit Clerk
- Journal Entry Audit Clerk

Bank Reconciliation Clerk

Billing Clerk
- Bill Preparation Clerk
- Bill of Lading Clerk
- Charge Clerk
- Invoice Clerk
- Mail Order Biller

Bookkeeping Clerk
- Accounts Payable Bookkeeper
- Accounts Receivable Bookkeeper
- Circulation Bookkeeper
- Classified Advertising Bookkeeper
- Account Classification Clerk
- Invoice Classification Clerk

Cost Clerk
- Cost Accounting Clerk
- Expense Clerk
- Operating Cost Clerk
- Sales Distribution Clerk
- Labor Distribution Clerk

Insurance Clerk

Inventory Clerk
- Record Clerk
- Stockroom Clerk
- Stock Record Clerk
- Perpetual Inventory Clerk
- Physical Inventory Clerk
- Inventory Controller

Payroll Clerk
- Bonus Clerk
- Commission Clerk
- Piecework Time Clerk

Posting Clerk
- Entry Clerk
- Poster
- Cash Journal Clerk
- Stock Record Clerk
- Transcribing Clerk
- Sales Entry Clerk
- Sales Distribution Clerk

Statistical Clerk
- Record Clerk
- Report Clerk
- Tabulating Clerk

Enclosed with letter to Personnel Directors

APPENDIX H

LETTER OF APPRECIATION SENT TO PARTICIPATING BUSINESSES

Grand Rapids, MI 49506
October , 1977

Dear

Please accept my thanks for the assistance you gave me this past summer by allowing me to come into your office and interview some of your accounting employees.

I have completed my interviewing and am in the process of tabulating my data and writing a report. The information which I gathered at your business has been very valuable. We hope to be able to use this information in the future planning of our public school curriculum.

Please extend my thanks to the employees who spent time with me. Yours and their help has been appreciated.

Very sincerely yours,

Kay Tomaszewski

APPENDIX I

TABLE XXX

DETERMINATION OF SAMPLE POPULATION

Distribtution of Total Population Potential	No.	%
Firms choosing to participate in study	15	34.2
Firms eliminated as being too far from area served by Grand Rapids Public Schools	4	9.1
Firms elminated as being subsidiaries of larger firms	2	4.5
Firms eliminated for following reasons cited by firms choosing not to participate:		
Too little turnover of personnel	6	13.7
Accounting done in another city	4	9.1
Firm engaged in contract talks	3	6.8
Employ outside accounting firm	2	4.5
Do not allow visitors to talk with employees during working hours	2	4.5
Gave no reason	1	2.2
Miscellaneous reasons (vacations, inconvenient, etc.)	5	11.4
Totals	44	100.0

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