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OFFICE MACHINES USED IN BUSINESS TODAY, AN ANNOTATED AND
CLASSIFIED BIBLIOGRAPHY FOR THE YEARS 1938 THROUGH 1964.
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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
RESE. RCH 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 THESES, DISSERTATIONS, AND STATE AND
UNIVERSITY PUBLICATIONS ARE INCLUDED. (PS)

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OFFICE MACHINES

USED IN BUSINESS TODAY
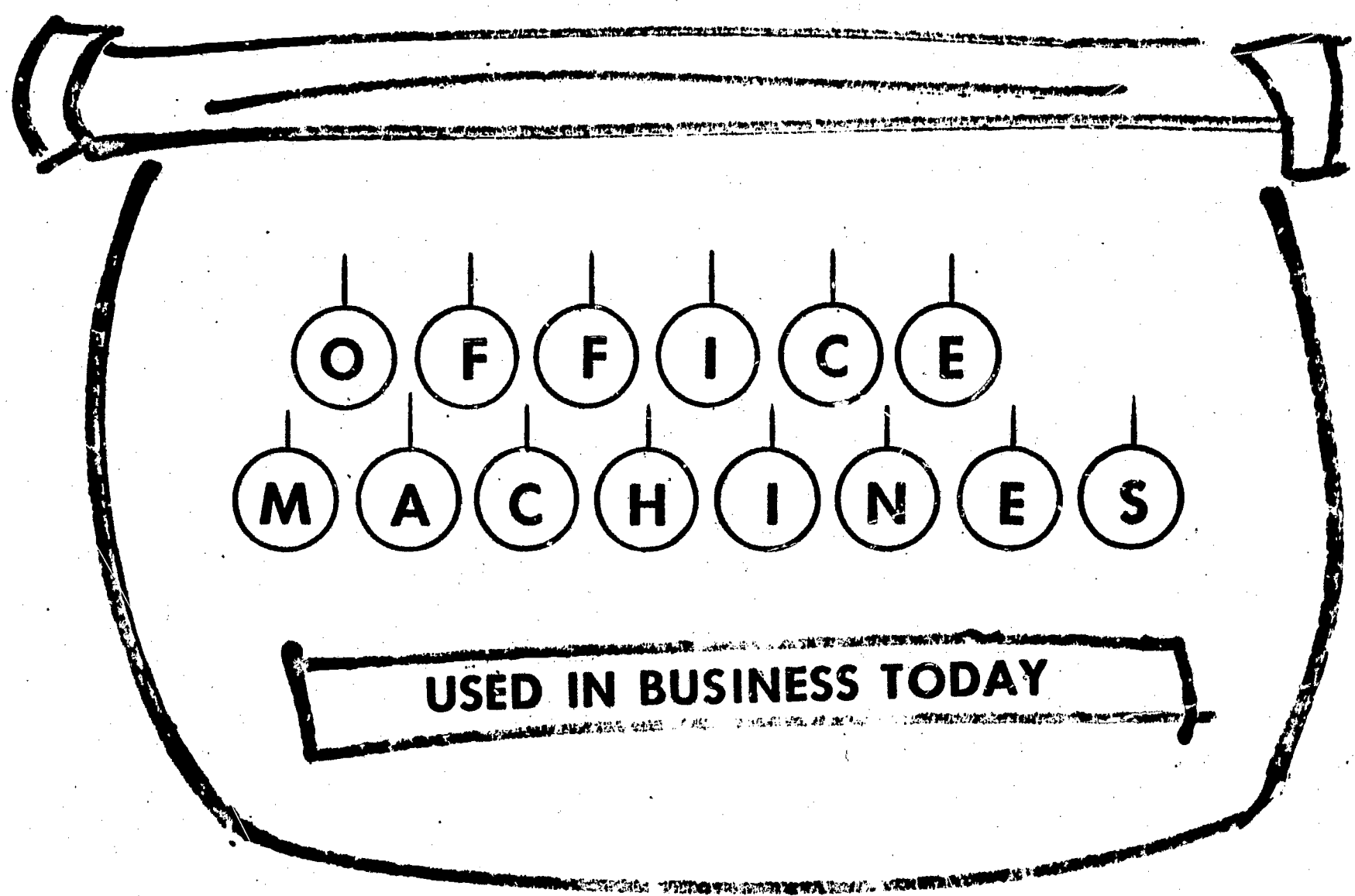
AN ANNOTATED BIBLIOGRAPHY

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

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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	IQ	-	Mental Capacity
BSch	-	Business Schools	JOB	-	Business
CALC	-	Calculators	MGT	-	Management
CON	-	Concept	MST	-	Measurement
CRS	-	Course of Study	NST	-	Teachers
CSM	-	Criticism	PHL	-	Philosophy
CWB	-	Cooperation with Business	RCM	-	Recommendations
DE	-	Distributive Education	RES	-	Research
EDP	-	Automation	SEC	-	Secondary Education
EQT	-	Equipment	SRV	-	Surveys
EXP	-	Experiment	STD	-	Standards
FTR	-	Future	TRD	-	Trend
GVT	-	Government	TRG	-	Training
HST	-	History	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	Code

1. Agnew, Peter L. Office Machines, Vocational and Professional Monographs. Boston: Bellman Publishing Company, 1941.   **JOB-STSM**

   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.

2. Agnew, Peter L. and Nicholas, J. Cornelia. Office Machines Course, 3rd. ed. Cincinnati: South-Western Publishing Co., 1962, 124 pages.   **SEC-CRS**

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

3. Harms, Harm. Methods in Vocational Business Education. Cincinnati: South-Western Publishing Co., 1939.   **TRG-STSM**

   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.

4. Kephart, William M. Liberal Education and Business, by James E. McNulty, Earl J. McGrath. New York: 1963, 110 pages. Bibliography pages 91-110.   **PHL-SEC**

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

5. Liles, Alton B. Parker. Some Factors in the Training of Clerical Workers. Delta Pi Epsilon Award Publication, 1947, Oklahoma A. & M. College, 1949.   **TRG-STSM**

   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.

6. Nichols, Frederick G. Commercial Education in the High School. New York: D. Appleton-Century Company, 1933.   **PHL-STSM**

   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."

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

   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.

8. NCMA, Seattle Chapter. Business Education--The Door to the New Frontier.   SRV-STSM
   1947.

   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.

9. Occupational Outlook Handbook. Bureau of Labor Statistics, Department of   JOB-FTR
   Labor. 1963-64, pages 267-85. (Career information for use in
   guidance.)

   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."

10. Ohio, State of. Ohio High School Standards for Business Education.   SRV-SRSM
    Columbus, 1947, pages 83-8.

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

11. Potter, Thelma M. An Analysis of the Work of General Clerical Employees,   JOB-STSM
    Contributions to Education, No. 903. Bureau of Publications,
    Teachers College, Columbia University. New York: 1944.

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

12. Stockman, Edgar R. An Integrated Office Practice Course of Study for   CRS-STSM
    Secondary Schools, NABTTI Bulletin, No. 50. 1950.

    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.

13. Tonne, Herbert A. Principles of Business Education. New York: The   TRG-STSM
    Gregg Publishing Company, 1947.

    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	Code

1. "A Banker Looks at Electronics," Business Week, March 30, 1957, page 105. **TRD-JOB**

   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.

2. Aberle, John Wayne. "An Evaluation of a College's Curriculum in Business," **MST-BSch** Dissertation Abstracts, Vol. 15, Publication No. 11156, 1955, page 378.

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

3. "Adding Machines That Think," Business Education World, Vol. 33, June, **CALC-TRD** 1953, pages 484-5.

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

4. Agnew, Peter L. "The Determination of the Content of a Course in Office **ANIS-STSM** Practice," Unpublished Doctor's Dissertations, New York University, 1940.

   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.

5. "All Quiet on the Office Front," American City, Vol. 55, January, 1940, **CALC-TRD** page 7.

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

6. Anderson, Harry C. "The Advances in Office Equipment," The Office, Vol. **EQT-FTR** 59, No. 1, January, 1964, pages 131, 291-4.

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

7. Andrews, Margaret E. "Calculator Training in the Comprehensive High **CALC-SEC** School," Balance Sheet, Vol. 33, May, 1952, pages 396-9.

   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.

8. "Are B-Schools on the Right Track?" _Business Week_, April 13, 1957,   BSch-TRD
    page 50.

    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.

9. Baldwin, Woodrow M. "Introducing a Worker to a Machine," _Office Executive_,   TRG-JOB
    Vol. 29, August, 1954, page 22.

    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.

10. Barnhart, Wilbur S. "Office Machines and Business Education," _National_   EQT-CON
    Business Education Quarterly, Vol. 6, 1938, pages 44-6.

    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.

11. Barnhart, Wilbur S. "A Practical Program for Teaching Office Machines,"   NST-SEC
    Business Education Digest, Vol. 6, No. 1, March, 1942, pages 55-7.

    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.

12. Bates, Gertrude and Ferguson, Harold. "An Integrated Unit in Office   TRG-ECM
    Practice," _Business Education World_, Vol. 33, No. 7, March, 1953,
    pages 323-4.

    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.

13. Bauernfeind, H. B. "Office Machines--Some Comparisons of Various Methods   CSM-STSM
    of Teaching," _American Business Education_, Vol. 2, May, 1946,
    pages 228-32.

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

14. Baugham, Lloyd E. "Planning Your Office Machines Course," _Business_   CRS-NST
    Education World, Vol. 33, January, 1953, pages 239-41.

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

5. Beaumont, John. "Improvement of Vocational Business Education," American   SEC-RCM
   Business Education, Vol. 2, 1945-46, page 260.

   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.

6. Beckley, Donald K. "Meet Business Needs Through Cooperative Education,"   DE-CWB
   School Review, November, 1943, pages 539-43.

   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.

7. Beckley, Donald K. "Training for Small Business Operation," Industrial   IRG-JOB
   Arts and Vocational Education, November, 1945.

   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.

8. Berger, Cyril S. "Handling the Finished Product," Office Executive, Vol.   EQT-JOB
   27, October, 1952, pages 31-2.

   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.

9. Blackledge, Walter. "Today--25 Million Office Jobs; Tomorrow--7 Million   CRS-FTR
   More!" Journal of Business Education, Vol. 39, December, 1963,
   pages 96-7.

   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.

10. Blackstone, Bruce I. "Education for Office Occupations," School Life, Vol.   RCM-FTR
    43, November, 1960, pages 18-20.

    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.

1. Blackstone, Bruce I. "The Expansion of Office Education," The Office,   TRD-JOB
    Vol. 59, No. 1, January, 1964, pages 122, 295-6.

        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 th : both production and distribution rests 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.

22. "Bookkeeping Machine Practice with a Purpose," Balance Sheet, Vol. 39,   TRG-RCM
    November, 1957, page 128.

        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.

23. Brendel, Leroy. "Where + Who + What + How = Office Practice," NEA   NST-RCM
    Journal, Vol. 8, February, 1954, pages 9-13.

        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.

24. Brendle, A. A. "Measuring Office Production," NOMA Forum, Vol. 16,
    February, 1941, pages 20-1.

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

25. "Bringing City Records to Life," American City, Vol. 54, October, 1939,   GVT-JOB
    pages 42-3.

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

26. Brooks, Thomas R. "New Fit to the White Collar," Dun's Review, Vol. 82,   FTR-JOB
    Part 2, September, 1963, pages 98-100.

        ("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 48 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.

27. Brown, Courtney C. "Knowledge of What?" Guest Editorial, <u>Saturday Review</u>, CSM-CON
Vol. 42, January 17, 1959, pages 52, 79.

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 ...."

28. Bryan, R. D. "Clerical Training Values of Calculating and Adding Listing   SRV-STSM
Machines," <u>UBEA Forum</u>, Vol. 2, January, 1948, pages 29-31, 47.

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.

29. Bryan, R. D. "Training 1970's Office Staff Today," <u>Journal of Business</u>   TRG-FTR
<u>Education,</u> Vol. 32, December, 1956, pages 119-20.

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."

30. Buchen, Harvey A. "Office Machines Versus Office Practice," <u>Balance Sheet,</u> NST-TRG
Vol. 31, February, 1950, pages 258-9.

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.

31. Buchen, Harvey A. "Office Machines Versus Office Practice," Balance Sheet, IQ-STSM
Vol. 31, February, 1950, pages 258-9.

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

32. Bund, Henry. "Office Machines--Their Part in the Mobility Effort; Trends   TRD-EQT
and Developments in the Equipment Industry," Office Executive, Vol. 26, May, 1951, pages 14-7.

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.

33. "Business Education for What?" University of Chicago Conference on Business SEC-CON
Education, Chicago.

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?

34. "Business Machines Are Only 60 Years Old," American City, Vol. 62,   HST-EQT
January, 1947, page 7.

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.

35. Callerman, C. C. "Instruction on the Operation of the Multigraph,"   NST-TRG
Journal of Business Education, Vol. 15, No. 6, February, 1940, page 25.

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

36. Carmichael, Vernal H. "Need for Research in the Field of Office Machines   RES-SEC
and Clerical Practice," NBEQ, Vol. 14, December, 1945, pages 49-54.

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.

.   Casad, Kathleen H. "A Design for a Business Machines in Ohio--How to   TRG-SEC
    Achieve Maximum Results with a Minimum Waste of Classroom Time,"
    Journal of Business Education, Vol. 39, December, 1963, pages 98-100.

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

8. Chambers, Ima; Cross, Lois; Howe, Karl. "Plans for the Office Machines,   EQT-FTR
    Office Practice Room at Central Michigan University," Journal of
    Business Education, Vol. 37, February, 1962, pages 182-3.

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

9. Chapman, Florence. "A Study of Office Practices and Machines Used in   SRV-STSM
    Business Offices of Quincy, Illinois," Unpublished Master's
    Thesis, University of Iowa, 1942.

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

0. Clark, Ray A. "Office Machines, Selection Principles," Office Executive,   EQT-JOB
    Vol. 30, June, 1955, pages 17-8.

    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?

41. "College Attuned to Business: Northwood Institute, Midland, Michigan,"   BSch-CWB
    Business Week, September 7, 1963, pages 143-4.

    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.

42. Conkling, Clarence M. "Put That Machine to Work," Balance Sheet, Vol. 32,   SEC-RCM
    May, 1951, pages 394-6.

    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.

43. Cook, Fred S. "Could This Happen to One of Your Shorthand Students?"
    UBEA Forum, October, 1954, pages 20-2.

    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.

. Cook, Fred S. "A General Clerical Course for Seniors," _Business Education Forum_, February, 1962, pages 7-9.

How much practice on machines do clerical workers need? This and related topics are the focus of the proposed course.

. Craf, John R. "Preparing Young People for Business," _Journal of Business Education_, Vol. 5, No. 8, April, 1940, pages 11-2, 14.   CON-SEC

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.

6. Crawley, Kermit. "Vocational Requirements for Beginning Office Jobs,"   ANLS-JOB
Industrial Arts and Vocational Education, Vol. 40, January, 1951, page 27.

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.

47. Cross, Henry A. "They Need More Than Skills," _Business Education World_,"   MST-JOB
Vol. 21, September, 1940, pages 31-3.

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.

48. Crownover, Hugh L., Jr. "A Survey to Determine the Needs for Courses in   SRV-STSM
Office Machines in the Public High Schools of Knoxville,"
Unpublished Master's Thesis, University of Tennessee, 1941.

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.

49. Currigan, Thomas. "Office Mechanization Experience," _American City_,   EDP-GVT
Vol. 74, June, 1959, page 139.

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

50. Daniels, E. M. "Calculator Training for Varied Ability Students,"   IQ-STSM
        American Business Education, Vol. 2, May, 1946, pages 245-7.

        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.

51. Daniels, George S. "High School Calculating Machines Course," Journal of   CALC-SEC
        Business Education, Vol. 17, No. 8, April, 1942, pages 17-9.

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

52. Dobie, R. Magruder. "How to Educate a Secretary," Saturday Evening Post,   BSch-TRG
        Vol. 221. February 12, 1949, pages 30-1, 116.

        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.

53. Dotson, Verner. "Procuring Funds for Office Machines," National Business   EQT-RCM
        Education Quarterly, Vol. 16, May, 1948, pages 43-8.

        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.

54. Fairbrother, Roy. "Education for Business--What the Inventory Shows,"   ANAL-SEC
        Education, Vol. 66, December, 1945, pages 233-7.

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

55. Falkner. Robert E. "Machines, the Orphan Subject," The Balance Sheet,   CALC-TRG
        Vol. 33, December, 1951, pages 160-1, 163.

        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."

56. Fasnacht, Harold. "Background Preparation for Office Machines Training,"   TRG-SEC
        Business Education World, Vol. 23, March, 1943, pages 413-5.

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."

57. Fasnacht, Harold D. "Equipment and Supplies for the Office Appliance   EQT-SEC
Laboratory," UBEA Forum, Vol. 3, April, 1949, pages 14-5.

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.

58. Ford, Gertrude C. "Keeping Office Machines Instruction in Line with   RES-TRG
Psychological and Scientific Findings," NBEQ, Vol. 9, March, 1942,
pages 9-12, 45-7.

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   TRG-NST
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 36.8 per cent of the total of all machines reported;
the electric reported 11 per cent of the total of all machines.

60. Fox, Frederick G. "Performance Standards in Office Operations," NBEQ,   MST-STSM
Vol. 9, Spring, 1941, pages 15-6, 33.

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

61. Franques, Marie Louise. "Some Problems and Trends in the Teaching of   NST-TRD
Office Machines and Appliances," UBEA Forum, Vol. 9, March, 1955,
pages 27-8.

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 "acquaintanceship
level is sufficient."

62. Freeman, Max Herbert. Business Education World, New York, New York, 1943,   RES-NST
        55 pages.

        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.

63. Gabler, J. Kenneth. "Teaching Office Machines," Journal of Business   NST-TRG
        Education, Vol. 18, No. 4, December, 1942, pages 19-20.

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

64. Garwood, Samuel. "Layout and Equipment," NOMA Forum, Vol. 24, January,   EQT-STSM
        1949, pages 19-28.

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

65. Gehres, Maxine. "Machine Calculation," Ohio Business Teacher, Vol. 9,   TRG-STSM
        October, 1949, pages 23-5, 28.

        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.

66. Gibson, Dana and Straub, Luralyn. "What a High School Business Graduate   TRG-NST
        Should Know About Business Machines," Business Education World,
        Vol. 32, No. 7, March, 1952, pages 325-6.

        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.

67. Gibson, Dana and Straub, Luralyn. "What a High School Student Should Know   TRG-NST
        About Duplicating Machines," Business Education World, Vol. 32,
        No. 7, April, 1952, page 389.

        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.

68. Gibson, E. Dana. "It's Time to Teach Business Electronics--And We Are   EDP-TRD
      Doing It At San Diego State," Business Education World, Vol. 36,
      June, 1956, page 28.

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

69. Gibson, E. Dana. "Office Automation: How It Will Affect Business   EDP-SEC
      Education in the Future," Balance Sheet, Vol. 39, November, 1957,
      pages 100-5.

      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.

70. Giordano, Albert G. "Office Practice Area Report," American Business   EDP-TRD
      Education, Vol. 15, October, 1958, pages 173-4.

      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.

71. Goldsmith, Samuel. "The Formulation of an Office Machines Course in the   CRS-SEC
      Secondary Schools," Journal of Business Education, Vol. 5, No. 8,
      April, 1940, pages 19-20.

      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.

72. Gottsdanker, Robert M. "Measures of Potentiality for Machine Calculation,"   IQ-STSM
      Journal of Applied Psychology, Vol. 27, June, 1943, pages 233-48.

      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.

73. Gratz, Jerre Eugene. "Identification and Analysis of the Major Issues in   ANAL-SEC
      Selected Business Education Subjects of the Public Secondary
      Schools," Dissertation Abstracts, Vol. 22, No. 6-7, 1961-2,
      pages 2300-1.

      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.

74. Green, Vera. "NOMA's Suggested Standards for Beginning Office Jobs,"   STD-JOB
Education, Vol. 72, October, 1951, pages 101-6.

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.

75. Croark, James F. "Incubating Office Workers," Chicago School Journal,   CWB-JOB
Vol. 30, No. 2, March-April, 1949, pages 202-5.

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.

76. Gruber, Charlotte. "Office Machines--Vital Phase in Clerical Training,"   TRG-SEC
UBEA Forum, Vol. 11, February, 1957, pages 12-4.

"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.

77. Gustafson, Carolyn and Phil. "Secretaries Wanted--Desperately," Saturday   GVT-CON
Evening Post, Vol. 224, October 6, 1951, pages 40, 71-2.

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."

78. Guthrie, Meard Raymond, Jr. "The Measurement of Personal Factors Related   MST-JOB
to Success of Office Workers," Dissertation Abstracts, Vol. 13,
Publication No. 6383, 1953.

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.

79. Hanebrink, Lawrence. "Employment of Office Machine Operators," Journal of
Business Education, Vol. 16, January, 1941, pages 23-4.

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.

80. Harry, Nell. "A Business Machines Course," Balance Sheet, Vol. 45, No. 1,   CSM-SEC
    September, 1963, pages 17-9.

    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.

81. Hartsel, Gladys S. "Teaching Business Machines," Business Education World,   TRG-SEC
    Vol. 26, January, 1946, pages 241-2.

    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."

82. Hittler, George M. "Problems and Issues with Reference to Teaching   CON-STSM
    Procedures in Business Machines," National Business Teachers
    Association Yearbook, 1941, pages 296-304.

    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.

83. Hittler, George M. "Teacher Training in the Field of Business Machines,"   NST-TRG
    NBEQ, Vol. 14, December, 1945, pages 45-8, 60.

    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.

84. Hittler, George M. "Training Office Machine Operators," Journal of Business TRG-SEC
    Education, Vol. 20, June, 1945, pages 15-6.

    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 p viding 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--

should be thoroughly known by the teacher. (8) Learner must participate in the demonstration, as demonstration techniques are very often of most value in developing machine skill. (9) Different types of machine courses may be offered on different grade levels. (10) An adequately equipped laboratory is necessary in order that the student can integrate its operation into total mastery of the total machine skill. (11) Teacher should encourage good posture, hand position, correct stroking habits, etc. (12) Arrangement of machine, materials, etc., is important.

85. "How to Get Rid of Some of the Office Paper Work," Personnel, Vol. 40,   RCM-JOB
    No. 5, September, October, 1963, pages 55-61.

    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.

86. Howard, Harold and others. "Improving Learning and Achievement in Business TRG-STSM
    Office Machines," The American Business Education Yearbook, Vol. 2,
    1945, pages 240-60.

    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.

87. Hughes, Arthur E. and Reineke, William H. "A Set of Standards in Teaching MST-SEC
    Office Machines," Balance Sheet, Vol. 38, December, 1956, pages
    166-7.

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

88. Hunt, Raymond. "Administration of Office Equipment," NOMA Forum, Vol. 24, EQT-STSM
    February, 1949, pages 19-27.

    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.

89. Hunt, Raymond. "Selection of Office Machines," Journal of Business   EQT-SEC
    Education, Vol. 25, September, 1949, page 39.

    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.

90. Hunter, Roy O. "Does Your School Offer Courses in Office Machines?"   CRS-SEC
    UBEA Forum, Vol. 7, April, 1953, page 35.

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.

91. Huskey, H. D. and Huskey, V. R. "New Frontiers in Business Management Control Are Being Established by Electronic Computers," _Journal of Accountancy_, Vol. 93, January, 1952, pages 69-75.   EDP-TRD

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

92. Hutchinson, A. R. "How to Determine Office Equipment Requirements," _AMA Office Management Series_, No. 120, 1948, pages 26-32.   EQT-SYSM

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

93. Indiana University, Bureau of Business Research. Indiana business information Bulletin #9, 1960, 80 pages, illus.   RES

Proceedings of the 1960 DBA Conference on Education for Business. Bloomington Bureau of Business Research, School of Business, Indiana University.

94. Jarrett, Jack L. "A Surevy of Office Machines Equipment in a Selected Group of Business Firms in the Pittsburg, Kansas, Area," Master's Thesis, Kansas State College of Pittsburg, 1958, 66 pages.   SRV-JOB

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.

95. Jenal, Robert L. "Punched Cards Present a Problem," _Business Education Forum_, Vol. 6, No. 3, December, 1951, page 22.   EDP-SEC

"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.

96. Jernberg, George. "Business-Machines Training in a Minnesota High School," _American Business Education_, Vol. 17, No. 5, May, 1961, page 263.   SEC-TRG

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

97.   Jewett, Grandjean G.   "A Survey of Available Electronic Computers and What   EDP-SRV
      They Can Do for Modern Business," Journal of Accountancy, Vol. 96,
      August, 1953, pages 182-9.

      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.

98.   "Jobs on Electronic Office Machines," Changing Times, Vol. 11, September,   EDP-JOB
      1957, pages 31-3.

      "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 back-
      ground, but the experience you manage to gain inside a company."

99.   Johnson, B. Thorvald.   "Devising Instruction Sheets for the Hand-Operated   CALC-STSM
      Crank-Driven, Non-Listing Adding Calculator," Unpublished Master's
      Thesis, University of Southern California, 1942.

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

100. Kahn, Gilbert.   "The Operation of Instruction Materials for a Secondary   CRS-SEC
      Course in Stenographic Machine Shorthand," Dissertation Abstracts,
      Vol. 15, Publication No. 12221, 1955.

      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.

.101. Kappel, David J.   "Summary of Civil Service Opportunities for the Operators   GVT-TRG
      of Office Machines," Business Education World, Vol. 31, April,
      1951, pages 393, 396.

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

102. Kennedy, Calvin.   "Some Definite Teaching Procedures for Business   NST-SEC
      Machines," Balance Sheet, Vol. 38, January, 1957, pages 210-1.

      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.

103. Kennedy, Calvin.   "Using the Guest Speaker in Teaching Office Machines,"   EXP-TRG
      UBEA Forum, Vol. 10, May, 1956, page 28.

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

104. Kerman, A. J. "Punched Card Training Needed," Journal of Business Education, Vol. 32, January, 1957, page 198.   EDP-TRG

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

105. Kirksey, C. Darwin. "Which Office Machines Shall We Teach?" Collegiate News and Views, Vol. 8, March, 1955, pages 13-6.   NST-EQT

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.

106. Klein, Herbert E. "More Value for the Office Dollar," Dun's Review, Vol. 82, Part 2, September, 1963, pages 116-8.   EDP-JOB

Office equipment has been one of the major growth industries. Sales have increased sevenfold since World Was 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.

107. Krause, Ruthetta. "Business Machines Must Be Included in Our Business Training Program," Business Education World, Vol. 31, September, 1950, pages 36-8.   CON-TRG

"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.

108. Kroepsch, Helen J. " Office Machines Training Is Important," UBEA Forum, Vol. 3, February, 1949, page 31.   TRG-SEC

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

109. Kuethe, Verna. "Business Students See Business in Action," Balance Sheet, Vol. 45, No. 1, September, 1963, pages 7, 48.   CWB-SEC

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.

110. Lichtenheld, F. M. "Why Give Office Machine Instruction?" Journal of   ANAL-NST
      Business Education, Vol. 15, No. 5, January, 1940, pages 15-6.

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

111. Liguiori, Frank Edward. "Problems of Beginning Office Workers,"   ANAL-JOB
      Dissertation Abstracts, Vol. 16, Publication No. 15, 114, 1956,
      page 47.

      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."

112. McBride, William J. "Survey of Office Machines in the Beloit, Wisconsin,   SRV-JOB
      South Beloit, Illinois, Area," Master's Thesis, University of
      Wisconsin (Madison), 1956, 68 pages, National Business Education
      Quarterly, Vol. 27, October, 1958.

      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,   CON-EQT
      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.

114. McNall, Nyla. "Office Machines as Taught in the Colorado Springs High   SEC-IQ
      School," Balance Sheet, Vol. 36, January, 1955, pages 205-7.

      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.

115. McVey, Jennie. "Office Machines to Fit the Job," Business Education Forum, EQT-SEC
      Vol. 8, December, 1953, pages 31-5.

      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.

116. "Machine Accounting in the Municipal World of Today," American City, Vol.   EQT-GVT
      54, October, 1939, page 43.

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

117. "Making Office People More Productive," Office Productivity Pamphlet,   SRV-TRG
      (Reprinted from Dun's Review, September, 1960), pages 11-6.

      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.

118. Meehan, James R. "Achievements in the Office Practice Subjects,"   CALC-STSM
      Commercial Educational Association of the City of New York Yearbook,
      1938-9, pages 35-41.

      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.

119. Meehan, James R. "Office Machine Training--the Time Required for an   TRG-STSM
      Adequate Program," UBEA Forum, April, 1947, pages 17-8.

      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.

120. Mell, Harry. "A Business Machines Course," Balance Sheet, Vol. 45,   CRS-SEC
      September, 1963, pages 17-9.

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.

121. Melson, Elizabeth R. "Devices for Increasing Efficiency in Teaching   TRG-SEC
Office Equipment," Journal of Business Education, Vol. 37,
October, 1961, pages 10-2.

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.

122. Morrell, Donald C. "Los Angeles Standards Survey," Journal of Business   SRV-JOB
Education, Vol. 25, February, 1950, pages 25-7.

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.

123. Morrison, Rose. "What Price Progress?" UBEA Forum, Vol. 10, February,   HST-RCM
1956, pages 13-4.

"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."

124. Morrow, Joseph H. "A Businessman Looks at Business Education in the High   JOB-SEC
Schools," Balance Sheet, Vol. 45, No. 3, November, 1963, pages
105-8, 138.

"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.

125. Morse, Olga Scott. "Adapting the Office Machine Course to the Community,"   SEC-RCM
Journal of Business Education, Vol. 17, No. 2, October, 1941,
pages 19-20.

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.

126. "Municipal Significance of Dictating Machines," American City, Vol. 54,   CON-EQP
March, 1939, page 7.

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.

127. Mussleman, Vernon A. "An Administrator Evaluates the Machines Courses," SEC-RCM
American Business Education, Vol. 4, 1947-8, pages 296-7.

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.

128. Nash, Elizabeth A. "The Textbook's Place in Machine Office Practice," CON-STSM
Business Education World, Vol. 19, October, 1938, pages 138-40.

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.

129. Neill, Jack Ramsey. "A Critical Study of Business Education in the CSM-SEC
Public Secondary Schools of Ohio," Dissertation Abstracts, Vol.
16, Publication No. 16,617, 1956, page 1408.

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.

130. Nicholas, J. Cornelia. "The Development of a Self-Instructing Manual for TRG-CRS
the Burroughs Sensimatic F-100," Dissertation Abstracts, Vol. 18,
Publication No. 24,186, New York University, 1958.

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

131. Nichols, Frederick G. "Criticism, Comment, and Challenge," Journal of CSM-TRG
Business Education, Vol. 18, No. 5, January, 1943, page 9.

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.

132. Nichols, Frederick G. "Criticism, Comment, Challenge," Journal of Business CSM-STSM
Education, Vol. 18, January, 1943, pages 9, 25.

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

133. NOMA, Fort Worth Chapter. "Machine Training Recommended," NOMA Forum,   SRV-STSM
        Vol. 24, April, 1949, pages 44-5.

        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.

134. "Now the Electronic Clerk," U. S. News and World Report, Vol. 38,   TRD-EDP
        February 11, 1955, pages 50-2.

        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.

135. Null, Thomas W. "Office Machines Operators?--Certainly!" Journal of   CWB-TRG
        Business Education, Vol. 20, September, 1944, page 26.
        (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.

136. "Office Jobs: Pay and Pay Prospects," Changing Times, Vol. 10, June,   TRG-FTR
        1956, pages 41-3.

        "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."

137. "Offices Short 600,000 Workers," Nation's Business, Vol. 43, December,   NST-TRG
        1955, pages 64-7.

        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.

138. "Offices Want Individuals, Not Simply Job Holders," Business Education   ANAL-JOB
        World, Vol. 44, No. 2, October, 1963, pages 27, 37.

        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.

139. O'Toole, Thomas. "White Collar Automation," Reporter, Vol. 29, December   EDP-FTR
5, 1963, pages 24-7.

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."

140. Partin, Willie Curtis Wright and Dial, Fred W. "A Course in Business   SEC-RCM
Machines," Balance Sheet, Vol. 27, No. 3, November, 1945, pages 84-7.

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.

141. Payne, Vernon W. "A Study of Business Education in the Public Secondary   SRV-RCM
Schools of New Mexico," Dissertation Abstracts, Vol. 13, Publication
No. 6305, 1953.

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

142. Perry, Clark. "Arithmetic Fundamental to Machine Instruction," Journal of   NST-RCM
Business Education, Vol. 18, No. 7, March, 1943, pages 19-20.

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.

143. Peterson, Harold R. "Office Machine Practice and the Improvement of its   TRG-STSM
Instruction," The Balance Sheet, Vol. 24, October, 1942, pages 65-7,
96.

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.

144. Pilkenton, Kenneth U. "An Investigation of the Duties of the General   TRG-STSM
Office Clerk," American Business Education Digest, Vol. 1,
May, 1945, pages 211-2.

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.

145. Piraino, Thomas A. "People and Procedures," The Office, Vol. 57, No. 5,   MGT-TRG
May, 1963, pages 297-9.

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.

146. Place, Irene. "Evaluation of the Office Practice Program," National   ANAL-JOB
Business Education Quarterly, Vol. 22, No. 2, Winter, 1953, pages
31-7.

"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.

147. Plummer, Morgan H. "Machines to Fit the Job," Journal of Business   EQT-JOB
Education, Vol. 29, No. 4, January, 1954, page 157.

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.

148. Porter, Gerald A. "Instruction in Office Machines," Business Education   TRG-SEC
Forum, Vol. 9, February, 1955, pages 28, 42.

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

149. Potter, Thelma Maude. "An Analysis of the Work of General Clerical   NST-JOB
Employees," The National Association of Business Teacher-Training   NO AN
Institutions, Bulletin No. 39, December, 1945, page 59.

150. Potter, Thelma Maude. "Current Trends in Unit Planning for Office   CRS-SYSM
Machines," Eastern Commercial Teachers Association Yearbook, 1942,
pages 169-75.

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.

151. Potter, Thelma Maude. "The Teaching of Office Machines; Methods,   TRG-NST
Techniques, and Standards," American Business Education, Vol. 4,
May, 1948, pages 266-8, 276-7.

"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."

152. "Programed Training of Office Workers," The Office, Vol. 57, No. 5, May,   TRG-EDP
1963, pages 86-91, 270-7.

This article points out that managers are using programed 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.

153. Puckett, Cecil. "Trends in Business Education," NEA Journal, Vol. 39,   SEC-TRD
      February, 1950, pages 34-5.

      The purpose of the high school business program should be two fold:
      (1) To provide an opportunity for students to acquire skills and
      knowledges 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.

154. Reagen, Mary Joan. "A New Deaprtment--A New Outlook!" Balance Sheet, Vol.   RCM-SEC
      38, February, 1957, pages 251-3.

      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.

155. Reed, James Ralph. "Circumstances Surrounding the Employment of Beginning   SRV-JOB
      Office Workers in Oklahoma City," Dissertation Abstracts, Vol.
      15, Publication No. 14019, 1955, page 2443.

      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.

156. Regis, Sister Mary. "Some Problems and a Few Suggestions," Business   RCM-SEC
      Education World, June, 1945, pages 565-6.

      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.

157. Reuter, Helen M. "A Study of Equipment in Business Departments in Ohio   EQT-STSM
      High Schools in Cities of 6,000 to 23,000 Population with Special   NO AN
      Reference to Such Equipment in Fremont High School," Unpublished
      Master's Thesis, The Ohio State University, 1939.

158. "Revolution in Office Work; How Automation is Taking Over," U. S. News   FTR-EDP
      and World Report, Vol. 46, May 4, 1959, pages 66-71.

      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.

159. Reynolds, W. T. "Office Machines--Plan Before You Purchase," Office   EQT-JOB
      Executive, Vol. 27, March, 1952, pages 18-20.

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

160. Roberts, Ruth L. "Desirable Standards and Practical Measurement of   SEC-MST
      Achievement on Office Machines," Business Education Digest, Vol.
      6, No. 1, March, 1942, pages 52-4.

      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 that 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.

161. Robinson, Julius M. "Teaching Business Machines Course n a Small High   NST-SEC
      High School," Business Education Digest, Vol. 5, No. 1, March,
      1941, pages 109-12.

      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.

162. Robitaille, Louis J. "Purchasing, Maintaining, and Replacing Office   EQT-SEC
      Machines," UBEA Forum, Vol. 9, May, 1955, pages 30-1.

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

163. Ross, Allan J. "Recent Developments in Business Machines," American   TRD-EQT
      Business Education, Vol. 25, No. 4, May, 1959, pages 208-11.

      "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."

164. Roughsedge, M. Gertrude. "Training Calculating Machine Operators,"   CALC-TRG
      Journal of Business Education, Vol. 15, No. 7, March, 1940,
      pages 21-2, 24.

      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.

165. Roughsedge, M. Gertrude. "War Time Problems in the Calculating Machine
      Classes," Eastern Commercial Teachers Association Yearbook, 1943,
      pages 341-8.   CALC-STSM

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

166. Ruegg, Robert J. "Starting from Scratch in Office Practice?" Business   CRS-SEC
      Education World, Vol. 37, February, 1957, pages 32-3.

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

167. Ryan, D. J., Jr. "Central Tabulating in Detroit Department of Public   GVT-TFD
      Welfare," American City, Vol. 57, March, 1942, pages 52-3.

      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.

168. Schlauch, W. S. "The Use of Calculating Machines in Teaching Arithmetic,"   CALC-STSM
      reprint by Monroe Calculating Machine Co. of an article in The
      Mathematics Teacher, January, 1940, pages 35-8.

      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.

169. Schuette, Amanda. "A Follow-up Study of the Graduates of 1947 in Green   SRV-STSM
      Bay, Wisconsin, Public High Schools," The National Business
      Education Quarterly, Vol. 18, Fall, 1949, pages 26-30.

      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.

170. "Setting Work Standards," Administrative Management, Vol. 24, September,   MST-JOB
      1963, pages 65-7.

      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.

171. Sevenich, Antonia M. "A Survey of the Office Machines Used in the Port   SRV-JOB
      Washington, Wisconsin, Area," Master's Thesis, The University
      of Wisconsin (Madison), 1956, 46 pages; National Business Education
      Quarterly, Vol. 27, October, 1958, page 66.

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.

172. Showalter, Lehn H. "Some Problems in Teaching Machine Posting," _Journal_   NST-SEC
     of Business Education, Vol. 15, No. 5, January, 1940, page 20.

    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.

173. Sister Mary Marcia, RSM. "Selling the Machines Course," _Balance Sheet_,   TRG-SEC
     Vol. 35, May, 1953, pages 388-9, 399.

    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.

174. Smith, Lois. "Grading in Office Machines Classes," _Balance Sheet_, Vol.   MST-SEC
     44, February, 1963, pages 253-4.

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

175. Specht, Joseph F. "Modern Business Calls for Modern Machines," _Journal of_   EQT-JOB
     Business Education, Vol. 33, March, 1958, pages 248-52.

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

176. Specht, Joseph F. "Training on Office Machines Helps Accounting Students," TRG-SEC
     Business Education World, Vol. 37, April, 1957, pages 19-20.

    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.

177. Spindler, Charles R. "Business Machines for School Laboratories,"   SRV-EQT
     Education, Vol. 18, No. 7, March, 1943, pages 15-6.

    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.

178. Spindler, Charles R. "Criteria for Selecting Business Machines for School EQT-STSM
     Laboratories," Unpublished Master's Thesis, University of Iowa, 1942.

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.

179. Stander, Norman E. "Basic Elements in Reliability Training," Personnel,   MGT-TRG
      January, February, 1964, pages 70-4.

      One way to eliminate the chance of human error of a systems' 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.

180. Stein, Lawrence W. "The Case for Office-Machines Courses," Business   EQT-SEC
      Education World, Vol. 36, February, 1956, pages 16-7.

      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.

181. Strauch, Juliabel. "A Survey of the Office Duties and of Employers'   SRV-STSM
      Evaluations of Office Employees in Thirty-two Business Offices in the Pekin, Illinois, Employment Area," Review of Business Education, Vol. 46, August, 1949, pages 26-31.

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

182. Stuart, Mary. "Modernizing the Objectives, Content, and Organization of   CRS-SEC
      Clerical and Machines Courses," National Business Education Quarterly, Vol. 10, March, 1942, pages 43-5.

      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.

183. Stutsman, Galen. "Is Adding-Calculating Machine Training Necessary?"   CALC-ANAL
      Journal of Business Education, Vol. 29, January, 1954, pages 165-6; February, 1954, pages 210-2; March, 1954, pages 244-6.

      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."

184. Stutsman, Galen. "Levels and Comptencies in Office Machines," American   STD-SEC
      Business Education Yearbook, Vol. 13, 1956, pages 81-90.

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).

185. Sutton, Mary Etta. "A Survey of Office Machines in Use and Available Job   SRV-JOB
Opportunities for High School Graduates in the Manufacturing
Industry in Muncie, Indiana," Master's Thesis, Ball State Teachers
College, Muncie, Indiana, 1953; NBEQ, Vol. 23, October, 1954, page 87.

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.

186. Swanson, Edwin A. "Changes in the Content of Business Courses of Study for PHL-TRD
Office Workers to Suit Present and Future Needs," NBEQ, Vol. 9,
March, 1941, pages 25-32.

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.

187. "Teamwork with Business Is Trend of Education," School and Society, Vol.   CWB-BSch
66, August 16, 1947, pages 119-22.

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.

188. "Tell It to the Machines," American City, Vol. 52, October, 1937, page 7.   EQT-TRD

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.

189. "That Hard-Working Family of Tabulating Machines," American City, Vol. 64,   HST-EQT
February, 1949, pages 189-91.

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

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

190. Thatch, Wayland B. "Offer Valuable Office Machines Training," Balance   SEC-EQT
     Sheet, Vol. 39, April, 1958, pages 348-51.

     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.

191. "The Office Worker and His Education," School Life, Vol. 44, April, 1962,   TRG-JOB
     page 24.

     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.

192. "The Selection of Equipment for Office Practice Laboratories," The Balance   EQT-STSM
     Sheet, Vol. 28, March, 1947, pages 302-5.

     Besides outlining the equipment that should be in the office practice
     laboratory, the author sets forth a protest against demanding pre-
     requisites 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.

193. Thomas, Ralf Jay. "A Survey of Business Education in the Public Secondary   SRV-SEC
     Schools and the Public Junior Colleges in the State of Kansas,"
     Dissertation Abstracts, Vol. 14, Publication No. 7142, 1954, page 278.

     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."

194. Thrasher, W. T. "Punched Tape Boosts Accounting Efficiency," American   EDP-GVT
     City, Vol. 73, June, 1958, pages 160-1.

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

195. "Tomorrow's Office: It Runs Itself," Business Week, October 20,1956,   EDP-FTR
     page 25.

     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.

196. Tonne, Herbert A. "Machine Training in the Schools," Journal of Business   TRG-SEC
     Education, Vol. 30, November, 1954, pages 61, 70.

     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.

197. "Training for Office Occupations," Journal of Business Education, Vol. 23,   TRG-SEC
     October, 1947, pages 35-6.

     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.

198. "Training Ground for Technicians," Business Week, November 7, 1959,   TRG-CSM
     pages 76-7.

     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.

199. Trytten, John Melvin. "A Study of the Relation Between the Equipment of   EQT-NST
     Commercial Teachers and the Demands of Their Teaching Situations,"
     Dissertation Abstracts, Vol. 12, Publication No. 3818, 1952.

     "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 ts the learning that they received, justifying the criticism
     that   ey are preparing the students for the business world of
     yeste lay." Recommendation is given that the teacher should adjust
     to situations that are unexpected.

200. UBEA Forum, 1957, 62 pages.   HST

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

201. U. S. Labor Statistics, Bulletin No. 1255, Occupational Outlook Handbook,   JOB-FTR
      1959, pages 224-38.

      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.

202. VanDerver, Elizabeth A. Tilton. "A Study of Patterns of Performance for   ANAL-JOB
      the Most Frequent Duties of Beginning Clerical Employees,"
      Dissertation Abstracts, Vol. 11, Publication No. 2516, 1951.

      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.

203. Vinocour, S. M. "The Trend Toward the Trained," National Business Woman,   PHL-JOB
      Vol. 36, January, 1957, pages 16-7.

      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.

204. "Visual Aids--Motion Pictures in Office Practice," Education for Victory,   TRG
      Vol. 2, No. 10, November 15, 1943, page 8.

      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.

205. Vorachek, Georgette. "A Survey of Office Machines in the Selected North   SRV-SEC
      Dakota High Schools," M. A. Thesis, University of North Dakota,
      (Grand Forks), 1960, 89 pages.

      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.

206. Walker, Robert Douglas. "The Cost of Equipping High School and Junior   EQT-SEC
Colleges Business Education Classrooms," Dissertation Abstracts,
Vol. 20, Library Card Mic 59-6403, 1959, page 3170.

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.

207. Wallach, Jack. "Miss Pushbutton, Take a Letter," Nation's Business, Vol.   TRG-EDP
35, February, 1947, pages 60-2.

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

208. Waterman, Letha H. "A Survey of Key-Driven Calculators in Columbus, Ohio,   CRS-STSM
With a Suggested Syllabus for a Course of Study," Unpublished
Master's Thesis, The Ohio State University, 1941.

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.

209. Weeks, Edwin, Jr. "A Study of the Expressed Employment Needs of Employers   ANAL-JOB
in the Syracuse Metropolitan Area with Implications for the Office
Occupations Program in the Syracuse Public Schools," Dissertation
Abstracts, Vol. 22, 1962, page 3898.

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.

210. Wein, Dorothy. "Initial Employment of the High School Graduate of a   JOB-SEC
Commercial Course," High Points, Vol. 22, October, 1940, pages 22-7.

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.

211. "What I Would Do About Ditto If I Were Miss Davis," _Business Education_   JOB-CSM
     World, Vol. 29, April, 1949, pages 492-4.

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

212. "What Should the Office Do?" _Dun's Review_, Part II, Special Report on the   ANAL-JOB
     Office, September, 1962, pages 896-9.

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

213. "What's New for Cities in Business Machines," _American City_, Vol. 53,   GVT-TRD
     November, 1938, page 79.

     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.

214. "White Collar Jobs Blossom Again," _Business Week_, April 25, 1959, page 32.   JOB-TRD

     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.

215. "Why the Rush?" _Dun's Review_, Annual Office Report: "The Decision That   TRD-EQT
     Can't Wait," September, 1961, pages 4-5.

     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.

216. Wilsing, Weston Clarence. "An Appraisal of Business Education in the   CSM-SEC
     Urban and Rural Public High Schools in the State of Washington,"
     Dissertation Abstracts, Vol. 20, Library of Congress Card No.
     Mic 59-3352, 1959, page 971.

     "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; weaknessess of graduates were
     in attitudes, character traits, and fundamentals."

217.   Wuthenow, Edith Veronica.   "In-Service Training Programs for Clerical   TRG-JOB
            Workers: An Analysis of the Formal Training Programs Conducted by
            Selected Business Firms for Their General Clerical Workers,"
            Dissertation Abstracts, Vol. 14, Publication No. 7144, 1954,
            pages 621-2.

            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.

218.   Yanney, R. H.   "Office Machines and Office Careers," Journal of Business   TRG-STSM
            Education, Vol. 23, June, 1948, page 31.

            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.