OFFICE MACHINES USED IN BUSINESS TODAY, AN ANNOTATED AND CLASSIFIED BIBLIOGRAPHY FOR THE YEARS 1939 THROUGH 1964.
BY- COOK, FRED S.
WAYNE STATE UNIV., DETROIT, MICH.
EDRS PRICE MF-$0.25 HC-$1.76 42P.

DESCRIPTORS- ANNOTATED BIBLIOGRAPHIES, OFFICE MACHINES, BUSINESS EDUCATION, OFFICE OCCUPATIONS EDUCATION, OFFICE PRACTICE, HIGH SCHOOLS, BUSINESS, OFFICE OCCUPATIONS,

BUSINESS EDUCATORS CONTEMPLATING CHANGES IN THEIR OFFICE MACHINES EQUIPMENT OR CURRICULUM AT THE SECONDARY LEVEL MAY USE THIS BIBLIOGRAPHY WHICH WAS DEVELOPED AS PART OF A RESEARCH PROJECT TO DETERMINE THE SPECIFIC NUMBER AND TYPES OF OFFICE MACHINES IN A TYPICAL BUSINESS COMMUNITY, THE TYPES OF EQUIPMENT THAT WILL BE PURCHASED WITHIN THE NEXT FEW YEARS, AND THE TRAINING DEMANDED BY THE EMPLOYING COMMUNITY OF PROSPECTIVE EMPLOYEES. THE 218 ANNOTATED ENTRIES ARE CLASSIFIED AS ANALYSIS; BUSINESS SCHOOLS, CALCULATORS, CONCEPTS, COURSE OF STUDY, CRITICISMS, COOPERATION WITH BUSINESS, DISTRIBUTIVE EDUCATION, AUTOMATION, EQUIPMENT, EXPERIMENTS, FUTURE, GOVERNMENT, HISTORY, MENTAL CAPACITY, BUSINESS, MANAGEMENT, MEASUREMENT, TEACHERS, PHILOSOPHY, RECOMMENDATIONS, RESEARCH, SECONDARY EDUCATION, SURVEYS, STANDARDS, TRENDS, AND TRAINING. BOOKS, MONOGRAPHS, PERIODICALS, MASTER THESIS, DISSERTATIONS, AND STATE AND UNIVERSITY PUBLICATIONS ARE INCLUDED. (PS)
OFFICE MACHINES

USED IN BUSINESS TODAY

AN ANNOTATED BIBLIOGRAPHY

DEPARTMENT OF BUSINESS AND DISTRIBUTIVE EDUCATION
WAYNE STATE UNIVERSITY
DETROIT, MICHIGAN
OFFICE MACHINES USED IN BUSINESS TODAY

An Annotated and Classified Bibliography
for the years 1938 through 1964

FRED S. COOK, EDITOR

Department of Business and Distributive Education
College of Education
Wayne State University
Detroit, Michigan 48202

January, 1965
INTRODUCTION

This bibliography was developed as part of a research grant from the Michigan Department of Public Instruction to the Department of Business and Distributive Education at Wayne State. The project was directed by Dr. Fred Cook and Dr. Eleanor Maliche.

The purposes of the study were to determine:

* the specific number and types of office machines in a typical business community
* the types of equipment that will be purchased within the next few years
* the training demanded by the employing community of prospective employees

Mrs. Bess Behnke, a Wayne State University graduate student, researched the literature from 1938 to 1964 and developed the following classifications and basic annotations.

Key to Symbols Used in the Classification of Each Item:

- ANLS - Analysis
- BSch - Business Schools
- CALC - Calculators
- CON - Concept
- CRS - Course of Study
- CSM - Criticism
- CWB - Cooperation with Business
- DE - Course of Study
- EDP - Automation
- EQT - Equipment
- EXP - Experiment
- FTR - Future
- GVT - Government
- HST - History
- IQ - Mental Capacity
- JOB - Business
- MGT - Management
- MST - Measurement
- NSt - Teachers
- PHL - Philosophy
- RCM - Recommendations
- RES - Research
- SEC - Secondary Education
- SRV - Surveys
- STD - Standards
- TRD - Trend
- TRG - Training
- NO AN - No Annotation

There's an increased interest on the part of secondary schools to develop or expand their office machines programs. This interest has been intensified by the Vocational Education Act of 1963. We believe this bibliography and the study will prove of invaluable assistance to any administrator or business department chairman contemplating changes in their office machines equipment or curriculum.

For information concerning the Office Machines Research Study contact:

Fred S. Cook, Chairman
Business and Distributive Education
Wayne State University
# OFFICE MACHINES BIBLIOGRAPHY

(Annotated)

## Part A - Books and Monographs

<table>
<thead>
<tr>
<th>Code</th>
<th>Author(s)</th>
<th>Title</th>
<th>Publisher and Year</th>
</tr>
</thead>
</table>

This monograph contains a good job analysis for the adding-listing machines and calculators, as well as the qualifications for operators and usual learning times required.


Describes full-keyboard adding-listing machine, ten-key rotary, and key-driven calculators.


Chapters 8 and 9 of this general methods book survey the area of office practice and include plans for office machines courses, suggestions for equipment, and standards of attainment.


Published for the Institute of Higher Education by the Bureau of Publications, Teachers College, Columbia University.


A study of clerical workers in Atlanta, Georgia, paralleling in parts the study made by Thelma M. Potter. The findings for machine operators were practically the same in both studies.


In this general philosophy of business education book there are some references to machine training with particular mention of the findings in Nichols' earlier study, "A New Conception of Office Practice."

| SRV-STSM | NCMC, St. Louis Chapter | Blueprint for Business Education, Monograph No. 65 | South-Western Publishing Co., 1946 |

This is a report of a survey made in St. Louis of the city's needs in the area of business education in the public schools.
This report resulted from a survey made of the office in Seattle to find their present and future needs for employees, and the implication of such needs for the Seattle schools.

About 10 million people did clerical or some closely related work in 1963. High school seems to be the requirement but on-the-job training is given, and for some jobs, the employers send the applicant to a special school for training. The outlook is good in this field. It is estimated that by 1975, close to 4 million more people may be doing work of this kind than in 1963. Banks and insurance companies are expected to expand rapidly. "More and more mechanical equipment will undoubtedly be used to speed the process of keeping business records, particularly in large offices, and in some of these offices there may be substantial reductions in the number of clerical employees. For the economy as a whole, however, it is expected that the new positions created by growth will outnumber the clerical jobs eliminated by mechanization."

Appendix A gives a statistical analysis of business education in Ohio high schools and shows that 22 out of 1242 schools teach office machines.

This doctoral study includes data on the machine work of the clerical employees studied.

This is a report of a doctoral study made of 427 beginning office workers and of the duties they have had to perform on their jobs.

Chapter 16, "Training for Clerical Work," includes some general discussion of the machines program in high schools.
OFFICE MACHINES BIBLIOGRAPHY

Part B - Articles and Periodicals


This business is experiencing a marked famine of clerks. Reasons: (1) Additional retail accounts which the bank is seeking, offering more and more services; (2) Present clerks become bored with monotonous tasks and move on to what looks like greener fields.


Points out in general the need for business-teacher cooperation.


This discusses the 18 new models introduced by National Cash Register, describing in detail some of the features on basic machines.


An analysis of two questionnaires sent to schools and businessmen over the United States (1) to find out what the schools were offering in Office Practice, and (2) what the businessmen thought the schools should offer.


Heralds the coming of the adding machines which "adds, subtracts, sub-totals in red, is quiet and new."


The statement is made that one of the industry's greatest growth potentials is marketing equipment to smaller companies.


This is an explanation of the plan to provide comptometer training for some of the students in this school, which makes it possible to continue a reasonable orientation for all students on basic office equipment, as well as to allow some students to specialize on the key-driven calculator.
Two projects to reassess the significance of business schools to industry. (1) Ford Foundation will survey management to find out what schooling is needed for a business career. (2) Carnegie Corporation will evaluate the schools and--working with Ford--set up standards for them.


A good management technique which could be applied in the classroom. Describes a secretary who has been used to a manual typewriter, but who was suddenly transferred to an electric one.


Secondary schools have to reckon with a large number of business machines which adds greatly to the cost of business education; their care and housing add to the responsibility of teachers and supervisors.


As the office manager thinks of the machine in terms of end results, so should educators have a similar body of principles to guide them in the problem of installing office machinery for instructional purposes. Lists five conditions under which machines instructional program becomes impractical.


States the need for students from a small high school to be a "jack-of-all-trades" because of the possibility of small office jobs. This also tells about a project developed which was an integrated unit in handling a series of transactions that might occur in a small office.


A critical evaluation of the pros and cons of the various methods of teaching the office machines in the high school.


A detailed discussion of the steps in determining the scope, content, objectives, and procedures for an office machines course.
OFFICE MACHINES BIBLIOGRAPHY


According to the United States Office of Educational Vocational Leaflet, No. 12, 1943, page 35, "Less than 50 per cent who complete a commercial course in the public high schools of the United States are sufficiently trained to meet the minimum employment standards of business and government. In 13,000 high schools, 1,000,000 students were in typewriting, 750,000 in shorthand and bookkeeping.


This is a good discussion of the ways in which a school can maintain its academic standards, help the student fit into the world of business, and give business an opportunity to use some of the potential which the school has to offer. Points out the need for flexibility, both by the school and by business.


Suggests what institutes can do in the way of education to prevent so many small business failures. Most of our training is geared to the large businesses but students can be given training and knowledge which would assist small business to get a better start.


Business mail has been called the life blood of commerce. It must be handled with speed, accuracy, and at a low cost. This article points up the fact that there are many labor-saving devices available to every business, no matter how small, to the advantage of modern mail-handling.


Secretary Wirtz has said, "It is so often overlooked that the machines not only reduce the number of unskilled jobs but also increase the number of skilled jobs." The training for many of these skilled jobs rests with the business teacher.


Discusses 5-day meeting of 20 specialists called together by the Division of Vocational Education. Conference developed "Guides for Action." Major reason for meeting was to recommend to the Office of Education what it could do to promote office education. Teachers of education should have the broad background, including professional education, general education, occupational experience, and proficiency and knowledge of guidance techniques.
This article discusses the growing acknowledgment of the importance of education with an emphasis on office education; in the past, education was concentrated on how to produce things. Now it is recognized that both production and distribution rest on the functional records kept by an organization. The purpose of records is mainly to guide decisions. Details are given as to the rate of growth of office facilitated functions. The increased demand for more information from more sources about more items will support the office of the future. The Perkins Bill (HR 955, Vocational Education Act of 1963) is evidence of the fact that the public recognizes that the office is the entrance to the "world of work" for many high school students. This article discusses the bill and its implications.


Each pupil was assigned several activity accounts of the high school; these were set up on ledger cards. Such a job gives them a sense of responsibility and personal accomplishment. Those teachers who do not have "real" accounts can find some in textbooks and practice sets to give the student the necessary training in the use of machines.


All the above questions must be considered when considering the questions of "How to teach office machines." Since the employer is concerned with the volume of work put out each day, it is necessary to develop within the student the element of time and motion awareness to increase production.


A description of the methods and success attained by the Collins and Aikman Corporation in setting standards for office work.


Describes machines being shown at the New York World's Fair—electrical accounting machines.


("It is Changing Its Shape As Well As Its Face.") The white collar promises to become more and more tight as machines displace more and more people. Since World War II, the American economy has generated four white to one blue (an increase of 4 per cent since 1947),
29 million blue collar workers (a decrease of 9 per cent for the same period); changes are certain, though, in the white collar group itself. Many facets of EDP create new white collar jobs even as the computers take over the clerical jobs. From both of these changes have come a whole new set of problems for management and the office. Here is where the element of uncertainty comes in...

Are the high schools to train students for jobs that will be eliminated in the future by changes in technology? The need for mobility and adaptability is great. For the white collar world itself, the key to the future might be quality rather than quantity.


Acknowledges the fact that we are in a state of great change, but also states that there is a "ferment on the campus." Writer contends that there are obvious and certain disadvantages to excessive concentration on smaller segments of total knowledge. This is particularly true in education for business. "The opportunity may never again be so favorable to become familiar with and to think about the many features of business, their interrelationships, and their significance to the society in which we live; to develop that interest and curiosity about all phases of business that will make one a continuous student of business throughout a business career ...."


The author is educational director of the Monroe Calculating Machine Company. In this article he surveys the usual plans for teaching machines in the schools with an evaluation of the various plans.


Indicates need for proficient pencil-paper computation as well as dexterity on business machines. (This is in answer to an article by John A. Lurie, May, 1956, page 156.) "After all, business machines don't require electronic engineers or nuclear physicists to operate them; a normal proficiency with simple arithmetic is virtually the only prerequisite."


This implies that most teachers are ill-equipped to teach office machines as a separate course, as the teacher is usually proficient in only the use of one or two. That is why office machines has been taught as a course related to office practice. "Good office machines teachers are few and far between." Since universities do not offer opportunities for teachers to master such skills, then the teacher has two alternatives: (1) the trial-and-error method, staying after school and trying to work out all the problems, and (2) at her own expense or with the compliments of the company, attend
the operator-training schools of the various companies that manufacture the machines. This concludes by the statement that office machines and office practice should be taught as separate courses—one complementing the other.


The author believes that the students of average or lower I. Q. are better adapted to become machine operators.


In approaching the problem of mechanization in the office, this survey was started by contacting all the major manufacturers of equipment and several of the smaller ones. Over 70 interviews were conducted with the manufacturers; also, cooperated with a number of companies which were known to be particularly efficient. Check claims and counterclaims, results of one source against another. Certain factors were found to be repeated again and again. These added up to general trends in new equipment design.


Proceedings of the University of Chicago Conference on Business Education, School of Business, University of Chicago, New York Gregg Publishing Company, 1940. Title: Business Education for What?


Ten years ago (sic, 1937), The American City and Municipal Index counted the number of business machines in 384 municipalities, then used Milwaukee as an example. In 1937, Milwaukee owned 150 business machines as compared to 287 in 1946. War interrupted mechanization of accounting and office practices.


This gives step-by-step details in instruction on the multigraph.


Major objectives:
(1) To acquaint the students with the machines which are found in modern offices;
(2) To acquaint the students with the firms' procedures and practices that are used in modern offices in connection with the use of machines;
(3) To furnish the students with the opportunities to acquire skills in the operation of office machines.

Stresses necessity of having materials--signs, manuals, etc.--ready before school term starts. Author developed an instructional manual geared specifically to each machine.


Gives in detail the physical layout of plans and reasons why it was done this way. Anticipations of future uses are given.


A survey of 115 offices in Quincy, Illinois, and their employees involved in various kinds of office work.


It's very easy to build up a strong case for replacing an old office machine; therefore, we must set up a system for comparing the assets of old and new equipment before we move to make replacements. Machine selection presents two major questions: Why is a machine needed? and, if needed, what particular machine should be selected?


Prides itself in the fact that it is supported by business. Caption on picture: "How to operate adding machines. The school prides itself on its practical application to business." It uses businessmen as counselors and advisors.


This writer describes the use of a few machines in a small school, telling how three business machines handle a potential of 55 students each year. Use hand-operated machines because he feels that basics can be mastered without much trouble: one full-keyboard, one ten-key, and one calculator.


Recommendations are made for the type of equipment that might be used in office practice classes. Attention is given also to sequence and scheduling and practice on several pieces of equipment.
How much practice on machines do clerical workers need? This and related topics are the focus of the proposed course.

This states the need for education to be more comprehensive than before. Points out the need or value of part-time experience, the necessity for understanding business and his relationship to it. English is fundamental and economics should be studied.

Following are some significant data which grew out of a NOMA survey as conducted by the committee of which the author was a member:

1. As the size of the office increases, proficiency requirements for beginning jobs becomes lower.
2. Over half the companies do not have a program of in-service training.
3. Over half of the companies do not give functional tests to applicants.
4. Ninety per cent say they have job specifications for beginning stenographers.
5. About half the companies require a physical examination.
6. Eight mental traits listed as being most important were: spelling, grammar, and accuracy; then, general knowledge, adaptability, independence, and memory.

Suggests use of self-test called "Self-Discovery" (Otis Test can be used) to give self-confidence. In this test for office workers is remedial reading, social arts, general psychology, or some of the varied types of work to enrich the student's total equipment so that they will be personable as well as skillful in business.

This questionnaire study received replies from 300 businesses in Knoxville, Tennessee, giving data concerning the equipment used in the offices, the numbers of full-time, part-time, male, female, trained, and untrained workers, and the requirements for employment.

One of the big questions coming up when deciding to purchase new equipment is: Who is going to operate the equipment? Does it take an experienced person, or can I use my present staff after they have been trained?

An Officer of the Burroughs Machine Company gives valuable suggestions for schools as to who should take the machines course, standards to attain, and plans for training.


A discussion of one teacher's idea of what an office machines course should be.


Katharine Gibbs School in New York teaches girls how to dress, groom, make up, type, take notes--even to spell. Believes that relations must be maintained with the business world. During a year at this school, each girl is required to write a letter to a bona fide employer asking for permission to come around and discuss his secretarial problems. This gives the potential secretary a chance to see the inside of an actual business office, thus giving her a better insight into the reality of what the future might hold.


The final considerations after many others have been satisfied:
(1) Inform school administrators. (2) Determine the school's responsibility. Sometimes when schools lack revenue, businessmen are ready to lend their assistance. The Seattle school situation was difficult. Most typewriters and other office machines were old or worn out. Machines were needed for experience as well as for replacement. The value of the business leaders working with office managers was known when the Seattle School Board authorized more than 100 thousand dollars for new equipment.


An article written for the post-war training of demobilized men and women. Discusses selection and guidance of the teaching methods and techniques.


The writer gives his idea of how full-key and ten-key machines should be taught. He recommends use of used machines, hinting that teachers usually look for the "newest, most expensive machines."

Clearly states that specific training is necessary for calculators, posting machines, duplicating machines, transcription machines. The main purpose is to achieve a high degree of efficiency with the least amount of wasted time and effort on the part of the learner and the teacher. "...Independent judgment and general aptitude ought to be prerequisite; but most instructors are not in a position to require this."


Problems to be considered in setting up an office machines program: (1) Selection and installation. (2) Operation and maintenance. Suggestions to be kept in mind in the selection of equipment: (1) As much variety as possible should be made available to the students. (2) Those makes of equipment should be selected on which service is readily available. (3) Machines and equipment which are similar to those used in the community and nearby offices where students are likely to work to be installed. (4) The budget of the school must of necessity be a governing factor. (5) Where a limited budget is of concern, care should be taken to see that the most instruction time is given to the most used equipment.


States that educational writing in the fields of typewriting and business machines has often been on objectives, organization, and equipment, rather than on psychological and scientific findings related to skill learning, production standards, and evaluation of progress.

59. Forney, M. L. "Office Machines in Use and Types of Training Received by Machine Operators in Lincoln, Nebraska, with Implications for Teacher Training," M. Ed. Thesis, University of Nebraska, 1958, 125 pages.

Of 391 responses about the preparation of office machine operators, 47.6 percent indicated that this was done by the employing firm. The typewriter was the machine used most frequently. The number of manuals equalled 36.6 per cent of the total of all machines reported; the electric reported 11 per cent of the total of all machines.


The article lists standards for production on the adding machines and calculators as obtained from several authoritative sources.


Surveys provide means by which the school is able to obtain
information about the potential job market and business entrance requirements in the community. States that the "acquaintancehip level is sufficient."


Bibliography of research studies in Business Education, 1920-1940; a cumulative author, subject, and institution index of research studies in business education listed in the United States Office of Education.


The purpose of using the suggested system is to show how the individual teacher can minimize the amount of time expended with each pupil.


An official of the Bell Telephone Company discusses the factors in selection of machines and the necessity of training for the operators.


The author describes the plan of machine instruction used at John Hay High School, Cleveland, Ohio, and stresses the need for arithmetic instruction in connection with machine training.


These authors say that it is time to review machines courses because the recent wars have created such a labor shortage that mechanization is being sped up or forced. The machines that a school should have are spared between the single school and the multiple school. They justify machines by placing them under "basic" and "desirable additions": typewriting, duplicating, dictating, figuring and bookkeeping machines; instructional and adjusting machines are named as being necessary in the office machines room.


This deals in particular with the skills and knowledge required by the student studying duplicating machines. It mentions that this skill can be acquired quickly.
OFFICE MACHINES BIBLIOGRAPHY


Suggests that teachers read all they can find about the subject and bring in speakers to present specific up-to-the-minute information. Adoption will be the best plan for years to come. Business teachers must learn how IDP is going to affect his subject and his methods.


This is a very thorough discussion of the meaning of this new technology, the various terms and their implications, and how they will affect the different office positions. Secretaries will be least affected, stenographers may have to change, typists will be upgraded, and many other similarly ordinary things will change in the office.


Automation will create new demands for more skillful typists and machine operators. These machines will require even higher skill on ten-key touch operation, as well as on calculator machine operation.


This writer approaches the problem from the angle that "business must be satisfied." He states that the dearth of tests makes testing difficult, but one's ingenuity should solve this problem.


This study sought to establish a test battery for the selection of machine operators but concluded that the tests used did not provide sufficiently high correlation.


The purpose of this study: (1) To decide the major issues in selected business education subjects, and (2) To determine the opinion of current business leaders in business education with respectability to these issues, (3) To determine the extent to which these issues are controversial, and (4) To determine the trends of thought in these selected business areas.

Statistics reveal that on over-all jobs, employees are functioning at about 25 to 30 per cent capacity. This means that every office has two to four times as many workers as it should and is expending four payroll dollars for every dollar of work performed.


This is a well-written article about the experiences of the new office worker in her beginning job. It stresses the necessity of the school helping the new worker overcome these difficulties while she is yet in school by cooperating with the office, and by the teacher working closely with the office staff to see that this is a learning process rather than just a means of getting some work done.


"Vitaminizes" or lists the machines in order of importance, as vitamins are important in ABC order; i.e., Vitamin A represented the adding-listing machine; Vitamin T, at the other extreme, represented the transcriber. This article is actually a selling piece for the teaching of office machines, discussing each machine and its importance to the whole program.


This article is about the woman-power shortage in Washington, D. C. Untrained secretaries are being offered 42 dollars per week, 60 dollars per week, etc. This dire need brought forth the statement that they might try to eliminate the use of stenographers just for typing reports and answering phones; it went so far as to prognosticate (after describing the popularity of dictaphones by many businessmen) "the necessary step may be a machine which will take the spoken word and put it right down on paper without benefit of the feminine hand."


A study for the purpose of investigating the feasibility of developing a technique which would aid in the differentiation of those employees who have developed desirable personal traits for office work from those who do not possess such traits.


A report of a survey of twenty business firms in St. Louis, showing the numbers of operators and the attitudes of the employers toward high school training for these office jobs.
OFFICE MACHINES BIBLIOGRAPHY


This writer describes the business machines course at this particular high school, enumerating the objectives, the course plan, the machines taught, the equipment, the classroom organization, the grading, student responsibility, and job placement.


States that it is necessary to have a thorough knowledge of business arithmetic if one is to learn the calculator. Maintains that this machine cannot be learned in "one or two easy lessons; he is acquiring a business tool; therefore, his aim should be extreme accuracy. It is necessary that the teacher have some skill if she is to teach it."


The author gives a summary of current thought on machine training covering such topics as basic philosophy, amount of training, class organization, plans of instruction, production standards, grade placement, and pupil selection.


Should office machines teachers be skilled operators? Some concepts of office management need to be taught because the teacher is like an office manager when he chooses equipment. The basic principle here is that the machine is only a tool for solving a problem. This problem must be analyzed before the machine is purchased, and lab tests must be given before the right machines is selected. The teacher must also know about time and motion studies. This writer states that the teacher gives attention to the "how" and overlooks the "whens, wheres, whos, and whats," leaving the job partially done, because effort in this area is yet unorganized and unsystematized.


Fundamental facts and assumptions: (1) Office machines training attempts to give some members of that group of those with twelve or less years of education a marketable skill. (2) Those migrating to the urban areas cannot expect to get the needed training in the original high school. (3) Business education can help cut cost of production by providing well-trained workers. (4) Office machines training on the pre-employment level may be general in nature—to encourage adaptability of some types of machines to some office problems. (5) Operator must find relationship between training received and job opportunity. (6) Some workers can be best taught on apprenticeship basis. (7) Laws of learning—whole versus part—
Office Machines Bibliography


This is a very good article, giving some ways in which one executive eliminated much of the unnecessary paper work that his secretary had been doing for him. Instead of "automating" the office, he expedited it. He worked out a kind of "flood control" which reduced costs, shortened recruiting time, attracted applicants with positive attitudes, and brought order out of chaos.


This section of the yearbook deals with the problem of machine training and discusses plans of organization, levels of achievement, equipment, pre-requisites, teaching methods, standards, and related topics.


These writers maintain that the teacher should have a set of standards for each machine in order to produce efficient operators. A table shows what proficiencies should be expected on certain machines and where work still needs to be done.


An analysis of the method used by the Prudential Insurance Company to maintain control of their office machines, and some things they have learned about training operators.


Selection should be governed by: "A knowledge of what machines are available and what types of operation they can perform, as well as a real understanding of the job in question. Suggests a check list be used against each machine in relation to the job it can perform.

OFFICE MACHINES BIBLIOGRAPHY

Discussion of the general plan and the proficiency plan for teaching office machines. Cost of machine makes full acquaintanceship prohibitive; although the teacher of office machines does have the cooperation of machine companies, sales companies cannot be expected to formulate the policies of the course. Advises purchasing one machine in each group of the several major ones.


This article sketches briefly the historical development of computers and forecasts the uses which will be made of them.


A description of the method used by the Western Electric Company to determine what types of machines to buy for use in its offices.


Study of business firms to determine types of office machines that might be incorporated into a secondary school course. Personal interviews and check list for 40 business firms employing two or more employees. Summary: (a) Typewriter was most used office machine. (b) Others in order of importance: adding-listing, calculators, bookkeeping and billing machines, duplicators, and voice-writing equipment. (c) Machines employers thought that high school graduates should be familiar with, in order of importance: ten-key adding-listing machine, crank-driven calculator, stencil-duplicators, dictating machines, bookkeeping machines, full-key adding-listing machines, and key-driven calculators. (d) Most employees secured by personal contact.


"The understanding of the collator is as basic to an accountant as an elementary accounting rule." Except in rare cases, most operations now being converted to cards could have been handled at a saving with equipment that existed 15 years ago.

This writing focuses on the instruction in the office machines class in IBM card punch training.


This author claims "the needle of truth is being lost in a haystack of promotion releases." This gives the results of a survey, naming the machines which are actually available, who is building them, what they can do, and how their installation can affect the office methods and personnel of the companies that invest in them.


"Automation is coming to many businesses." This gives a table of the jobs being created by automation, what some of the words mean, the talent one needs to succeed in this field. "The key to this advancement will not be in your schooling--that is only the background, but the experience you manage to gain inside a company."


The author outlines a method of developing instruction sheets for teaching the calculator, and offers suggestions for their use in a teaching situation.


Discusses what materials would be needed and the procedure for teaching. Need for this in business not established more than to say evidence of need was noted in UN reports and Kefauver Committee on TV.


Public high schools having a large enrollment of commercial students should offer satisfactory office machines training programs to meet the local needs.


Recommendations: (1) Make a good impression the first day. (2) Teach arithmetic and plenty of it. (3) Make daily assignments whenever possible. (4) Review often. (5) Test often. (6) Read professional publications.

OFFICE MACHINES BIBLIOGRAPHY

Suggest very careful preparation beforehand, which includes reading the article by James F. Giffin, "The Guest Speaker," (UEBA Forum, January, 1956).


States that company classes should provide knowledge and content. Says that this is the way for an accountant to become a specialist.


This is a discussion of a survey taken relating how it helped in planning this particular office machines program. A two-page questionnaire was used, 29 offices were visited; ie., questions regarding type, age, number of machines, the per cent of time the machines were in use during the working day.


Office equipment has been one of the major growth industries. Sales have increased sevenfold since World War II. Increase has now reached an estimated 315 billion dollars yearly. Typewriters alone are a 350 million dollar business, and office copiers 300 million dollars--double the sales of just three years ago.


"The only sensible, long-range program is one that provides a comprehensive business-machines course." In a recent survey, it was found that the use of the adding machine was fourth among all office duties in all job classifications. It was exceeded only by the use of the telephone, use of filing systems, and examining and/or sorting business papers. Even greater use was made of this than of the typewriter.


Simple filing knowledge and business arithmetic constitute the basis of many clerical jobs in this new age of mechanized office procedures.


This is a discussion of how the writer planned to have her students visit local offices in an attempt to coordinate education and the activities of local businesses. During the summer she took a survey of offices to determine the sizes and the kinds of jobs available.

   Generalizes on the physical aspects of the course--how to make such a course fit the community needs.


   The purpose of this study was to determine the problems of beginning women-office workers in obtaining and holding jobs as experienced by the workers and as seen by the employers. Interviewed 120 workers and 22 employers; workers were graduates of high schools and had more than four months of work experience. Employees and employers were in general agreement in regard to their problems--generally these problems were attributed to unsatisfactory instruction or inadequate counseling in high school. These difficulties were related to skills as well as personal qualities. It is evident that cooperation by the business and school must be developed to a greater degree. Need for realistic instruction and practice in job-getting and job-holding. "High schools should consider modification of course offerings and course content on the basis of follow-up studies."


   Purposes: (a) To ascertain what type and number of business machines are used in the Beloit, Wisconsin, South Beloit, Illinois, area. (b) To attempt to discover the number of personnel employed in a full-time and part-time capacity in the same geographic area.

   Methods and sources: A questionnaire containing a list of the various office machines used generally and a two-part question inquiring what percentage of dictating was transcribed from shorthand notes and transcribing machines was sent to each business. The return of the questionnaires was 61.6 per cent.

113. McCarren, Kenneth J. "How Much is a Million Dollars?" American City, Vol. 54, April, 1939, page 71.

   It is what Detroit taxpayers saved in nine years by mechanical procedures in the office of the Board of Assessors. In 1930, $170,000 was spent for the mechanization; tax thus saved was $1 million dollars.


   A new area developed when it was observed that this high school had nothing in the business education courses to offer to the slow learner. Three requirements that a student must meet to take the office machines course: (1) Each student must be a senior with
an average of "C" or better in the first and second semesters of typing. (2) The student must be taking a general business course in secretarial or retailing majors. (3) The student must have successfully completed a prerequisite course in office practice. Here they study 18 different departments of business and clerical procedures, one for each week of school; they also study filing rules in this course. List of machines used, objectives of the course, jobs to be completed by the students, description of the machines are given in this article.


Discusses office machines courses at Swampscott High School in Swampscott, Massachusetts. Cooperates with businesses in the area by giving tests in the senior year, making out applications; also various standardized tests are given to acquaint the students with what they are to expect when applying for a job.


Praises Burroughs for fitting bookkeeping machines to the kind of office work that is common to all municipalities.


Survey was made of office operations in 275 companies; now these companies are putting greater stress on work measurement techniques, job descriptions, use of clerical procedure manuals, and tighter scheduling of work. This article details specific companies and the methods they are using to expedite the handling of paper. Throughout most of these examples, it is noted that a program has been inaugurated for boosting clerical productivity in that particular company.


The section of this article dealing with machines makes definite suggestions as to the type of practice material that should be included in the course for the calculating machines.


The author believes the training time on machines can be cut down by stressing only the operations best suited to the machines. He outlines a training program for the operators of the various calculating machines.

Objectives of course: (1) Good work habits. (2) A working knowledge of clerical functions. (3) Additional knowledge. (4) Acceptable working knowledge of six other machines. (5) Understanding of the uses of the decimal point. Course plan is represented, as well as a list of machines taught, classroom equipment, classroom organization, grading student's reports, and job placement.


Goal for student achievement in knowledge of processes on an acquaintanceship level—and more. He should have the broad experience to know how to check out the potentialities of the machine.


Recommendations were developed from this survey, among which was the desire to follow up the results of the purchase and installation of office machines to determine whether or not at that time businessmen were more willing to help high school graduates or not.


"Electronics in business means accepting the fact that better office productivity will often require replacing a machine, not because it can no longer do its job, but because a new machine can do the job better."


"In 1956, almost 76 per cent of Equitable's Home Office employees were in the four lowest salary grades—the clerical jobs. By the end of 1962, there had been more than a 12 per cent shrinkage in the ratio of employees in the next six salary grades—the specialist, technician, and supervisory jobs." Dr. Morrow suggests that if present trends continue, training in specific business skills may eventually become the smaller part of the curriculum.


This writer mentions pitfalls and warnings about accepting work from outside the class in order to give experience on office machines. Details were given as to the make up of small bulletins and yearbooks, programs, cards, and color work.

OFFICE MACHINES BIBLIOGRAPHY

Tells of the advantage of using the dictating machines at the Board of Estimate in the City of New York, detailing the length of the time of dictation, the amount of notes, the prolonged meetings, etc. The world's largest user of dictating equipment is New York City. Dictating machines and booths do not even go to lunch.


Sub-headings: (1) Targets. (2) Tools. (3) Application. (1) Suggests acquaintance with several machines. (2) How many, what kind, cost and for what used. (3) Best with work experience.


The point is stressed in this article that over-all understanding of the business and the particular functions of the material with which the operator works must be added to mere skill in manipulating a machine.


Point No. 12 in recommendations: School officials with the help of local business associations should make available adequate classroom furniture and the types of office machines needed to train business students for initial employment in office and distributive occupations common to the employment area served by the school.


Operators' manuals of five business machines analyzed to determine how to train operators.


Although the writer criticizes the fact that many things were not taken into consideration which should have been, he says that in a survey, many things must be taken into account to make it purposeful. He questions the wisdom of the issue of training a student for the jobs which are available, even though that student may have an aptitude for a job for which there seems to be no demand.


The author takes issue with the usual suggestion that the work of the local community should determine the content of the machines course.

The report of a survey made in Fort Worth, Texas, to determine what machine training was deemed essential, desirable, or unnecessary for stenographic, bookkeeping-accounting, and general clerical employees.


Trend is toward need for more office workers yearly. The new machines will aid business in winning that battle with paper work—a battle which they thought was being lost before electronics came to their aid.


(Reprinted from Michigan Vocational Outlook.)

Change in thinking resulted through the cooperation of the local Board of Education and the State Board of Control for Vocational Education. Instead of businessmen thinking they would train their own machines operators, it was now possible to train them properly in the high school.


"Learn how to run various machines that do billing, calculating, bookkeeping, tabulating, and so on. As business grows in complexity, machines do more and more of the office work. Survey shows that in the next four years, the need for machine operators will double."


This stresses the need, not only for more but better trained office workers. "A better training job will have to be done by the schools." One suggestion (among many) was to provide on-the-job training. For example, a Massachusetts insurance firm hires commercial teachers during the summer, has them work side by side with under-skilled employees with the hope of showing the under-skilled how work can be handled more efficiently.


Miss Jones believes that employers could do much more in fitting the girl to the job. She suggests that the employer express interest in the individual in order to get the best that this market has to offer.
Office automation is bound to accelerate before it slows down. But "the hundred thousand office workers now being dislocated by computers," one economist summed it up recently, "will be a spit in the ocean to the armies of clerks being bumped by the computers of the seventies."

In this article, dictating machines are listed as first in importance; next, duplicating, with calculating and computing machines taking third place. Suggestions of time are given for work on the various machines, suggestions for teaching procedure, equipment, and testing.

General information on business education with recommendations for curricular materials (among other things) to be brought up to date.

This writer says that a student must have a thorough knowledge of arithmetic, proceeding then to present examples in division, discount and per cent, and price per hundredweight.

The author, an official of the Liberty Mutual Insurance Company, describes the plan used in his company for giving on-the-job training for the various machines.

The report of a Master's thesis at the University of Southern California lists the duties performed by clerks in weighted rank order, and lists the ones which the businessmen felt should and should not be learned on the job.

This article emphasizes the importance of people in relation to tools and techniques of systems and procedures improvement, stating that many bulky and expensive procedures can be eliminated if we have more faith in people. Incompatibility between management and
employees is furthered also in the drive to systematize and automate the office, moving the white-collar workers one step further from company objectives.


"Office work is to a business organization what a blood stream is to an individual—an artery, a service agent, a lubricant." An office training program can really be evaluated by the success of its products.


New devices with unbelievable capabilities reported in this article. Description is given of the installation at the John Hancock Mutual Life Insurance Company: Dictating machines, common language machine, punched tape system, reading-printing machine, and Travel-Talk. These machines all indicate trends in office equipment, and business teachers should keep their students informed of office equipment modernization.


Emphasizes the necessity for teachers to have production standards in office machines instruction.


In addition to developing the principles of machines unit instruction, the author discusses the objectives of such instruction, the time required for training, and a suggestion for short training courses to run throughout the school year.


"The procedures and techniques change for every job performed but the way of thinking through a piece of work doesn't change. Our responsibility as teachers is best discharged by giving students this unchangeable skill which can be used in any job, in any office, and any level of work."

This article points out that managers are using programmed instruction adapted from the Pressey idea of progressing to new learning upon responding correctly. Some companies are experimenting with teaching machines controlled by computers, which regulate questions in speed and difficulty according to the response or intelligence of the learner.


The purpose of the high school business program should be two fold: (1) To provide an opportunity for students to acquire skills and knowledge which may be used as tools to earn a living in the functional areas of business. (2) To provide opportunities for all youth to acquire general information which will later better fit them to take their places in the economic and social life of their communities.


This article was written in the hopes that the experiences of reorganization might help other schools in establishing a new business department or reorganizing the old one.


One conclusion, among many, was that beginning office workers are unable to perform tasks which are basic to their occupational classification; other conclusions: accuracy most frequently deficient; duties to be performed by office workers always go far beyond their work classification; secretarial and accounting positions hardest to fill.


Gives the usual set-up for a rotation plan in teaching but offers two hints in the teaching of calculators: The use of the answer book or key permitted the students in order to find errors before progressing too far to give them the sense of reasoning out why; also, letting two students work together on a calculator, they seemed to get more from the course.


Machines will not displace workers as there are now 100,000 more
workers in office occupations than a year ago, seven times as many as 50 years ago. Instead of displacement, workers are up-grading to the more interesting jobs. Even with new mechanical aids, clerical tasks continue to increase.


Discusses necessity of selection according to need and cost in order to make a profit in business.


The three skills available on office machines--acquaintanceship level, functional level, and vocational level--are discussed here. The type of course which is chosen depends upon the community need, the amount and kind of equipment, and the place in the curriculum. Community need is most important because it is the larger community which will give the student his later employment. This writer recommends canvassing the community, listing the machines and analyzing their work to find the particular jobs on which training should be given.


This describes personal case in Peking High School in Illinois. The writer's objectives in the course were to teach the fundamental skills and a thorough understanding of business applications of machines rather than to produce highly skilled operators.


Discusses rental, purchase, maintenance, and service of office machines.


"The only measure of its justification and success is the degree to which it enables an individual to achieve a desired result faster, easier, and more accurately. However simple or elaborate the machine may be, it will accomplish only what it is made to accomplish by human operators."


This writer believes that teacher training given to prospective teachers of typewriting should also be given to teachers of
calculating machines. That is to say, that the latter field is in as much need of methods instruction as is the former.


The author discusses the common attitude of business teachers toward machine training, outlines a program, and includes samples of problems and times for working.


This discusses how to schedule an office machines course; how many machines will serve how many students for how long.


From 1939 to 1942, employees in the Central Check-writing Division were reduced from 59 to 34. This article gives details and examples of the use of tabulating equipment and the value it is to an office of this nature--efficient, economical, and convenient.


A report of a study made in New York City on the effect in learning arithmetic of using calculating machines compared with using paper and pencil. The article also reports on the findings of a doctoral study made in California by F. G. Marsh on the same problem.


This study asked among other things, "What courses would you take if you were to go back to high school and the following courses were offered?" and found machine calculation placing second on the list of courses desired.


This article elaborates on the uses and need for work measurement. A study would reveal which present duties were unnecessary, permitting economy in existing methods; also whether the workers are doing work of their caliber.

OFFICE MACHINES BIBLIOGRAPHY

Purpose:  (a) To find out whether the school program is preparing office personnel to meet the demands of business in the area. (b) To assist school personnel in setting up a training program for future office employees. (c) To aid school personnel in the selection of additional training machines.


This lists nine common causes of posting and proving errors and states that there is no panacea offered, but the cure must come from the student himself.


This business course, dependent upon an academic basis, uses history, English, and two years of Spanish required of all business students. Business students are divided into secretarial, bookkeeping, and clerical. The business major is selected in the junior year, and this specialization requires intensive training. High IQ's are required for bookkeeping or secretarial. This is an interesting article which shows the detailed description of an office machines course and its workable operation in this high school.


Suggestions given for developing your own grading scale for various office machines.


Modern business calls for modern machines in order to furnish an employable skill. Requires scientific planning and layout.


This points out the advantage of having bookkeeping or accounting students use their skills and knowledge gained on office machines or in office practice in applying it in an accounting course.


The editor suggests in his note to this article that the reader evaluate the efficiency of the teaching and use of the machines in the terms for which they were purchased, and make sure that every machine is performing a full-time duty.

OFFICE MACHINES BIBLIOGRAPHY

A survey of 140 schools made to discover their views on various methods of selecting equipment, plans for teaching machine courses, plans for organization, and teacher requirements.


One way to eliminate the chance of human error of a system's eventual performance is to remove the worker. This, automation is doing to a certain degree. However, the human operator is here for quite a while. The program designed to motivate a man to produce work of high quality must take into account his group-related needs and his personal ones. Such a program must incorporate five essential elements.


Compares the cost of office machines with typewriters to prove that equipping an office machines room is not as expensive as its opponents seem to believe. Says that the replacement of typewriters is more expensive than other machines by 75 per cent.


The report of this Master's study lists the office duties of clerical workers in frequency of performance, including machine operation.


Discusses need for type of training necessary after the war. One point made shows difference was that clerical and machine practice should not be limited to pupils on the commercial course—the college prep group could and would benefit from the study of filing, calculating, transcription machines, etc.


This is a three-part article with subheading of the first as follows: "Most studies of business offices have shown that, after the typewriter, adding and calculating machines are most frequently used by office employees; and such investigators usually conclude that we should, therefore, offer training on these machines in our business training program."

OFFICE MACHINES BIBLIOGRAPHY

Discussion of the status of standards, saying that business wants standards. Gives sample standards (gleaned from recent reports) for operation of a few of the more common office machines (pages 86-8).


Purpose: To locate the various office-job opportunities for the high school graduate in the manufacturing industries of Muncie, Indiana; to list the office machines in use by high school graduates on the initial job; to determine employment requirements; to find out what questions employers ask a beginner during an interview. Materials and methods: Personal interviews, using check lists, with office managers in 54 industrial firms.


Philosophical discussion of the subject. The latter part bears examination, wherein the author criticizes: "Most sectional meetings of the national conventions of the American Vocational Association where speakers say 'give us better students'... This type of vocational education does not lend itself to the training of below-average students...'steer the poor students into something else.'" The writer says that this field of area of business education is broad enough and inclusive enough to have room for almost all levels of student ability.


The "teamwork trend" appears in areas which may be described under five different headings: (1) Determining the objectives of business education, (2) Development of course content, (3) Selection of students for specific training, (4) Selection of teachers who have intimate knowledge of their field as well as a keen understanding of business policies and procedures, and (5) Correlation of work and training.


Tells how the city and county departments lead in the use of dictating equipment. They have added methods which will permit them to get their work done despite deficiencies.


Discusses the use of these machines for small operation, as well as for the large city for which it was first thought to be meant. Starting at the year 1908 and the first die-set punch, it goes
OFFICE MACHINES BIBLIOGRAPHY

through 1947 and the Instantaneous Summary Punch (illus. page 189). These machines, though, had one trait in common—great speed and complete accuracy.


Need for office machines is apparent because of increased use of machines in business. Cites need for these machines in small as well as large high schools. Says that the reasons schools were slow to accept machines classes was due to (1) cost, (2) attitude of administrators, (3) lack of qualified teachers. States the objectives of the course, the basic machines, the content, how to get started, work projects for each machine, and the final correlation of learning.


The primary goal of the office education program is to meet national manpower needs by developing to the maximum the potential of those persons who will follow an office career.


Besides outlining the equipment that should be in the office practice laboratory, the author sets forth a protest against demanding prerequisites such as arithmetic for entrance into such a course. He further outlines the levels of competency to be sought in teaching the various adding and calculating machines.


A criticism of the inadequacy of the business program. Mentions specifically: "Except for typewriters and duplicating machines, the number of office machines available for instructional purposes in most Kansas business departments is limited...There is a great need for more adequate supervision of business education in the state."


Five people instead of eight; 66 ledgers instead of 500; hours instead of days.


Theme of 53rd Annual National Business Show in the New York Coliseum was "Automation Personified"—exhibition was a mass of tapes, punched cards, and memory drums. Office of 1970 features TV giving push-button access to stored away data.

Reference is made to Stutsman's article in January, February, and March issues of JBE, 1954. "Is adding and calculating machine training necessary?" While machine training is not uniquely necessary for securing employment in business jobs, such training should give considerable advantage in securing initial employment and is probably of significant importance in helping the new worker to adjust himself to the job." States that less than one per cent of all business workers are specifically machine workers. Mentions the handicap of being trained by a supervisor who has no conception of the teaching process and what it involves.


Discusses the variety of occupations in office work. Number of office employees, status of office training, groups served by training offered, also given treatment in the discussion; in the training area, instructional content, teacher qualifications, and professional leadership is discussed. Under "Business Trends in Office Training": (1) Better understanding of employment requirements, training standards, and teaching methods. (2) Emphasis on independence with respect to human relations, group responsibility, and opportunities for advancement, as well as the emphasis on skills. (3) Office training programs show, of course, that student has employable skill. (4) Supervisory training for department heads, junior executives, and managers. (5) State wants local supervision for all phases of business education, including training for the office occupations. (6) Demand for expansion for employment of services of the United States Office of Education with respect to business education.


Vocational training emphasizes manipulative skills; technical education emphasizes brain work and theory, training for jobs in fields like computers and missiles. These are very closely related but this editor says that you can't train the two in the same class. This article was written about a study made in Levittown, New York, Division Avenue High School, as part of NDEA in 1958.


"Several of the conclusions or confirmations of the observations frequently heard; That a significant number of teachers have a narrow concept of education; that they persist in loyalty to the few traditional office skills; and they are content to pass on to stude the learning that they received, justifying the criticism that they are preparing the students for the business world of yesteryay." Recommendation is given that the teacher should adjust to situations that are unexpected.
OFFICE MACHINES BIBLIOGRAPHY


100 years in Business Education, and inventory of business education issued on the occasion of the centennial year of NEA, Washington, D.C.


In 1958, 3 out of 10 employed women were clerks. Office machine operators are usually assigned one job to do on a particular machine; jobs are repetitive. Billing machine operators make up one of the largest groups of operators of mechanical office equipment.


Observation of beginning clerical workers in 17 different business organizations. "The operations selected for study were determined by an analysis of nine outstanding surveys of clerical work. The 69 most frequent operations of the office clerk resulted from this study and constitute the essential basis for training clerical workers.


This article was directed to the Business Professional Women's Club members (BPW) across the country, telling them that they could counsel and guide young girls so that they could better visualize the business world and so that they could obtain the best possible training. It directs these women to elevate the whole business education field by proposing changes and new methods to the business educator--ideas drawn from BPW's experiences.


This lists and describes several films which were produced by the Navy to help train office workers. There are 8 in the group, one of which is "Maintenance of Office Machines," emphasizing a number of ways in which machines can be protected against dust, dirt, and carelessness.


Of 227 questionnaires and letters, 87 per cent or about 190 responded. These were from fully accredited secondary schools. Summary of findings: (a) Office machines were used by teachers, students, administrators, (b) Machines instruction given in the twelfth grade, rotation plan offered in 47 schools, (c) Combination of textbook and office company materials used in 41 schools for
office machines courses, (d) Office machines equipment was reasonably up-to-date, (e) 65 teachers stated that their machines greatly resembled those used in local offices, (f) 89 business teachers were using all machines available, and (g) 72 indicated additional machines were needed.


Lists itemized cost of equipment for office machines classrooms as well as furniture, etc. Emphasis is on cost. Suggest additional research for developing equipment standards and their related costs for all instructional areas.


Implies very definitely that machines are becoming more and more complicated and expensive—billing machines, calculators, duplicators—so that no specific training should be required because schools just can't keep up with business in equipping on an equal basis.


The study reports on 142 questionnaires and 7 personal interviews made in Columbus in 1940. Items covered were number of machines used, operators employed, kinds of work done on machines, other duties performed, weaknesses of operators, and reasons for discharge.


Purpose: To determine whether the schools were meeting the needs of business in the area. Problem included investigating informed managers and personnel representing executives in Syracuse business firms.


What the employer wants: Versatility in order to provide opportunity for transfer from one job to another and in order to train for supervisory work. Skills make up only about 10 to 35 per cent of the worker's employability.

What the employer is getting: Inaccuracy, volume of work too small in transcription and carbon work, too much talking to neighbors, too much delay between jobs.
OFFICE MACHINES BIBLIOGRAPHY


This expresses the need for business to do more than furnish charts on the operational use of office machines. Says that representatives should talk directly with business teachers to tell why and how business uses their equipment.


This is a discussion of how the functions of the office are changing, due to new tools and techniques.


Describes "new" calculator (National Business Show in New York), Elliott tax bill printer; addressing machine, general accounting machine, bookkeeping machine for register posting, as well as for adding and subtracting, Burroughs Fanfold Order-Writing machine described step-by-step.


Recession over, demand for workers is up. We need people who can use their heads, who can assemble data to be used in the computers. Instead of secretaries handling so much dictation, more jobs are opening up for transcription machine operators, and the secretaries are being released and needed for decision-making tasks.


This article is concerned mainly with office equipment but some interesting facts are revealed regarding clerical activity--"From 1950 to 1960, the number of clerical workers in the nation rose by 28.9%--a rate of growth nearly as great as even that of the Gross National Product." This implies that company overhead is going to consist, more and more, of clerical salaries, expensive floor space, fringe benefits, and lost hours of coffee breaks... In other words, that mushrooming clerical force is threatening to become a truly vast business expense, possibly outweighing in time such other major costs as raw materials, distribution, and transportation.


"Some employers scored the public high schools for not providing specialized office machines instruction; that the schools were not turning out enough employable graduates in the occupational areas in which they were furnishing training; weaknesses of graduates were in attitudes, character traits, and fundamentals."

Tells what businessmen expect of their beginning employees. "Many New York City business firms conducted training programs designed to train new employees in clerical skills and to orient them to their firms. The aim of this study was to examine the programs and study their organization's aims, methods, and materials for the purpose of improving the clerical programs in the New York City schools." Members of NOMA conducted this study by mail; 36 firms were selected for study.


An official of the Hoover Company makes recommendations to potential office workers as to what machine training they will need for success on the job.