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ABSTRACT

The guide emphasizes methods of planning rather than making special recommendations. Business education facilities of primary concern are junior and senior high schools or four year schools. The need for the cooperation of state planning agencies with local officials is mentioned. Noise factors, related activities and space allocations are among the many requirements of the educational specifications. Facility lists are included as well as space adequacy surveys and special considerations for junior college facilities. (RH)

ERIC

ED035165

# PLANNING AND EQUIPPING BUSINESS EDUCATION CLASSROOMS

*Prepared by*

THE BUREAU OF BUSINESS EDUCATION
California State Department of Education

EF 000 470

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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## *FOREWORD*

The rate at which new school buildings must be made available depends upon (1) the growth of school population; and (2) the number of buildings in use that must be replaced because of obsolescence. The type of new buildings needed depends upon the educational program that is required to meet the needs of our society. In planning new school facilities, including those for business education, every known step should be taken to secure the facilities required to meet the needs that exist and the flexibility essential to meeting the needs that will likely arise during the years the facilities will be used.

The material in this publication was developed by the Bureau of Business Education with the assistance of school administrators, curriculum directors, business educators, personnel of the Bureau of School Planning of the California State Department of Education, and architects. The suggestions and guidelines presented should be most helpful in planning business education facilities that will be appropriate for the programs to be offered, adequate for enrollments to be served, and sufficiently flexible that required adjustments can be readily made as program changes are required.

Ray E Simpson

*Superintendent of Public Instruction*

## *PREFACE*

*Planning and Equipping Business Education Classrooms* is designed to assist school districts and architects in planning business education facilities to meet the present and future needs in this important area of education.

Charles D. Gibson, Chief, Bureau of School Planning, California State Department of Education, assisted in making this publication one that opens new avenues for the type of educational planning that provides a sound basis for all other essential planning of educational facilities. Conferences with school personnel and architects were held throughout the state for the purpose of gathering material to be included in this publication. The pictures used to show desirable business education facilities were supplied by various school districts. Nathan H. Boortz, Director of Technical and Vocational Education, Foothill College, and Wayne L. Sorenson, Administrative Assistant in Charge of Curriculum, Hayward Union High School District, reviewed the material and suggested desired changes.

The staff of the Bureau of Business Education planned and prepared this publication. M. Claire O'Brien, Consultant in Business Education, Bureau of Business Education, had major responsibility for assembling and organizing the material.

RICHARD M. CLOWES
*Associate Superintendent of Public Instruction; and Chief Division of Instruction*

R. C. VAN WAGENEN
*Chief, Bureau of Business Education*

## *ACKNOWLEDGMENTS*

The Bureau of Business Education takes this opportunity to acknowledge the work done by the following individuals and the staffs of school districts and architectural firms in planning and developing this publication.

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Pacifica High School, Mt. Diablo Unified School District, Contra Costa County
San Juan Union High School District, Sacramento County
Whittier Union High School District
Merced Union High School District
Los Angeles City School Districts
Hayward Union High School District

Reedley Junior College, Reedley Joint Union High School District
El Camino Junior College, El Camino College
Shasta Junior College, Shasta Union High School District, Redding
American River Junior College, Sacramento County
Orange Coast Junior College
San Francisco City College
San Mateo Junior College
Foothill Junior College, Mountain View
Santa Monica City College
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## CONTENTS


| | Page |
|---|---|
| FOREWORD | iii |
| PREFACE | iv |
| ACKNOWLEDGMENTS | v |
| Introduction | 1 |
| Basic Considerations in Planning Business Education Facilities | 3 |
| General Planning Procedure | 6 |
| Special Considerations in Planning Business Education Facilities | 11 |
| Educational Specifications | 13 |
| Educational Specifications for Business Education | 15 |
| Business Education Facilities | 19 |
| Planning Junior College Business Education Classrooms | 23 |
| Business Education Facilities in the Junior College | 29 |
| Selected Bibliography | 33 |

## *INTRODUCTION*

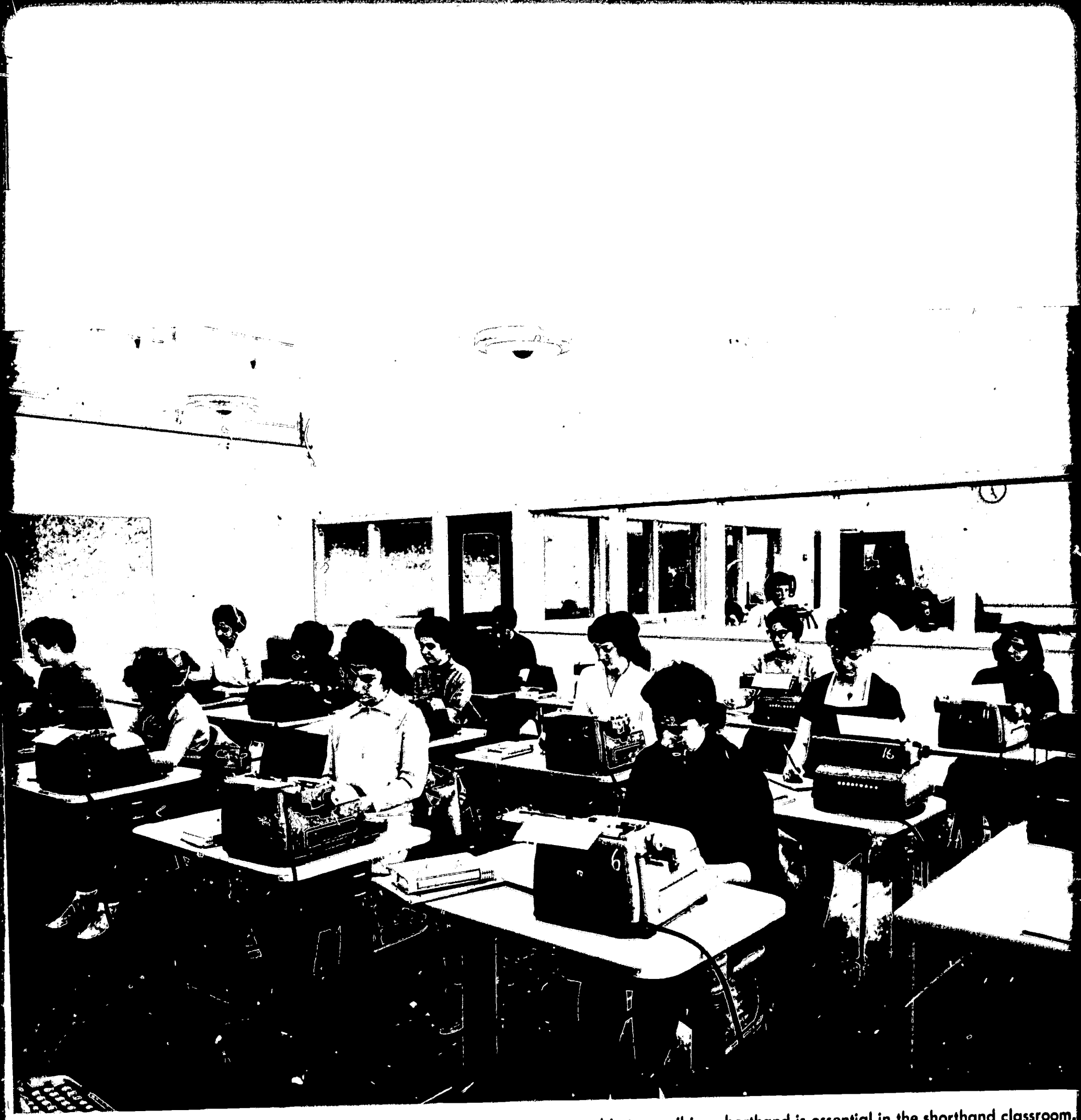
Each school district should make decisions regarding the business education facilities to be provided on the basis of studies made relative to the needs of the students and of the community. These studies will have significance if they are made by the people who will be utilizing the facilities planned.

This publication is designed to provide a guide for school personnel and architects to work together in developing plans for business education facilities.

Therefore, the emphasis in this guide is on methods of planning rather than on specific recommendations. The reason for this approach is the importance of local planning in meeting the needs of the students in the schools of the district.

This guide is designed primarily for use in planning business education facilities for junior high schools, and four-year and senior high schools. However, since the facilities needed for business education depend more upon the program offered than upon the educational level or the age-group for which they are provided, the guide may be used to advantage in planning facilities for junior colleges and for adult education purposes.

M. Claire O'Brien
*Consultant in Business Education*
*Bureau of Business Education*



Desk space sufficient for taking dictation and for typewriters used in transcribing shorthand is essential in the shorthand classroom.

# BASIC CONSIDERATIONS IN PLANNING BUSINESS EDUCATION FACILITIES

In planning facilities for any phase of the total program of education offered by California public schools, full consideration must be given to the philosophy upon which the program is built, the objectives that are sought, and the procedures that are employed.

The function of public education is to provide for each individual the educational opportunity he needs to become a good citizen—one who is capable of utilizing his full ability in constructive ways, both for his own welfare and for the welfare of others. In carrying out this function, the public schools must offer a program that provides for all pupils the opportunities they need (1) to develop the degree of proficiency in using the basic skills of learning that their abilities permit; (2) to acquire an understanding of the basic principles of America's democracy; and (3) to acquire the knowledge, attitudes, and social skills that are essential to full and wholesome living. The program offered must, however, also provide sufficient diversification so that each individual has opportunity to acquire the special skills and knowledge he needs to pursue the goal he has set for himself. If the attainment of his goal depends in part upon college training, the schools must provide for him the academic foundation required for college entrance; if it requires vocational skills, the school must provide at least some of the training required. Briefly stated, the function of education is to meet the needs of society as a whole and of each member of society.

Business education is taught in California public schools as an integral phase of the total program of education offered at the junior high school, high school, and junior college levels. At each of these levels emphasis is placed upon the general values of business education; that is, business education is taught in some measure as a phase of general education. But in addition to being taught for this purpose, business education is taught as preparation for employment in business, and as preparation for conducting one's personal affairs. In that phase of the business education program that is designed as preparation for employment in business, the emphasis on essential skills and business practices is increased progressively throughout the grades at each education level. The business education program, however, is planned at each educational level so that every pupil who wishes to take a course that will in some way meet his personal needs may do so.

The objectives for the business education program must provide for (1) furthering the general education of all who participate in it; (2) developing the skills and acquiring the knowledge and understandings essential to employment in business; and (3) developing the skills and acquiring the knowledge and understandings desired for personal reasons. The objectives may be stated as follows:

- To provide opportunity for all students to extend and enrich their backgrounds of general education, especially those phases that pertain to national and world economy and current business practices
- To provide for students who wish to accept employment in business after they have graduated from high school the opportunity they need to acquire the skills, information, and understanding essential to such employment
- To provide for students who wish to become increasingly proficient in conducting their personal affairs the opportunity they need to acquire the skills, information, and understanding needed
- To provide for students who wish to pursue a college course in business the opportunity they need to acquire the skills, information, and understanding that will help them profit most fully from their college training

All of these objectives may be furthered in some measure at each educational level; however, the emphasis given at each level is determined in relation to the students' ability to profit from it. The material that follows is concerned with (1) the business education program as it is generally offered at each of the various

Since reproduction work frequently involves the use of the mimeoscope, provision should be made for students to have instruction and practice in the required work.

education levels; (2) identifies the program emphasis at each level; and (3) makes apparent the shift and intensification of emphasis as the program progresses from the junior high school level through the junior college level.

The program of business education offered in the junior high school is generally limited to typewriting and general business but in a few instances such courses as economic geography and consumer education are included in the program. The course in general business is taught primarily for its contribution to the general education of students. The course, however, also offers students opportunity to explore their interests in business and in so doing serves an important guidance function in the total school program. The course in typewriting serves a twofold purpose. It provides all students opportunity to acquire a skill that has considerable value for personal use, both in school and in the years following graduation. And in addition to this value, typewriting offers students opportunity to determine the extent of their ability in acquiring one skill that is often essential to employment in the office phase of business operations, and to explore their interests in office work, and in this way serves an important guidance function in the total school program. Each of the courses, general business and typewriting, provides students opportunity to begin laying the foundation for successful participation in the business education program offered in the high school.

The program of business education offered in four-year and senior high schools includes courses in general business and typewriting; each of these courses is taught for the same purposes they are taught in the junior high school. However, the course in typewriting is extended to include a second year of work for students who wish to attain the degree of proficiency in typewriting that is required for business employment.

In addition to typewriting and general business, the business education program includes the other courses that are required to give students the opportunities they need to be prepared for at-

taining the goals they have set for themselves. Generally, business education programs offered by high schools include courses in general business, typewriting, shorthand, bookkeeping, recordkeeping, clerical practice, secretarial practice, business machines, merchandising, business English, business mathematics, business law, economics, and salesmanship. And in all instances the courses are taught so that they make full contributions to the general education of the students who complete them. However, in most instances the program for students preparing for employment following high school graduation is designed to prepare them for job openings most likely to prevail in the community.

The business education programs offered by junior colleges are planned to contribute to the general education of all students. However, they are generally planned with emphasis on preparation for business employment and for advanced study. The scope of the program is determined both in relation to college requirements for degrees in business education and to the vocational goals of students who will terminate their professional educations with the completion of junior college. The programs, however, contain provision for students who wish to study certain subjects for personal reasons to do so, and, as necessary, opportunities to practice using skills to acquire the desired speed and proficiency.

Students are taught individually or in small groups to operate the various types of business machines.

# GENERAL PLANNING PROCEDURE

The legal responsibility of the California State Department of Education relative to the planning and construction of school facilities for school districts falling under its jurisdiction is outlined in detail in the Education Code, Division 11, Chapter 2. The Division of Administration, Bureau of School Planning, is the official agency designated to carry out the powers and duties set forth in this Code chapter.

The Bureau of School Planning basically is a planning agency, although it also is designated as the sole school plan approval agency in the Department of Education.

The processes of good school planning require the co-operation and competency of many agencies and people. The proper timing of the involvement of competent resources determines to a large degree the adequacy of the solutions to planning problems.

Field representatives of the Bureau of School Planning, as responsible Department of Education agents for the approval of school building plans, are most anxious to involve all other Department of Education personnel who have competency to contribute to participate in the planning of the California school facilities over which they have jurisdiction. By working with responsible school district officials, school architects and engineers, the district staff concerned with specific phases of school design, governing boards and others, planning conferences arranged by Bureau of School Planning personnel can develop facilities which not only represent the best thinking for balanced and adequate educational housing, but also will result in the school district receiving the most value possible for the building dollars expended.

There is no set planning pattern which can be applied in all situations. Each situation presents a different number and arrangement of factors important to consider and organize into a "custom" pattern tailored to fit a specific situation. Field representatives of the Bureau of School Planning, working with school district personnel, review the pertinent factors and develop a sequence of planning steps to follow to a logical conclusion in each instance. Since it is possible to achieve adequate and balanced educational housing only through planning competence and compromise, all special interests may not receive the consideration they believe ideal.

One of the important planning steps necessary to achieving balanced educational housing for secondary schools and junior colleges is the completion of a Space Adequacy Survey. This survey procedure was developed by the Bureau of School Planning to eliminate much of the guess work common in the planning of school building facilities. Basically, it is a means whereby any given educational program can be translated into teacher station needs for any estimated student enrollment. It uses one-student-in-one-student station-one-hour as the irreducible unit for determining building space needs.

The Space Adequacy Survey takes current and future local needs into consideration. Projections of class enrollments are based upon the predicted total enrollment of the school. Decisions on space adjustments are made by conferences between administration and staff and should include provisions for the projected changes in the curriculum.

On the junior high school and senior high school levels, there are four forms (A, B, C, and D) to be filled out in a space adequacy survey. Form A shows the department, teacher, name of course, and pupil-period enrollment. The average class size shown on Form A is computed by dividing the number of pupils enrolled by the number of classes reported in each course. This information will be used to determine the total number of classes in each subject offered in the school at the present time.

Form B is a summary sheet of pupil-period enrollments by departments. The totals shown on Form B are taken from the data

contained in Form A. This information will be used to determine the total number of classes in all subjects offered in the school at the present time.

Form C provides information to determine the teaching space needs on the basis of the present curriculum, the predicted enrollment, and the plans for future expansion. This information will be used to determine the number of rooms needed for each subject for the predicted enrollment.

Form D contains a summary of the teaching space required by each department, a description of the teaching spaces, and the net square feet assigned for each department. This information will be used to allocate teaching space.

CALIFORNIA STATE DEPARTMENT OF EDUCATION
BUREAU OF SCHOOL PLANNING
FORM A—SPACE ADEQUACY SURVEY

Form A—Space Adequacy Survey
Secondary School

XYZ School District

XYZ School

Business Department

## PUPIL-PERIOD ENROLLMENT

(Use at least one line for each teacher. Separate sheet for each department)

October 19__ Date

Prepared by M.O.

| 1 | 2 | 3 | | | | | | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|---|---|
| Teacher (Name) | Course (Name) | Enrollments by period | | | | | | Pupil enrollment (Total Col. 3) | Number of classes reported each course | Average class size Col. 4 ÷ Col. 5 |
| | | First | Second | Third | Fourth | Fifth | Sixth | | | |
| Miss H. P. | Bookkeeping | 25 | 17 | 17 | 20 | 22 | -- | 101 | 5 | 20 |
| Mr. V. W. | Business Arithmetic | 18 | -- | -- | -- | -- | -- | 18 | 1 | 18 |
| | General Business | -- | -- | 32 | -- | 35 | -- | 67 | 2 | 33 |
| | Sales. and Law | -- | 17 | -- | 15 | -- | -- | 32 | 2 | 16 |
| Mrs. D. S. | Business Machines | 25 | 16 | -- | -- | 17 | 22 | 80 | 4 | 20 |
| | Typing | -- | -- | 36 | -- | -- | -- | 36 | 1 | 35 |
| Mr. G. C. | Office Practice | 17 | -- | 18 | 21 | 14 | -- | 70 | 4 | 18 |
| | Shorthand | -- | 9 | -- | -- | -- | -- | 9 | 1 | 9 |
| Mr. L. B. | Typing | 35 | 36 | -- | 40 | 35 | 22 | 168 | 5 | 34 |
| Mr. D. C. | Shorthand | -- | -- | -- | 23 | -- | -- | 23 | 1 | 23 |
| | Transcription | -- | -- | -- | -- | 33 | -- | 33 | 1 | 33 |
| | Typing | 37 | 35 | -- | -- | -- | 32 | 104 | 3 | 35 |
| Mr. L. A. | Typing | -- | 36 | 37 | 34 | -- | 32 | 139 | 4 | 30 |
| Total period enrollments [1] | | 157 | 166 | 140 | 153 | 156 | 108 | 880 | 34 | 26 |

[1] These totals should be transferred to Form B.

CALIFORNIA STATE DEPARTMENT OF EDUCATION
BUREAU OF SCHOOL PLANNING
FORM B—SPACE ADEQUACY SURVEY

Form B—Spoce Adequacy Survey
Secondary School

XYZ School District

XYZ School

Business Department

October 19__ Date

Prepared by M.O.

## SUMMARY BY DEPARTMENTS

Total period enrollments (Col. 4, Form A) for all departments 6828

| 1 | 2 | | | | | | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|---|---|
| School subjects | Enrollments by periods (From Form A) | | | | | | Total pupil enrollments Col. 4, Form A | Per cent Col. 3 is of total enrollments | Number of classes reported Col. 5, Form A | Average class size Col. 3 + Col. 5 |
| | First | Second | Third | Fourth | Fifth | Sixth | | | | |
| English | | | | | | | | | | |
| Languages | | | | | | | | | | |
| Mathematics | | | | | | | | | | |
| Business Education Totals | 157 | 166 | 140 | 153 | 156 | 108 | 880 | 12.88 | 34 | 26 |
| Bookkeeping | 25 | 17 | 17 | 20 | 22 | -- | 101 | 1.47 | 5 | 20 |
| Business Arithmetic | 18 | -- | -- | -- | -- | -- | 18 | .26 | 1 | 18 |
| Business Machines | 25 | 16 | -- | -- | 17 | 22 | 80 | 1.17 | 4 | 20 |
| General Business | -- | -- | 32 | -- | 35 | 22 | 67 | .98 | 2 | 34 |
| Office Practice | 17 | -- | 18 | 21 | 14 | -- | 70 | 1.02 | 4 | 18 |
| Sales. and Law | -- | 17 | -- | 15 | -- | -- | 32 | .46 | 2 | 16 |
| Shorthand | -- | 9 | -- | 23 | -- | -- | 32 | .46 | 2 | 16 |
| Transcription | -- | -- | -- | -- | 33 | -- | 33 | .48 | 1 | 33 |
| Typing | 72 | 107 | 73 | 74 | 35 | 86 | 447 | 6.54 | 13 | 34 |

CALIFORNIA STATE DEPARTMENT OF EDUCATION
BUREAU OF SCHOOL PLANNING
FORM C—SPACE ADEQUACY SURVEY

Form C—Space Adequacy Survey
Secondary School

XYZ School District

XYZ School

Business Department

October 19 Date

Prepared by M. O.

6 [1]

1. Predicted enrollment 2000 date 1965
2. Present enrollment 1650
3. Predicted increase 350
4. Working factor (Line 1 ÷ Line 2) 1.21

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|
| School subjects | Current pupil-period enrollments (Col. 3, Form B) | Average class size (district policy) | Class groups required (Col. 2 ÷ Col. 3) | Class groups required for predicted enrollment (Col. 4 × factor) | Teaching space needs computed for predicted enrollment (Col. 5 ÷ 6 [1]) | Teaching space needs adjusted by conference | Number of adequate teaching spaces now available | Number of additional teaching spaces recommended |
| English | | | | | | | | |
| Languages | | | | | | | | |
| Business Education | | | | | | | | |
| Totals | 880 | 28 | 32 | 39 | 6.5 | 7 | -- | 7 |

[1] Number of teaching periods in daily schedule.

CALIFORNIA STATE DEPARTMENT OF EDUCATION
BUREAU OF SCHOOL PLANNING
FORM D—SPACE ADEQUACY SURVEY

Form D—Space Adequacy Survey
Secondary School

XYZ School District

XYZ School

Business Department

October 19__ Date

Prepared by M.O.

## BUILDING AREA ASSIGNMENT SUPPLEMENTING SPACE ADEQUACY SURVEY

| Department | Teaching spaces (Form C, Col. 7) | Description of teaching spaces | Net sq. ft. assigned |
|---|---|---|---|
| Business Education | 7 | 1 - General Classroom and Merchandising Classroom | 1278 |
| | | 3 - Typewriting (3 @ 1080 sq. ft.) | 3240 |
| | | 1 - Business Machines Laboratory | 1560 |
| | | 1 - Office Practice | 1200 |
| | | 1 - Bookkeeping | 1080 |
| | | Total | 8358 |

# SPECIAL CONSIDERATIONS IN PLANNING BUSINESS EDUCATION FACILITIES

Business education facilities should be designed to facilitate the planned program of instruction, but in designing them full attention should be given to a design that permits essential changes in the program—subject changes, classroom practices, and instructional procedures. It should then be possible to change room arrangements to accommodate increased enrollments and to introduce program changes at minimum cost and inconvenience.

The business education unit should be located where the noise caused by office machine operations will not disturb classes in other rooms; activities other than those of regular classes conducted in them can be easily supervised; and they can be used to advantage for school activities such as editing the school newspaper and annual. If adult evening classes are to be taught, the unit should be located so that it is readily accessible from the parking areas.

The total number of rooms required for business education and the number of rooms required for each subject will be determined by the space adequacy survey. The size and arrangement of the rooms will be determined on the basis of the types of instruction to be offered and the equipment required for instructional purposes and practice.

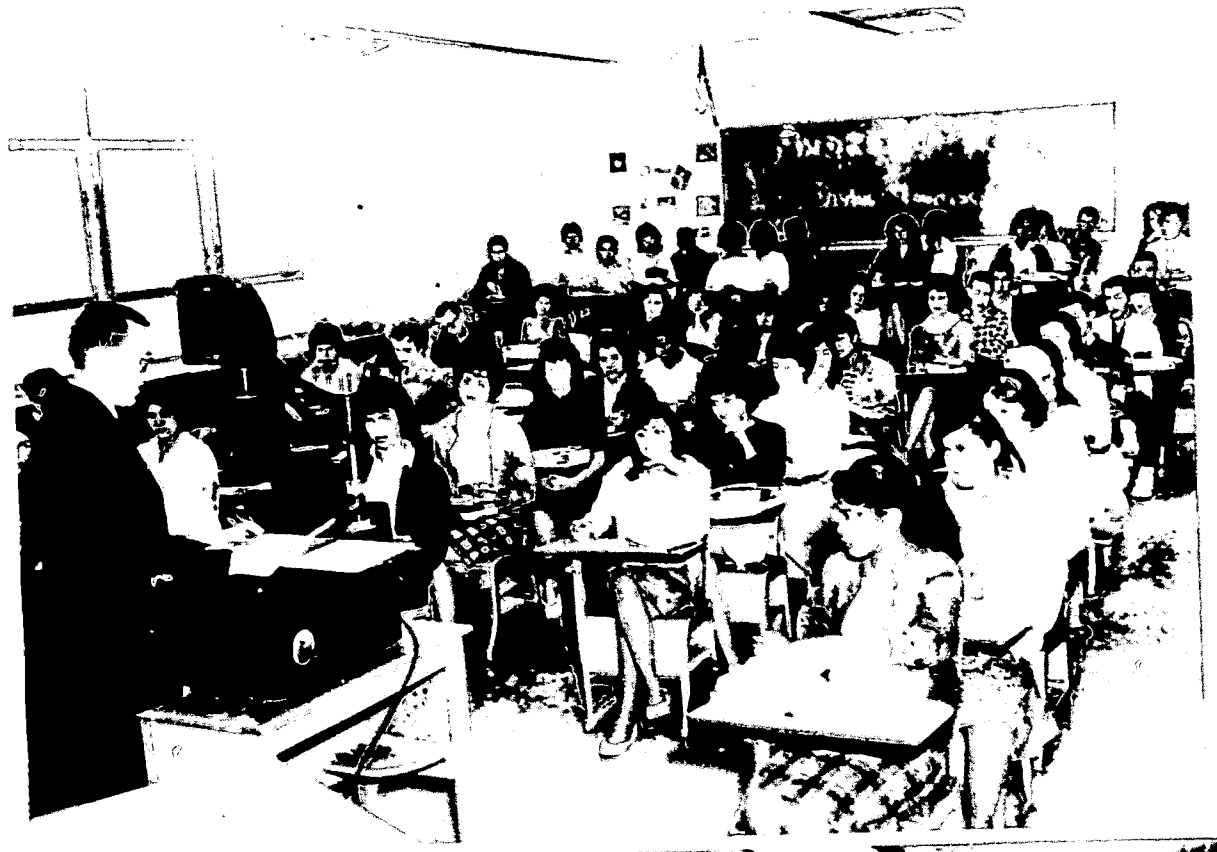
Classroom space allocations should provide for the following:

Individual student tables at least 24 inches wide by 36 inches long. Space between student stations approximately 30 inches in width.

An area approximately 9 feet in depth and 12 feet in width for the teacher's desk, seating, and essential clearance. In some instances a demonstration stand equipped with an electrical outlet may be located in this area.

Since secretarial duties frequently involve the use of voice dictation machines, the business education facilities should provide opportunity for students to have experience with the various types of machines used in business.

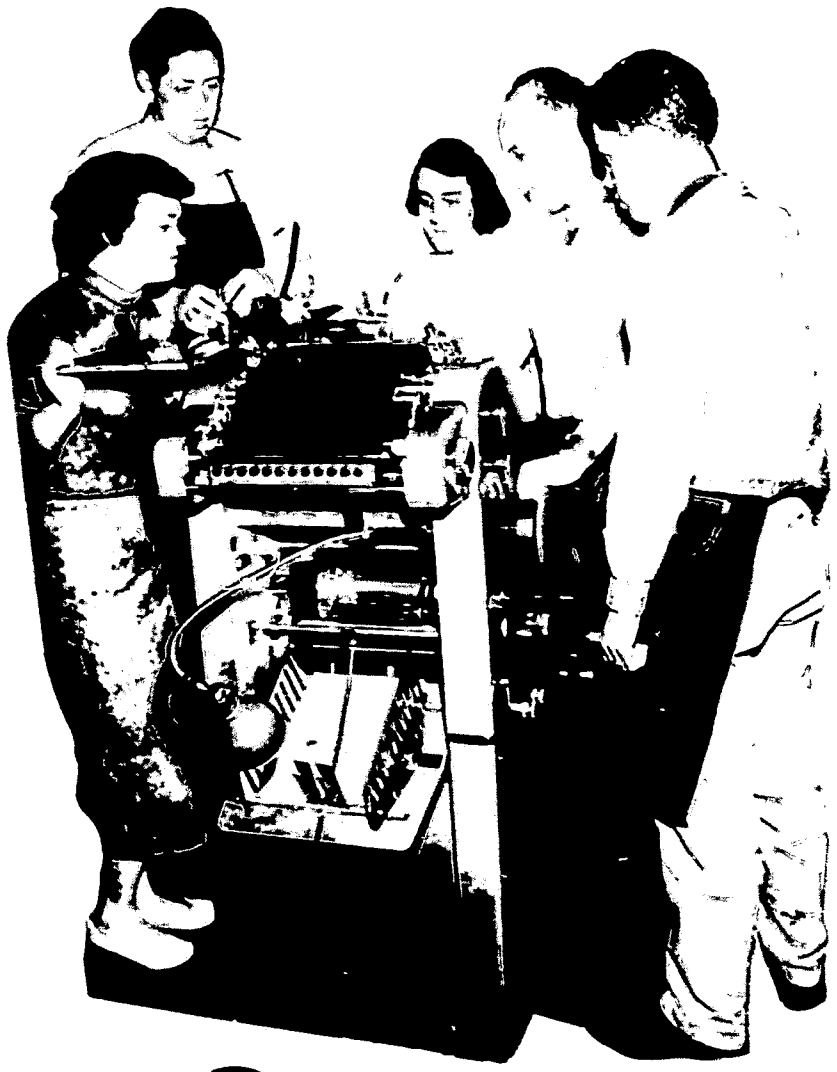
Business education courses may be taught by a team of teachers. By using this method of instruction two or more teachers plan the instructional program of the course. Each teacher assumes responsibility for presenting certain different phases of the large group instruction, and all share responsibility for small group instruction and supervising individual study.



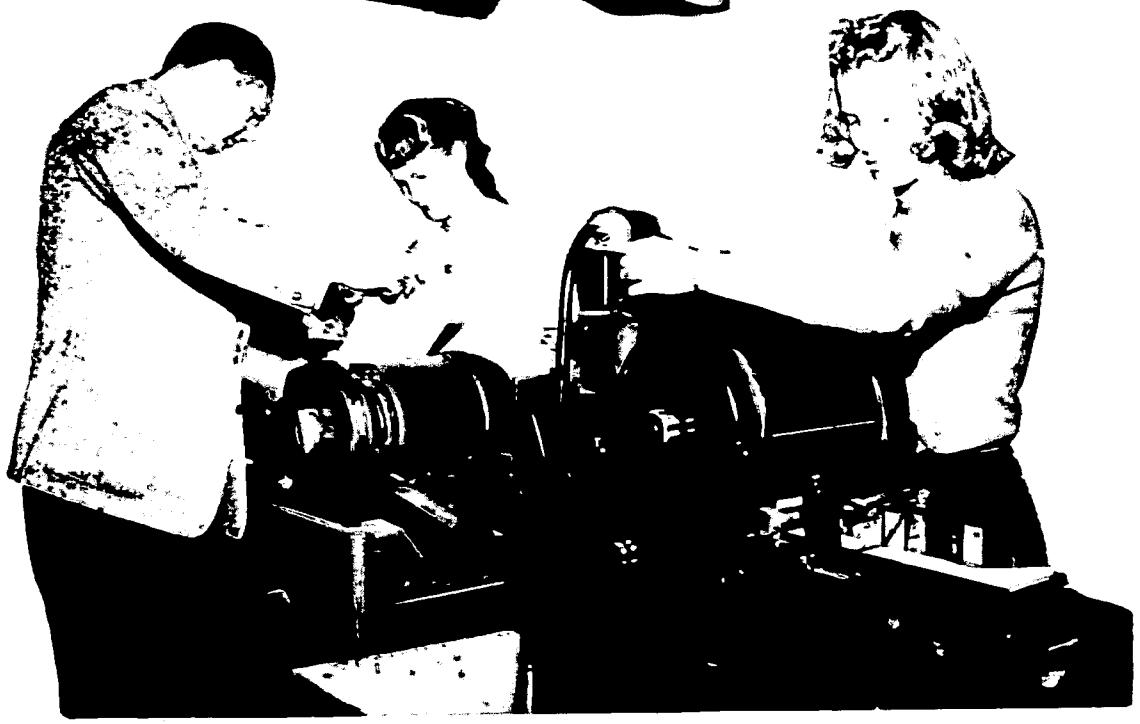
# EDUCATIONAL SPECIFICATIONS

School facilities should be planned so that they provide for the successful operation of the program of education that is to be offered. It is therefore necessary for those responsible for the program to provide a complete and detailed description of it. This description should be introduced by a statement regarding the administrative procedures that will be carried on in the facilities and the special services that will be offered. The practices employed in providing services for which special facilities are required should be described in detail This introduction should be followed by descriptions of each phase of the total program of education. Each part of the program can then be studied separately and in relation to all its other parts. The information that may be assembled through this study should make apparent to those responsible for planning the required facilities the type of facilities that are needed for each phase, and ways in which shared use may be made of certain facilities, such as regular classrooms, mimeographing rooms, and the like. This is one means whereby the facilities may be planned so as to permit the flexibility in program planning that is required in keeping each phase of the program abreast of current developments.

Instruction and suggestions for good office practices should be displayed where they may be viewed by students over reasonably long periods of time. Bulletin boards for this purpose should be provided.



Provision should be made for students to learn how to use the various types of reproducing machines commonly used in business. There should be provision for practice in using such machines as the mimeograph, the fluid process duplicator, and the multilith.



# EDUCATIONAL SPECIFICATIONS FOR BUSINESS EDUCATION

The educational specifications for each phase of the education program should be introduced by a statement of the objectives that are emphasized. The objectives for Business Education may be stated as follows:

To provide opportunity for all students to extend and enrich their backgrounds of general education, especially those phases that pertain to national and world economy and current business practices

To provide for students who wish to accept employment in business after they have graduated from high school the opportunity they need to acquire the skills, information, and understanding essential to such employment

To provide for students who wish to become increasingly proficient in conducting their personal affairs the opportunity they need to acquire the skills, information, and understanding needed

To provide for students who wish to pursue a college course in business the opportunity they need to acquire the skills, information, and understanding that will help them to profit most fully from their college training

The objectives for each phase of the total program should be followed by a list of the subjects that are taught to make the objectives attainable. The following subjects are generally offered in a well-rounded Business Education program:

| | |
|---|---|
| Typewriting | Business Machines |
| Shorthand | Merchandising |
| Bookkeeping | Business Law |
| Recordkeeping | Economics |
| General Business | Salesmanship |
| Clerical Practice | Business English |
| Secretarial Practice | Business Mathematics |

The list of subjects offered in each phase of the program should be followed by a description of the equipment used and instructional procedures employed in teaching each subject. This description should be introduced by a statement of the objectives to be stressed. Then the instructional procedures should be outlined and the special equipment or provisions needed enumerated. For example the subject, *Business Machines* may be described as follows:

### OBJECTIVES

To provide opportunity for students (1) to become informed regarding the various uses made of business machines; (2) to become informed regarding the various types of business machines that may be used for different purposes; and (3) to acquire skill in operating business machines with the degree of proficiency needed in business employment.

### INSTRUCTIONAL PROCEDURES

1. Introductions to each phase of the subject and all information of general interest to the class is presented to the group as a whole.

2. Class instruction is followed by dividing the students into groups and assigning each group work with a particular type of machine. The groups are then alternated at intervals until the students in each group have had experience in operating each type of machine.

3. After the students in a group have had experience in operating a particular type of machine, provision is made for them to practice using the machine in other than the regular class period.

4. As students acquire the proficiency in operating the machine that is needed for doing certain types of work they are assigned certain jobs. For example, students may be assigned the task of reproducing copy for various teachers, school announcements, and certain material needed in the school office.

Certain of these tasks may be completed during the class period, others may be started during the class period and then completed at other times, and others may be started and completed outside the class period.

MACHINES USED

Manual typewriters
Electric typewriters
Ten-key adding machines
Full keyboard adding machine
Bookkeeping machines
Transcribing machines
Dictating machines
Printing calculators
Rotary calculators
Key-driven calculators
Key punch with stand
Mimeograph with stand
Fluid duplicator with stand
Mimeoscope with stand

Many of the machines used are electrically driven, and most of them are operated at the students' stations as well as in specified areas of the classroom. Electric outlets are required.

FURNITURE USED

Desks or tables and chairs for students
Filing cabinet
Demonstration stand
Desk and chair for teacher

MATERIALS STORED

Paper, tape, cards, ink, and other supplies used in operating the various types of machines, in sufficient amounts for a month
Students' uncompleted work
Materials required for maintaining machines in condition required for operation—rags, cleaning fluids, and the like

INFORMATION AND MATERIALS DISPLAYED

Instructions are frequently presented on the chalkboard. Sometimes, separate sets for the operation of the various machines are maintained for several days.

Drawers provide the best storage space for certain types of instructional materials.

Announcements of school activities and of activities and developments of special concern to business education students are displayed on a bulletin board.

AUDIO-VISUAL REQUIREMENTS

Provision should be made for the use of audio-visual equipment such as the tape recorders, phonographs, overhead projectors, movie and slide projectors, and television which could be used to advantage in classroom instruction.

## CLEAN-UP REQUIREMENTS FOR STUDENTS

Certain machine operations, especially those of duplicating machines, are such that facilities for washing hands are used frequently. Also in getting certain machines ready for use the work is such that the operator must wash his hands before the actual operation may be started.

## LIGHTING REQUIRED

Safety and efficiency in operating business machines require lighting conditions that permit good vision and that are conducive to eye comfort.

## SUPERVISION

Students are supervised while they are doing regular classroom assignments, practicing, and production work.

## PROVISIONS FOR STUDENT PRACTICE

Since students are required to practice machine operations outside their regular class periods, provisions may be needed for the students to practice at a time when the regular classroom is being used for classes. The extent of these provisions will depend upon the number of periods the classroom is used for classes. When these provisions are made, consideration should be given to locating the practice area where it can be supervised by the teacher with reasonable ease.

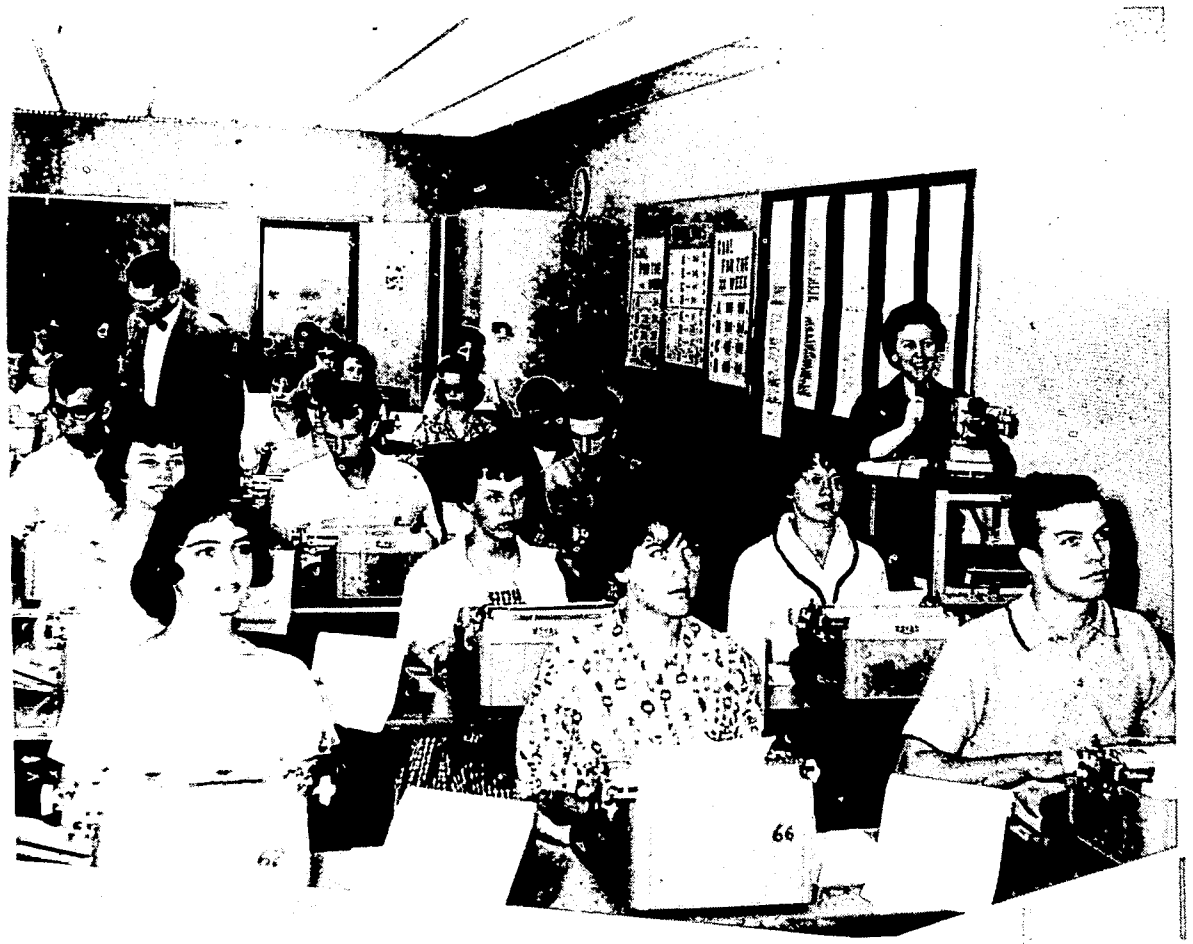
## PROVISIONS FOR PRODUCTION WORK

If material for the school office and teachers is to be processed in the facilities for Business Machines, the required equipment should be located where its use will not cause unnecessary disturbance of classes that are in session and where the students using the equipment can be supervised by the teacher with reasonable ease. Some consideration may be given to locating the processing room as near the school office as possible.

## PROVISIONS FOR COURSES TAUGHT IN REGULAR CLASSROOMS

Courses such as General Business, Business English, Business Mathematics, Business Law, and Economics are taught in regular classrooms. These classrooms should contain facilities for displaying materials pertinent to the courses. The rooms should be equipped for the use of audio-visual equipment. Chalkboard and bulletin board space should be provided so that material could be retained for the number of days required and still be adequate for other classes using the classroom.

Clean-up facilities are essential in rooms where machines are operated, and storage cabinets equipped with tote trays may be used to advantage for storing students' materials.



Typewriting may be taught to a large group by a team of teachers assisted by a clerk. One teacher may help individual students as the other teacher instructs the class, or both teachers may help students as instructions are given to the class by means of a tape recorder or a phonograph. The class may be divided into small groups for certain types of instruction.

# BUSINESS EDUCATION FACILITIES

The following material contains suggestions regarding certain features in each type of business education facility.

## BUSINESS MACHINES LABORATORY

The business machines laboratory may be used for a variety of purposes. In small high schools, where the laboratory may be the only room equipped with business machines and typewriters, it may be used for course offerings in office practice, business machines, typewriting, shorthand, and bookkeeping. It should have the following features:

Provision for the operation of electric machines
Essential facilities for keeping hands clean
Adequate working surfaces
Provision for multiple listening for shorthand dictation
Provision for the use of audio-visual equipment
Provision for students to practice the use of the machines in some area adjacent to the laboratory
Storage facilities for student work and for materials of instruction
Master switch for teacher control of electric circuits to machines
Bulletin boards and chalkboards for displays and classroom instruction

### FURNITURE

A list of the furniture needed follows:

Student stations equipped with working surfaces approximately 24″ x 36″ and adjustable in height; also suitable chairs
Teacher station with appropriate working surface and drawers; also a suitable chair, swivel type desirable
Demonstration stand with required outlets for operating electric machines
Suitable file cabinets

### EQUIPMENT

The number and kind of machines will vary according to the objectives of the course or courses taught in the room. Consideration should be given to the rental of equipment which is to be used only for a short time. A list of the type of machines needed follows:

Adding machine, 10-key
Bookkeeping machine
Dictating machines
Transcribing machines
Key-driven calculator
Rotary calculator
Printing calculator
Typewriters, electric
Typewriters, manual
Typewriter, long carriage
Key punch for preparing data for data processing machines
Mimeoscope with stylus set and lettering guides
Paper cutter
Duplicating machine, fluid process
Duplicating machine, stencil
Tape recorder
Collator
Stapling machine and staple remover
Interval timer
Stop watch
Paper punch
Filing sets

## TYPEWRITING CLASSROOM

The typewriting classroom may be used for classes in typewriting, shorthand, and transcription. It should have the following features:

Provision for operation of electric typewriters
Essential facilities for keeping hands clean
Adequate working surfaces
Bulletin boards and chalkboards for displays and classroom instruction
Provision for the use of audio-visual equipment

Provision for students to learn the various methods used in filing is an essential phase of the business education program. The business education facilities should contain the space required for the placement of the equipment for various types of filing.

Provision for students to practice the use of typewriters in some area in close proximity to the typewriter room if the classroom is to be used throughout the school day for classes. In making this provision some consideration should be given to the use that may be made of the extra facilities especially for individualized instruction and production work.

FURNITURE

A list of the furniture needed follows:

Student stations equipped with working surfaces approximately 24″ x 36″ and adjustable in height; also suitable chairs

Teacher station with appropriate working surface and drawers; also a suitable chair, swivel type desirable

Demonstration stand with required outlets for operating electric typewriters

EQUIPMENT

A list of the equipment needed follows:

Typewriters, manual and electric
Interval timer
Stop watch
Phonograph
Tape recorder
Paper cutter
Stapling machine and staple remover

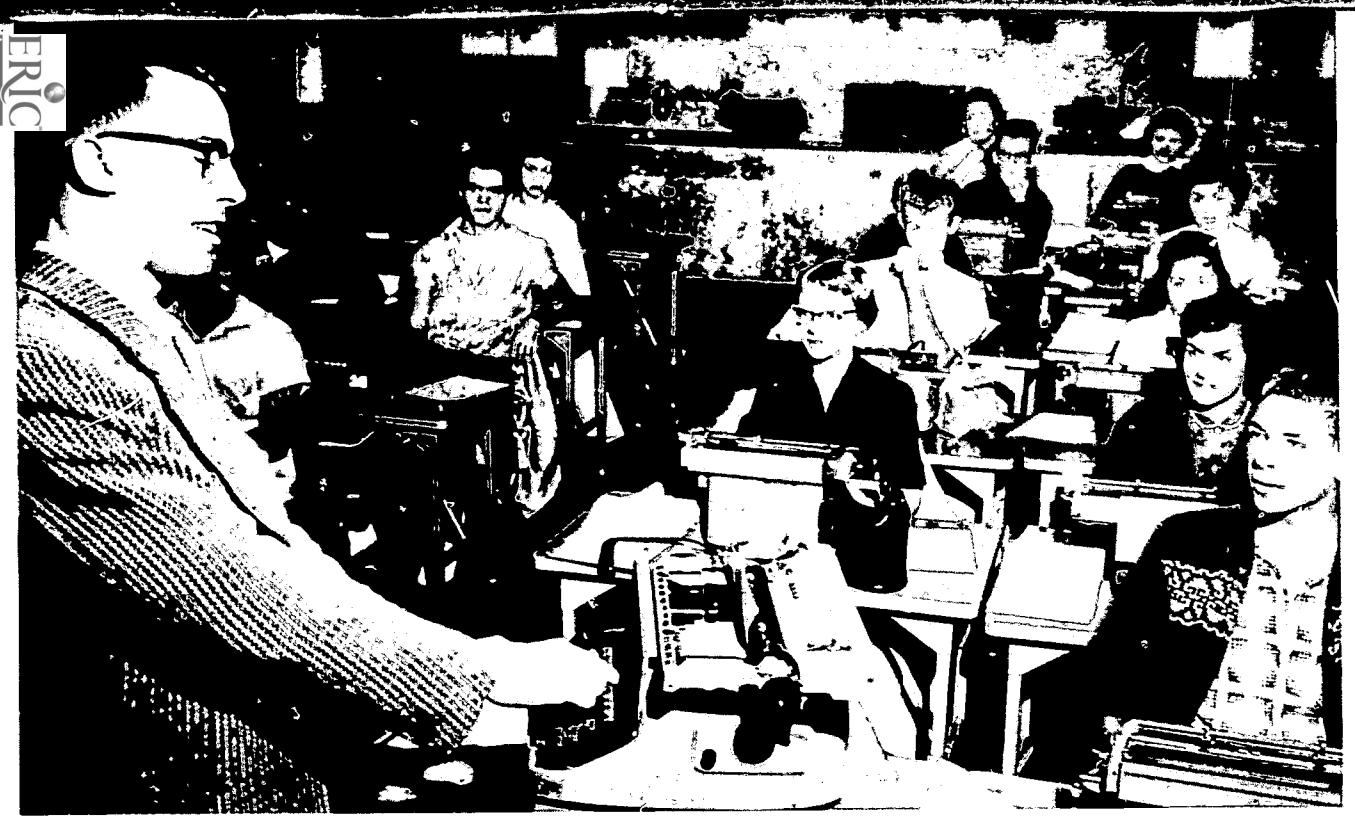
## GENERAL BUSINESS CLASSROOM AND MERCHANDISING LABORATORY

The classroom and merchandising laboratory may be used as a general classroom and as a merchandising laboratory. It should contain the following features:

The display area should be separated from the classroom by movable partitions

Bulletin boards and chalkboards for displays, classroom instruction

The display area should contain facilities such as tackboards, pegboards, shelves, and the like.



A demonstration stand placed where students can see it with ease may be used by the teacher to give group instruction and to illustrate each phase of the instruction that pertains to typewriting techniques.

Storage facilities for display equipment
A display window located where student traffic passes
Provision for the use of audio-visual equipment
Provision for operation of electric equipment

FURNITURE

A list of the furniture needed follows:

Student stations equipped with working surfaces approximately 24″ x 36″ and adjustable in height; also suitable chairs
Teacher station with appropriate working surface and drawers; also a suitable chair, swivel type desirable
Suitable file cabinets
Island display case
Island counter
Magazine and pamphlet rack

EQUIPMENT

A list of the equipment needed follows:

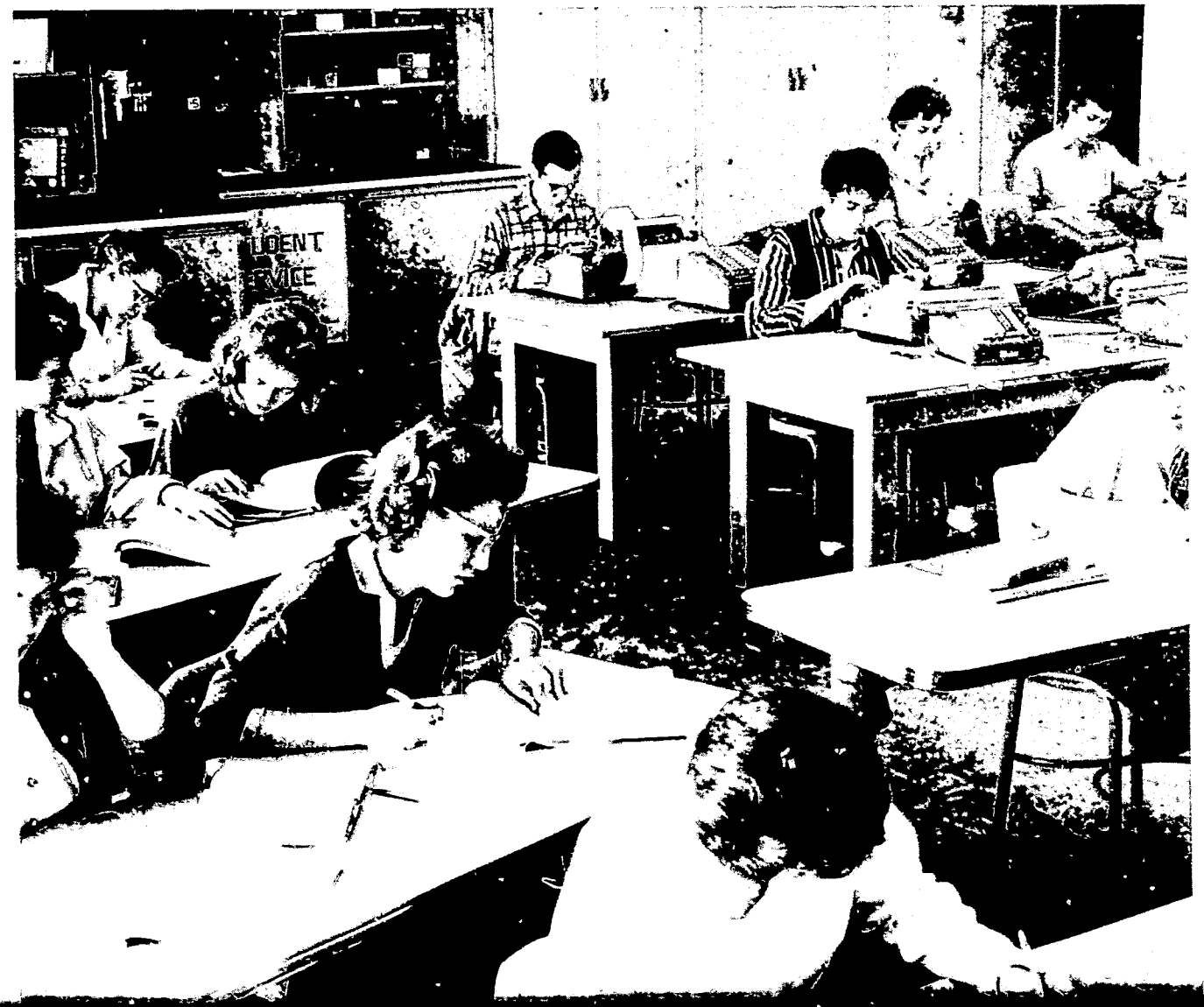
Cash register  Manikins  Small tools  Paper roll cutter

## BOOKKEEPING CLASSROOM

The bookkeeping classroom may be used for other general classes. It should contain the following features:

Provision for the use of electric adding machines
Adequate working surfaces
Provision for the use of audio-visual equipment
Storage facilities for student work and for materials of instruction
Bulletin boards and chalkboards for displays and classroom instruction

In studying bookkeeping, students need working surfaces for doing the required written work and machines available for making essential computations.



Shelving, display cases, counters, drawers, and display boards provide space for students to study different methods of displaying material.

FURNITURE

A list of the furniture needed follows:

Student stations equipped with working surfaces approximately 24″ x 36″ and adjustable in height; also suitable chairs

Teacher station with appropriate working surface and drawers; also a suitable chair, swivel type desirable

Suitable file cabinets

EQUIPMENT

A list of the equipment needed follows:

Adding machines

Set of bookkeeping charts

## OFFICE AND STORAGE SPACE

The office and storage space may be used for meetings of small groups as well as for office space for teachers and for storage of materials of instruction. It should contain the following features:

Provision for the operation of electric machines

Essential facilities for keeping hands clean

Adequate working surfaces

Storage facilities for materials of instruction used in business education classes

Provisions for teachers to duplicate materials of instruction

FURNITURE

A list of the furniture needed follows:

Teachers' desks with appropriate working surfaces; also suitable chairs

Suitable file cabinets

Provision for adequate working surfaces

EQUIPMENT

A list of the equipment needed follows:

Fluid process duplicator

Typewriter

# PLANNING JUNIOR COLLEGE BUSINESS EDUCATION CLASSROOMS

The junior college offers courses to carry out the general education and vocational education objectives of business education in the college transfer program and in the terminal education program. Courses concerned with the general objectives include such subjects as business law, economics, money and banking, marketing, and advertising. Curriculums are provided for occupations in the field of accounting, secretarial and advanced clerical work, and in merchandising and selling. In addition, specialized curriculums have been developed to meet particular business training needs in such fields as transportation, government service, merchandising, sales, insurance, tax accounting, small business management, and business data processing.

These courses are taught in the regular day programs and in the extended day and adult programs of the junior college. Adults of the community are offered the opportunity to take further training in the area of their interest.

## SPACE ADEQUACY SURVEY

The Space Adequacy Survey Forms for junior colleges shown on the following pages have been developed by the Bureau of School Planning of the California State Department of Education for the purpose of determining the number and kind of classrooms to be provided for the enrollment in a particular school. They provide a means of processing college class schedule data by using the one-student-in-one-classroom-one-hour as the unit of need for teaching space.

Form A of the Space Adequacy Survey Forms contains a record of each class section, the number of students enrolled, the number of times it meets per week, and the hour it meets. Average class size and student hours a week, by department and by clock hour, are computed from these data. (See page 24)

Form B contains a department summary of the data included in Form A, the total student hours per week and the per cent of student hours per week used by each department. This form is used to record projected changes in course emphasis, changes in balance among courses, and the effect of such changes on student hours per week. (See page 25)

Form C provides a means for comparison of course emphasis among selected junior colleges. (See page 26)

Form D provides a means of computing the number of teaching stations required. A staff conference is necessary to determine combination uses for rooms which are not used to their fullest potential in one department. Column 8, Form D, shows the number of each type of room required. Columns 9 and 10 are filled out only when the space adequacy procedure is used to provide for additional rooms to be added to existing buildings. (See page 27)

CALIFORNIA STATE DEPARTMENT OF EDUCATION
BUREAU OF SCHOOL PLANNING
FORM A—SPACE ADEQUACY SURVEY—1958

Form A—Space Adequacy Survey
Junior College

ABC College

Business Department

December 19__ Date

Prepared by HLG

## STUDENT-HOUR ENROLLMENT

(Use at least one line for each instructor
Separate line for lab courses
Separate sheet for each department)

| 1 | 2 | 3 | | | | | | | | | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Instructor (Name) | Course (Name) | Enrollments by hour and days per week [1] | | | | | | | | | Total enrollment (Col. 3) | Number of classes | Average size (Cols. 4 ÷ 5) | Student hours per week [2] |
| | | First 8:00 | Second 9:00 | Third 10:00 | Fourth 11:00 | Fifth 12:00 | Sixth 1:00 | Seventh 2:00 | Eighth 3:00 | Ninth 4:00 | | | | |
| | Accounting | 17-3 | 17-3 | | | | | | | | 34 | 2 | 17 | 102 |
| | Bookkeeping | 16-2 | 16-2 | | | | | | | | 32 | 2 | 16 | 64 |
| | Introduction to Business | | | 21-3 | | | | | | | 21 | 1 | 21 | 63 |
| | Beginning Typing | | | | 14-5 | | | | | | 14 | 1 | 14 | 70 |
| | Beginning Typing | 10-5 | | | | | | | | | 10 | 1 | 10 | 50 |
| | Advanced Typing | | | | | | 7-5 | | | | 7 | 1 | 7 | 35 |
| | Shorthand | | 17-5 | | | | | | | | 17 | 1 | 17 | 85 |
| | Business Machines | | | | | 16-5 | | | | | 16 | 1 | 16 | 80 |
| | Commercial Law | | | | | 18-3 | | | | | 18 | 1 | 18 | 54 |
| Total hour enrollments | | 43 | 50 | 21 | 14 | 34 | 7 | | | | 169 | 11 | 15 | 603 |

(These totals should be transferred to Form B.)

[1] Number of days class meets per week shown after dash line.
[2] Enrollment for class multiplied by number of hours class meets per week.

CALIFORNIA STATE DEPARTMENT OF EDUCATION
BUREAU OF SCHOOL PLANNING
FORM B—SPACE ADEQUACY SURVEY

Form B—Space Adequacy Survey
Junior College

ABC College

December 19__ Date

Business Department

Prepared by HLG

## SUMMARY BY DEPARTMENTS

I. Total student hours per week (Col. 7, Form A) for all departments 7291

| 1 | 2 | | | | | | | | | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Enrollments by period and hour (Col. 3, Form A) | | | | | | | | | Student hours per week | Per cent Col. 3 is of Item 1 | Col. 4 per cents adjusted by conference | Computed student hours per week (Col. 5 × Item 1) |
| | First 8:00 | Second 9:00 | Third 10:00 | Fourth 11:00 | Fifth 12:00 | Sixth 1:00 | Seventh 2:00 | Eighth 3:00 | Ninth 4:00 | | | | |
| Accounting, Bookkeeping | 33 | 33 | | | | | | | | 166 | 2.3 | 2.6 | 190 |
| Typing, Shorthand | 10 | 17 | | 14 | | 7 | | | | 240 | 3.3 | 3.7 | 270 |
| Office Training (machines) | | | | | 16 | | | | | 80 | 1.1 | 1.4 | 102 |
| Law, Mathematics, and the like | | | 21 | | 18 | | | | | 117 | 1.6 | 1.7 | 124 |
| Distributive Education, Marketing | | | | | | | | | | -- | -- | 1.5 | 109 |
| | 43 | 50 | 21 | 14 | 34 | 7 | | | | 603 | 8.3 | 10.9 | 795 |

CALIFORNIA STATE DEPARTMENT OF EDUCATION
BUREAU OF SCHOOL PLANNING
FORM C—SPACE ADEQUACY SURVEY

Form C—Space Adequacy Survey
Junior College

ABC College

December 19__ Date

Business Department

Prepared by HLG

## PER CENT COMPARISONS—JUNIOR COLLEGE PROGRAMS

| Junior college | M | | N | | O | | ABC | |
|---|---|---|---|---|---|---|---|---|
| Student hours per week | 39,962 | | 23,394 | | 5,491 | | 7,291 | |
| | Actual | Adjusted | Actual | Adjusted | Actual | Adjusted | Actual | Adjusted |
| Accounting, Bookkeeping | 1.1 | | 2.0 | | 2.6 | 2.6 | 2.3 | 2.6 |
| Typing, Shorthand | 3.4 | | 5.3 | | 5.3 | 3.7 | 3.3 | 3.7 |
| Office Training (machines) | .8 | | 2.6 | | 3.2 | 1.7 | 1.1 | 1.4 |
| Law, Mathematics, and the like | 4.3 | | .9 | | 1.9 | 1.9 | 1.6 | 1.7 |
| Distributive education, Marketing | 1.8 | | .2 | | 1.1 | 1.1 | - | 1.5 |
| | 11.4 | | 11.0 | | 14.1 | 11.0 | 8.3 | 10.9 |

CALIFORNIA STATE DEPARTMENT OF EDUCATION
BUREAU OF SCHOOL PLANNING
FORM D—SPACE ADEQUACY SURVEY

Form D—Space Adequacy Survey
Junior College

ABC College

January 19__ Date

Business Department

Prepared by HLG

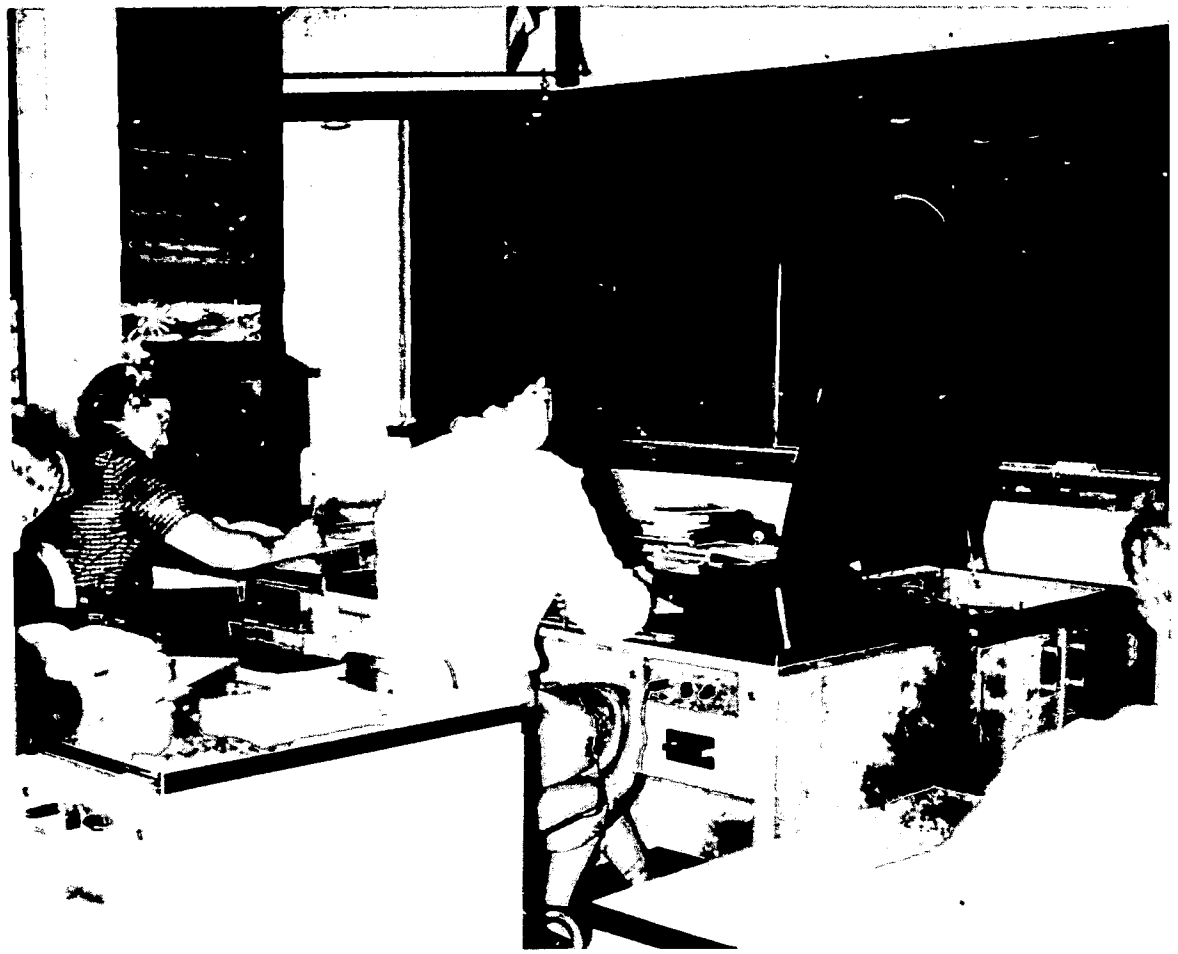
## TEACHING SPACE NEEDS

1. Predicted enrollment[1] 2500 date 1965
2. Present enrollment[1] 500
3. Predicted increase 2000
4. Working factor (line 1 + Line 2) 5
5. Hours available/week, for scheduling[2] 35

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Department: Course | Computed student hours per week (Col. 6, Form B) | Average class size (College policy) | Class groups per week (Col. 2 ÷ Col. 3) | Class groups per week for predicted enrollment (Col. 4 × Item 4) | Per cent of space utilization (College policy) | Computed teaching space needs: Col. 5 ÷ (Item 5 × Col. 6) | Teaching space needs adjusted by conference | Adequate teaching spaces available | Additional teaching spaces required |
| Accounting, Bookkeeping | 190 | 30 | 6.3 | 31.5 | 70 | 1.3 | 1 | 0 | 1 |
| Typing, Shorthand | 270 | 36 | 7.5 | 37.5 | 70 | 1.5 | 2 | 0 | 2 |
| Office training (machines) | 102 | 24 | 4.3 | 21.5 | 70 | .9 | 1 | 0 | 1 |
| Law, Mathematics, and the like | 124 | 30 | 4.1 | 20.5 | 80 | .7 | 1 | 0 | 1 |
| Distributive education, Marketing | 109 | 20 | 5.5 | 27.5 | 80 | 1.0 | 1 | 0 | 1 |
| | 795 | | | | | 5.4 | 6 | 0 | 6 |

[1] Day students taking 12 or more units.
[2] Clock hours from start to finish of scheduling day, less 1.

Provision should be made for students to take dictation at a rate of speed commensurate with their ability. The business education facility should be equipped with facilities for providing for dictation at various speeds.



# BUSINESS EDUCATION FACILITIES IN THE JUNIOR COLLEGE

The following pages contain suggestions for a junior college business education building, business division offices, merchandising laboratory, and data processing laboratory. These suggestions may be studied so that the features that are most adaptable to any local situation may be used to advantage.

## BUSINESS EDUCATION BUILDING

Flexibility in classroom size may be achieved by the structural design of the building. The building may be structurally supported at the corners which allows for the relocation of inner walls without making structural changes. Special features of the building, in addition to the provision for flexibility in classroom size, include the following: the duplicating laboratory should be readily accessible to the rooms which would normally use such facilities and be entered from the corridor so that duplicators may be used without passing through a classroom; storage space should be located where it is accessible to all of the rooms in the building.

## BUSINESS DIVISION OFFICES

The business division offices should be located adjacent to the business education classrooms. They should have the following features:

One station offices for faculty members
Office for the division chairman
Reception room including space for secretaries
Workroom
Conference room

### FURNITURE

A list of the furniture needed follows:

Desks File cases Bookcases Wardrobes Tables Chairs

### EQUIPMENT

A list of the equipment needed follows:

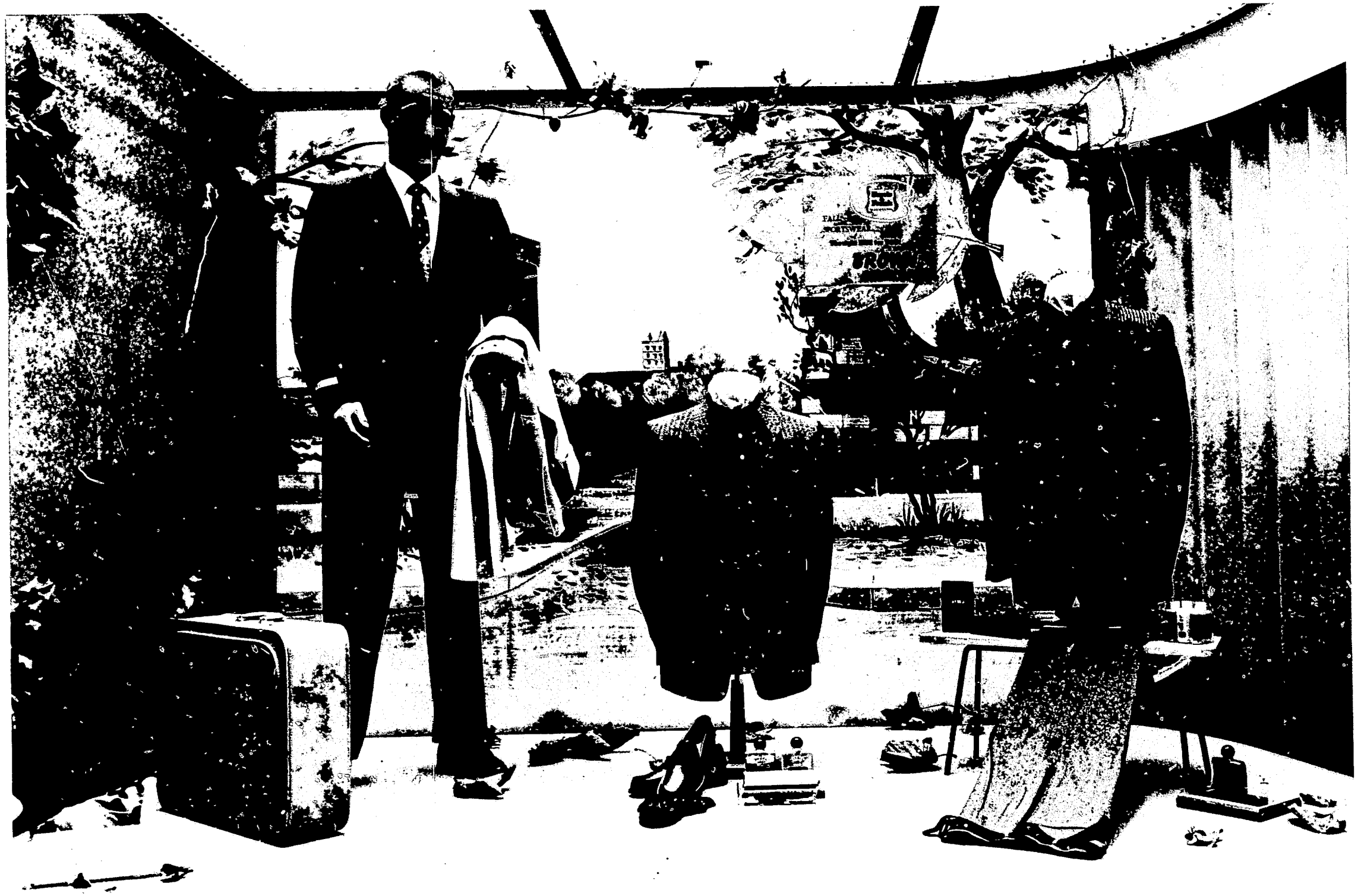
| | |
|---|---|
| Typewriters | Movie projector |
| Duplicators | Permanent screen in conference room |
| Tape recorders | Chalkboard in the conference room |
| Slide projector | Bulletin boards |

## MERCHANDISING LABORATORY

The merchandising laboratory, part of which could also be used as a general classroom, has the following features:

The merchandising area is separated from the classroom area
Display windows are located at the corner of the laboratory where the displays may be seen from two corridors. Drapes across the back of the display window form a background for displays.

The business machines room may be equipped with desks especially constructed for efficient machine operation.



Students are taught how to display merchandise to the best advantage.

Appropriate storage space for equipment
Adequate working space for preparation of displays
Needed bulletin boards and chalkboards for the classroom

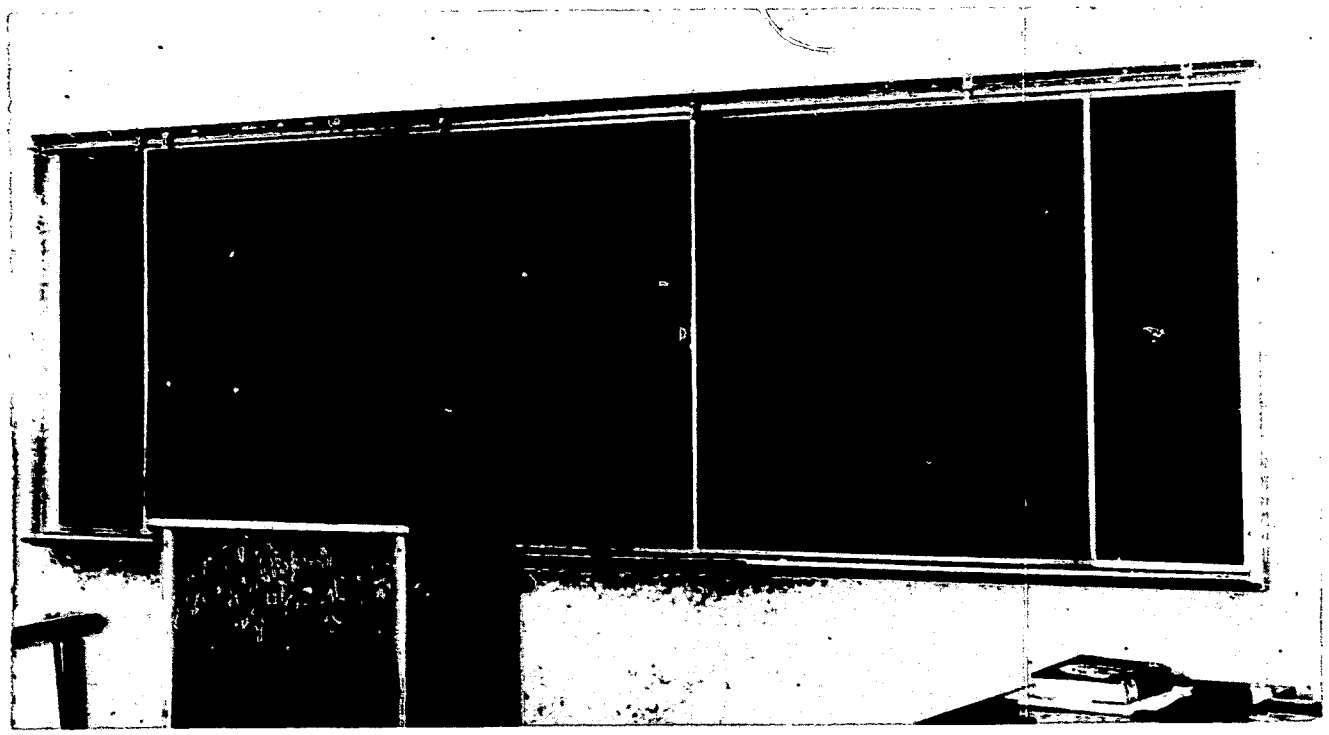
FURNITURE

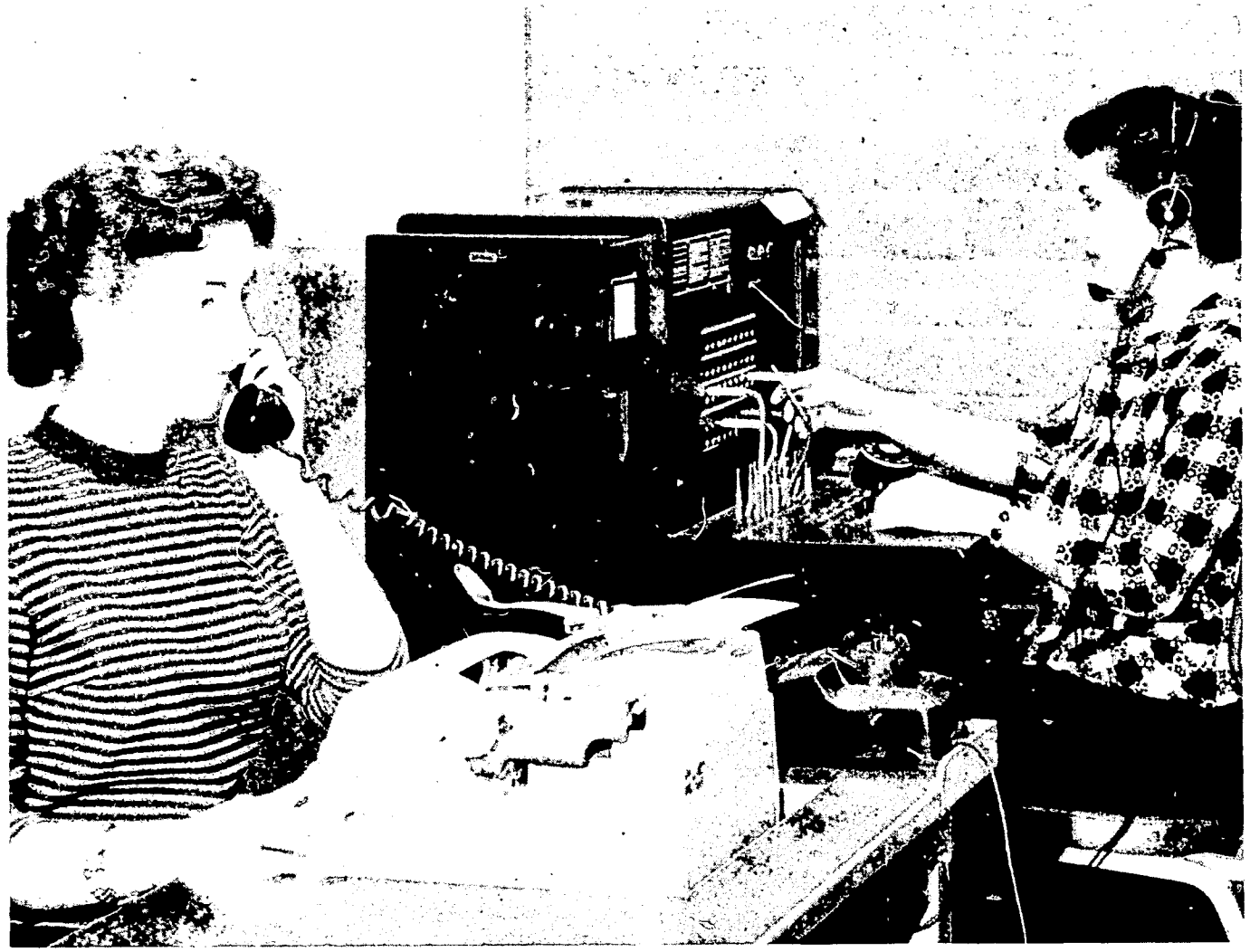
A list of the furniture needed follows:

Student stations equipped with working surfaces approximately 24″ x 36″ and adjustable in height; also suitable chairs
Teacher station with appropriate working surface and drawers; also a suitable chair, swivel type desirable

| | |
|---|---|
| Suitable file cases | Shelving |
| Display islands | Cashier's counter |

Sliding chalkboards provide the required writing surface and permit material to be retained for continued use. A display rail, installed at the top of the board, provides for the display of instructional materials.





Since workers in an office frequently must answer the telephone and operate a private board exchange (PBX), it may be advisable for business education facilities to be equipped with a telephone and a PBX.

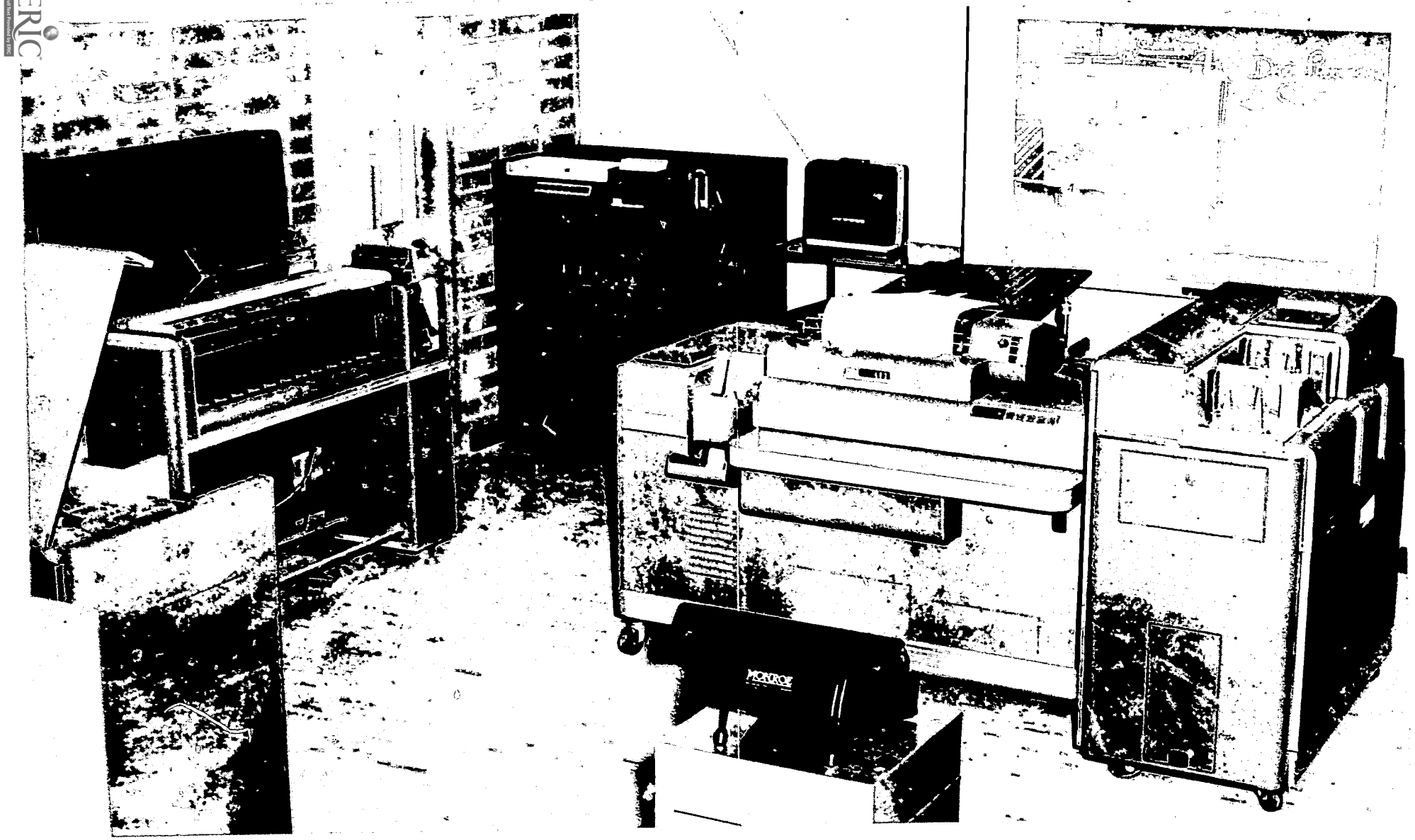
EQUIPMENT

A list of the equipment needed follows:

| | |
|---|---|
| Manikins | Stepladder |
| Forms | Iron and ironing board |
| Vacuum cleaner | Small tools |
| Paper roll cutter | |

## BUSINESS DATA PROCESSING UNIT

The data processing laboratory should be a practical facility in which training for the technical occupations can be given most effectively. It should contain the following features:




The data processing laboratory is equipped to provide instruction in machine operations required in data processing and to give students opportunity to practice using the machines.

Flexibility of application and common use in data processing should be the criteria for the selection of equipment.

Equipment should be chosen which will give experience in the most commonly used data processing systems.

The data processing area should provide for flexibility in arranging the equipment.

Adequate power should be provided for the equipment.

Adequate space for working should be provided around the data processing equipment.

Space should be provided for data processing, data preparation, control panel wiring and storage, computing, library, and classroom.

The area should be readily accessible to all departments which could use the facilities.

EQUIPMENT

A list of the equipment needed follows:

Printing key-punch
Sorter
Accounting machine (printer)

Additional equipment in the order of importance would be the following:

Collator
Reproducing punch
Calculating punch
Electronic computer
Peripheral equipment for computer

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