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A HISTORY OF CHANGING TRENDS AND IDEAS OF SELECTED TYPEWRITING EQUIPMENT AND TEACHING AIDS

by

Robert M. Vooge

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This thesis submitted by Robert M. Vooge in partial fulfillment of the requirements for the Degree of Master of Science in the University of North Dakota is hereby approved by the Committee under whom the work has been done.

John L. Rowe
Chairman

John C. Peterson

R. L. Gray

Christopher J. Hamre
Dean of the Graduate School

272701

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The author is indebted to the advertisers and manufacturers, of the selected items, for their replies and assistance. Acknowledgment is made to the Business Education World for some of the ideas used for sketches, and finally the writer expresses his appreciation to Miss Dena Feldman for her help with the sketches and drawings.

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ABSTRACT

This study traces a brief history of the following selected items of typewriting equipment and teaching aids: (1) adjustable tables, desks, and chairs; (2) demonstration stands; (3) copyholders; (4) erasers; (5) music and rhythm devices; and (6) keyboard charts.

Advertisements and articles appearing in business education periodicals and books, found in the library at the University of North Dakota, are the main sources for this research. A limited number of letters, requesting historical information, were sent to manufacturers and advertisers of the above equipment items. Their replies provided additional data for the study.

The findings of the study are presented under the six headings listed. The history of each selected equipment area presents a brief overall view. The history of these items reveals a wide variety of ideas and many differences of opinion. Many of these ideas and opinions have changed as a result of debate, experience, research findings, and reflective thinking.

Further ideas, drawings, and information about the selected equipment and teaching aids are presented in the appendixes.

CHAPTER I

INTRODUCTION

The typewriter, a clumsy machine during the 1890's and at the turn of the century, has been given a complete face lifting in our modern age. As the typewriter has changed from its early beginnings so has the equipment and teaching aids used with it.

This study reviews the history of selected typewriting equipment and teaching aids by: (1) a persual of the professional education publications concerning information and advertisements of selected typewriting equipment and teaching aids; and (2) information obtained from a limited number of equipment manufacturers and publishers.

The Problem

Many types of equipment, devices, teaching aids, and methods have been developed or invented and used to teach typewriting. Some have been with us a long time and some a short time. Some have had their brief day and then disappeared. Some are still with us, but in new forms. The problem involved in this study is to trace a brief history of a selected listing of typewriting equipment and teaching aids.

Importance of the Study

Instruction in typewriting is approximately 90 years old. During this period many items of equipment and teaching aids have been used. Some have proven useful; some have not.

Business departments today are experiencing a tremendous growth. Office mechanization and automation is taking place at such a rapid rate that the business teacher must work diligently to keep up to date. As we look about us at the many new types of equipment in our day and age we find we are part of the history of our time. Many of us do not remember when we did not have some of our latest equipment. How did things come to be what they are today?

> In 1874 Mark Twain bought a typewriter. He tried it out, and then wrote his brother: It piles an awful stack of words on one page. It don't muss things or scatter ink blots around. Of course it saves paper.[1]

The present world is built upon the solid foundation of the past. Changes in equipment and teaching aids are almost as impressive as the changes in the typewriter itself. The importance of this study is manifest in some of the changes and events of typewriter equipment and teaching aids, as they influence typewriting practices today. The first successful typewriter started a chain of changes and events that still affect every typist:

> Just fifty (80 yrs. now) years ago, my dears,
> the first typewriter came along,
> a cumbersome thing of bars and gears,
> and it amused the human throng.
>
> The operator, lacking skill,
> pressed down upon the awkward keys;
> it sounded like a coffee mill,
> or like a windmill in the breeze.
>
> The wise men viewed it with a smile,
> and said it was a trifling toy;
> it might intrigue man for a while,
> but in the end it would annoy.

---

[1]Richard N. Current, The Typewriter and the Men Who Made It, (Urbana: The University of Illinois Press, 1954), p. 72.

It gave no character to script,
and letters written with machines
would of all flourish be stript,
and that would surely spill the beans.

"Our fathers wrote," the wise men cried,
"with gray goose quills and home-brewed ink;
the fair and trenchant tools they plied
are fine enough for us, we think.

This new machine is good enough
to show around at county fairs,
but quills of gray geese are the stuff,
and we don't fall for modern snares."

And now the smooth typewriters click
in every office, mart and den
and he puts up a wrathful kick
who spends five minutes with a pen.

At bottled ink we look and laugh,
at rusty pens we gaze and sigh;
how did our fathers stand the gaff?
And echo makes no sane reply.--
(Walt Mason, "The Typewriter.")[1]

As the typewriter has improved from early years, so has the equipment and teaching aids we use today. To a greater or lesser extent, every new piece of equipment is a product of many minds.

Need for the Study

Several books, articles and thesis have been written on the history of typewriting. Many books and articles include a short section on one or more of the topics included in this thesis. None of these, however, presents a history of these equipment items. This is the first study, insofar as can be ascertained, containing a history of these selected typewriting equipment and teaching aids.

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[1]E. G. Blackstone and S. L. Smith, Improvement of Instruction in Typewriting, (New York: Prentice-Hall, Inc., 1936), p. 1.

Scope and Delimitations

The continuous and rapid development of equipment, instructional technology and the wide range of the items limits this study to the following selected typewriting equipment and teaching aids:

1. Adjustable tables, desks and chairs
2. Demonstration stands
3. Copy holders
4. Erasers
5. The use of music and rhythm devices
6. The use of keyboard charts

This study is further limited to:

1. The information found in professional education publications and textbooks pertaining to the above selected list was located mainly in the library at the University of North Dakota.
2. A selected list of requests for historical information requested from manufacturers of typewriting equipment.
3. The data presented is mainly from secondary sources taken from the period 1901-1966.

Definition of Terms

A number of terms are used which are related to the area of typewriting equipment and teaching aids. The definitions of these terms are a combination of: Good's Dictionary of Education[1] and this writer. The following are defined in terms of their relationship to the topics in this thesis:

Adjustable chairs--a posture chair which adjusts the seat for persons of all heights. Most of these chairs are easily adjustable; the

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[1]Carter V. Good, Dictionary of Education, (New York: McGraw-Hill Book Company, Inc., 1959).

seat height ranging from 15 to 25 inches from the floor. The different models have many posture comfort features.

Adjustable typewriting tables and desks--a table or desk which allows height adjustment of the typing surface from 25 to 30 inches; depending upon the size of the person using the machine and the machine used.

Copy holder--an object for holding copy for typewriting; usually placed opposite the carriage throw of the typewriter, at a correct slant and distance.

Demonstration stand--a metal or frame stand accomodating a typewriter for demonstrating various phases of typewriting. It may or may not be adjustable in height.

Equipment--articles such as furniture, that are used without being consumed.

Keyboard chart--a diagram indicating the application of the fingers to the keys.

Metronomic rhythm--rhythm maintained by typing with evenly measured strokes. The time elapsed between striking each key and the space bar is uniform.

True typing rhythm--rhythm possessed by an expert typist which produces a fluency of strokes within words. These motion patterns are similar whenever the same words appear again.

Teaching aid--an auxiliary instructional device, such as a chart, drawing, picture, film, mock-up, or working model, intended to facilitate learning.

The "basic slant" principle--the hands and arms of the typist should be in the same relative slant as the typewriter keyboard.

Typing position--correct posture at the typewriter; recommended position specifications: about 6 to 8 inches of space between top of knee and frame of typewriter; front of body 8 to 10 inches from base of typewriter and slightly to right of center of keyboard; fingers curved; wrists low; feet preferably flat on floor.

Typewriting room--an instruction room equipped with tables or desks on which are placed typewriters for use in learning or practicing typewriting.

Touch typewriting--the method of typing in which all the fingers are used for striking the keys and the eyes are employed for reading copy only.

Visual typewriting--the method of typing in which the operator alternately watches the keys and the material being copied.

CHAPTER II

PROCEDURES

This study began with an examination of the Typewriting Research Index[1] to determine what research had been completed for the topics selected for this thesis. The Business Education Indexes[2] were of little value in this research because: (1) they start in 1940; and (2) advertisements and pictures were to be studied, along with articles. The indexes do not contain this information.

The next step was to check what periodicals and books were available at the University of North Dakota Library. Starting with the oldest (1920) volume of The American Shorthand Teacher the study was begun by checking through each volume for advertisements, notes or articles on the selected items of equipment. The personal library of Dr. John L. Rowe, Chairman of the Department of Business Education, was also made available for early editions of The Gregg Writer and other works.

Along with the search of periodicals and books, letters were sent to twenty companies. (See Exhibit B, page nine.) Most of these companies had pictures of their modern equipment appearing in the

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[1]Harves Rahe, Typewriting Research Index, (New York: Gregg Publishing Division, McGraw-Hill Book Company, Inc., 1963).

[2]Business Education Index, Delta Pi Epsilon Fraternity, (New York: Gregg Publishing Division, McGraw-Hill Book Company, Inc., 1940-1965).

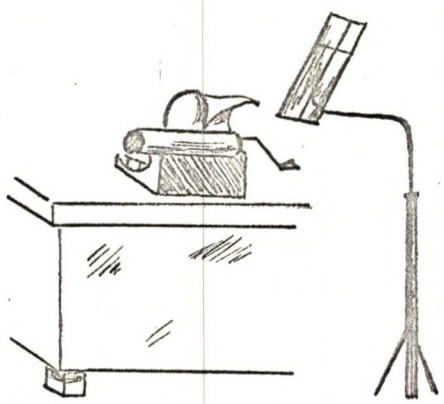
March, 1966 edition of Business Education World.[1] This is the "Business Classroom Equipment Guide" issue. These letters were sent for the purpose of obtaining some idea of how close the first advertisements were to the actual introduction of these items of equipment on the market.

File folders were then made in which to place information concerning the selected items. Notes were taken on 4" by 6" cards and filed in the folders. As replies were received from typewriting equipment companies, they were also filed in the proper folder. Before beginning chapter three, the cards for each subject area were arranged in chronological order.

Exhibit A

THE GREGG WRITER February, 1918 p. 277-278
Vol. XX, No. 6

Mrs. E. D. Hart, "Idea Exchange." An easy way to make a satisfactory copyholder is to take a cheap music rack and bend the adjustable upright. It can be adjusted to any height and distance wanted. It rests on the floor so there is no vibration.



[1] "Business Classroom Equipment Guide," Business Education World, XLVI (March, 1966), pp. 25-77.

Exhibit B

May 12, 1966

Cramer Industries, Inc.
625 Adams Street
Kansas City, Kansas 66105

Gentlemen:

I am currently working on a study, which is: "A History of Selected Typewriting Equipment and Teaching Aids." I am using the information found in professional education publications and textbooks as my main source, but I am in need of additional information. I would appreciate any help or suggestions you could offer pertaining to information on:

1. How long your company has been making adjustable typewriting furniture and demonstration stands.

2. A history of the use of adjustable tables and chairs in typewriting. (Non-adjustable, also.)

3. A history of typewriting demonstration stands.

As your company is a leader in the field of Business Education Furniture and Equipment, any information or opinions you offer will be valuable in this study.

I am looking forward to your response and wish to express my sincere thanks for your assistance.

Sincerely yours,

Robert Vooge
Beach High School
Box 263
Beach, North Dakota

CHAPTER III

FINDINGS

In any field of education the challenge is to learn more about many things. This writer, found the history of these selected topics to contain much interesting information about many things in the field of business education. The history of these items is the history of business education--change.

To compare the dates of the first advertisements, or mention of an item of equipment in the various periodicals, letters were sent to manufacturers and advertisers of these items. Twenty letters were mailed. Replies of some type were received from eighteen companies.

Eight companies' only reply was a sample of their article or some current literature or advertising of their product. The other companies all replied with a friendly response. One company even sent a book (on approval) with the appropriate pages marked. Two exceptionally interesting and helpful letters were received from: (1) William E. Karl, Karl Manufacturing Company, Grand Rapids, Michigan; and (2) J. P. Templeton, secretary of the Joseph Dixon Crucible Company, Jersey City, New Jersey. These two sources provided some helpful as well as interesting firsthand information on the items in this study as well as other areas of business education.

In all cases the dates of first mention or of first advertising were very close to the date the item was placed on the market. Some

companies mentioned they were not sure of the history of the item they sold or when they first started manufacturing this particular item.

The findings of this research are presented by area studied:

A History of Adjustable Tables, Desks and Chairs in Typewriting

The history of tables and chairs is of great antiquity. The legs of the first tables and chairs were probably those of wild beasts. Many early tables were easily portable and used only for meals. History books tell us the Assyrian and Grecian tables were made of metal and possibly other materials. In addition to wood, tables and chairs are known to be made of stone, ivory, marble, bronze and other metals including the precious metals. From these early beginnings have developed our modern furniture.

The history of typewriting furniture must begin with our first typewriters. The size of early machines varied tremendously. In The History of the Typewriter[1] the "Ingersoll" typewriter is

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[1]The History of the Typewriter, (School Department of Royal Typewriter Division, Royal McBee Corporation), pp. 2-3.

mentioned as being of pocket size. Some other variations were: The "American" marketed in 1893, was only four inches long and weighed five pounds. Charles Bennett of New Jersey presented a typewriter ten inches long and two inches high. Towering over these in size as well as cost were the "Bradford" which typed short common words and the "Megagraph" which stood six feet high and weighed 400 pounds. Pictures of early typewriters show these machines on many different types of tables--depending on the size of the machine.

This writer was unable to find out just when the first typewriting table or desk was manufactured, but the Remington sewing machine stand was one of the first used for typewriters. Early model Remingtons were ornamented with flowery designs and one model was fitted into a sewing machine stand with a foot treadle to return the carriage.[1] It appears the height of the sewing machine stands were 26 inches, which became a common height for early typewriter stands, tables and desks.

Starting in 1888 with the early typewriting contests, and during the next two decades, typewriter company demonstrators started analyzing their skills. Their ideas often were made known without serious study and resulted in some confusing ideas on the topics of rhythm, posture, speed, accuracy, blank keyboards, etc. All of the early demonstrators emphasized the need for correct posture, specifying desirable heights of tables and chairs. These heights were usually from 25 to 27 inches, with 26 and 27 inches the most common.

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[1] Ibid., p. 4. (An excellent picture of this machine may be found in: Allien R. Russon and S. J. Wanous, Philosophy and Psychology of Teaching Typewriting, (Cincinnati: South-Western Publishing Company, 1960), p. 9.)

As early as 1912, professional typists recognized the need for raising their typewriters. It is said that George Hossfield, ten times world champion typist, always wrote on a surface 30 inches high.[1]

From early times, to the present, there were many studies relating to typewriters. Furniture, however, has more or less been taken for granted. This fact is mentioned by Clem:[2] "The typing desks sold generally for many years are only 26 inches high. This is too low for efficient typewriter operation, except for persons of small build."

For many years typewriting teachers and professional typists were well aware of what seems to be the best position in relation to the height of the typewriter:

> Faulty typewriter operating technique is not always due to inaccurate fingering. The height of the typing table has a direct bearing on the mastery of typing skill. Mrs. Esta Ross Stuart, author of "The Tests in Rational Typewriting," says that it is generally agreed among typing teachers of experience that the correct height of table for the average student is 29 inches.[3]
>
> Unfortunately, many architects who design school buildings know little about the requirements of teaching special subjects. The height of a typewriter table may seem insignificant to one unacquainted with methods of teaching typewriting. Standard height of 26 inches is too low.

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[1]Earl P. Strong and Mildred E. Reed, "Evaluating Your Typewriting Classroom, Business Education World, XXXII (May, 1952), p. 445.

[2]Jane E. Clem, Techniques of Teaching Typewriting, (New York: Gregg Publishing Division, McGraw-Hill Book Company, 1955), p. 36.

[3]Editorial, "Height of Typing Tables," The American Shorthand Teacher, IX (March, 1929), p. 256.

> A two inch raise in the height would give proper slant to the forearm.[1]
>
> Far too many typing rooms are equipped with but a single height of table and chair.[2]
>
> Poor and inadequate equipment is slowing progress of Business Education. Steps should be taken to draw a model floor plan and prepare monographs. It should be something of authority so administrators will pay some heed.[3]

It was not until the year 1942, however, that anything much was done with this knowledge. In this year, a study of typewriter height was made by the United States Department of Agriculture Training Division, Office Personnel. Their findings in this study were later turned over to the General Research Committee of the Society for the Advancement of Management.[4] The importance of this study is given by Smith[5] when he reports on the bulletin of the Society for the Advancement of Management:

> . . . more than 3,500 typists in the Department of Agriculture alone are using special lift boxes to raise the height of their typewriter tables. The bulletin describes these boxes and methods to properly adjust chairs. It mentions measurements were taken to determine correct posture and copy angle and neck and backstrain. . . .Remarks from typists illustrate the importance of height.

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[1]Albert Ernest Bullock, "Some High School Problems Present Day Teaching Brings," The Journal of Business Education, II (July, 1929), p. 17.

[2]Harold H. Smith, "The Teaching of Typewriting," The American Shorthand Teacher, X (September, 1929), p. 25.

[3]Editorial, The Business Education World, XVIII (October, 1937), pp. iii-iv.

[4]"A Study of Typewriter Height," General Research Committee, Society for the Advancement of Management, New York, 1945.

[5]Harold H. Smith, "A Study of Typewriter Height," The Business Education World, XXVI (November, 1945), p. 142.

> As far as we know, this is the first large scale concrete move to correct a situation that has cried for correction for at least thirty-five years. We hope the manufacturers of typewriter tables and chairs for offices and schools will become aware of these developments and do their share.

This study and a similar one made by the United States Navy[1] were responsible for a new look at the "basic slant" principle. This principle is that the hands and arms of the typist should be in the same relative slant as the typewriter keyboard. On a standard manual typewriter this slant is about 30 degrees. This slant is much less on electrics; on an I. B. M. it is approximately 12 degrees. As a result of these studies, much more attention was given to what adjustments should be made in typists' chairs and desks to permit correct posture.

Lamb[2] explains the Department of Agriculture study and tells us about the beginnings of adjustable equipment:

> During World War II, the Department of Agriculture devised lift boxes in three sizes--2", 3", and 4"--for their typists, most of whom were typing at a height 26 inches from the floor. These boxes were made available on a voluntary basis, after their purpose has been explained and demonstrated. They proved to be so popular with the typists and stenographers that several thousand boxes, in several colors to match office furniture, were ordered from the Public Building Administration's carpenter shop. Typists reported that the boxes reduced fatigue and made their work easier. Equally important, placement of the machines at the proper height for typists no doubt improved their control of stroking, with a consequent reduction in errors.

---

[1]"Training of Office and Clerical Employees of the Naval Establishments," Division of Shore Establishments and Civilian Personnel, Training Branch, Washington, D. C., March, 1945.

[2]Marion M. Lamb, Your First Year of Teaching Typewriting, (Cinncinnati: South-Western Publishing Company, 1959), p. 44.

> Since that time, school equipment companies have been making adjustable typewriting tables that are practical for typewriting laboratories, and in schools where the adjustable tables could not be purchased, the lift boxes have provided a good second choice.

Blackstone and Smith[1] give us the following detailed explanation of the United States Navy study:

> The United States Navy studied the relation of sitting height to typewriter height, and recommended that the sitting height be such that, with the arms held normally at the sides and the hands extended to the keyboard, the slant of the forearms would be approximately the same as the slant of the typewriter keyboard. This means that, since students differ in height and in arm length, adjustments must be made to the individual. The standard desk height that used to be recommended (26 inches) has been found to be too low for all but the shortest students. Now the standard height is probably about 30 inches. In each typing room there should be desks or tables of different heights, from 26 inches to perhaps 32 inches, and seating arrangements should be adjusted so that the tall students have high desks and shorter students have lower desks. When the student is seated, there should be some room between thetop of the knees and the under edge of the desk. The chair should be free to move forward or back, according to the length of the forearm. Chairs should not all be of the same height. Adjustments in chair heights can be easily made by cutting off chair legs a little, by placing a box in front of the chair of the very short student so that he may rest his feet upon it, and by building a small platform on the desk under the typewriter for tall students.

From the time of these studies until the present day business educators believe that the height of typewriting desks for non-electrics is too low if that height is not 27 inches or more. Harms[1] makes this

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[1]E. G. Blackstone and Sofrona L. Smith, Improvement of Instruction in Typewriting, (New York: Prentice-Hall, Inc., 1949), p. 57. (Pages 58-61 of this book contain some excellent pictures illustrating correct position as made in this study.)

[2]Harm Harms, Methods in Vocational Business Education, (Cincinnati: South-Western Publishing Company, 1949), p. 73.

observation on desk height: "Students tend to gravitate to higher tables if they are available. It seems to be more natural for one to reach up to the keyboard rather than to allow the wrists to be level or slant downward." The height of 26 or 27 inches is thought to be satisfactory for electric typewriters. From this point on, however, there is a wide difference of opinion as to what is the best type of table or desk for use in typewriting.

Adjustable and non-adjustable chairs have existed since the first typewriter. Very little mention is made of them, and there seems to be little disagreement as to correct height. Heights of 16 to 20 inches are mentioned depending on the height of the typewriter. Most authorities seem to agree that chairs should very in height from 16 to 20 inches.

During the war years new office equipment was rather scarce. Bowle[1] mentions this fact:

> Going the rounds in search of new items in office equipment and supplies, we find that, owing to the present emergency and the change from peace-time activities to war-time production, new items are scarce. With priorities giving preference of steel and other metals to defense production all office equipment is affected.
>
> Perhaps this condition may force manufacturers to do some research and find substitutes for the metals that are no longer available. Plastics are being used more and more, and we hope to report to you, as time goes by, some developments along these lines in the field of office equipment.

After the war attention was centered on improving existing office equipment and replacing substitute materials with better

---

[1]Archibald Alan Bowle, "On The Lookout," The Business Education World, XXII (February, 1942), p. 556.

materials again available. It is this writer's belief that the beginnings of our modern adjustable tables and desks goes back to about 1945-46. The following quotations support this belief:

> The first desk was probably manufactured in this country about one hundred years ago . . . improvements and experimentation is still being carried on . . . For instance, one equipment company claims that the dark linoleum top contrasts too greatly with the material being used, causing eye fatigue, and is experimenting with light-colored surfaces.[1]

> Improvements in Teaching--The author foresees many physical, mechanical, and educational improvements in the teaching of typewriting. We shall have posture chairs that may be quickly adjusted for the individual student and possibly desks that may be raised or lowered.[2]

> Stenographers Stoop--To prevent stooping posture, wood desk manufacturers are making typewriter platforms adjustable to the height of any worker, according to the wood office furniture institute. Chairs are being designed for greater comfort and better posture.[3]

Starting early in 1947 advertisements start appearing for adjustable tables, desks and chairs. The Hammond Sales Company, Hammond, Indiana, used several full page ads to illustrate the "slant principle" and show how their adjustable desk meets this need.

There are two main types of adjustability for tables and desks. One method is by changing the height of the legs, and the other by changing the height of the typewriter without disturbing

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[1]D. L. Brush, "Office Machinery and Equipment in the Post-War Period," The Journal of Business Education, XXI (January, 1946), p. 19.

[2]James R. Meehan, "Trends in the Teaching of Typewriting," The Business Education World, XXVII (June, 1947), pp. 577-579.

[3]"Sidelights of Business," The Gregg Writer, XLVIII (May, 1946), p. 464.

the rest of the desk. Today, the height of the legs are adjustable by turning a crank or merely lifting and the legs "telescope" in some manner. The method of changing the height of the typewriter is usually accomplished by using a machine well. This well is set in the desk and has a platform that can be raised or lowered to fit the needs of the individual student. Today individual desks and tables may even be purchased or constructed having small gliders on the legs which adjust to uneven floors.

Today typewriter tables and desks exist in many sizes, shapes and forms. These have been classified into four general classes or types. Each class may have combinations and variations available, but only the main classes are described:

Long tables--from two to six typewriters are placed on a long table. These are usually solidly constructed and non-adjustable.

Small individual desk or table--may be either adjustable or non-adjustable. Today this is perhaps the most common of the four classes listed.

Drophead type desks--the typewriter may be turned down out of sight, leaving flat top desks. These are usually non-adjustable. The big advantage of these desks is that the room may be used for classes other than typewriting.

L and Z-shaped desk or table--the modern version of the drop head type desk. Most of these have been introduced in the 1960's and are becoming very popular. These may be adjustable and offer the advantages of more space, and a room equipped with these may be used for more than just typewriting.

Typewriting teachers do not always agree on which is the best desk or if adjustable equipment should be used. Let us now take a look at some of the highlights of these various views:

> The classroom should be equipped with desks or tables that are instantly adjustable in height. The height of the machine at which students type has a pronounced effect on speed, on productivity, and especially on accuracy. If funds are not sufficient to buy adjustable desks or tables, tables of different heights should be bought.[1]

Blackstone and Smith[2] present the following summary of the topic:

1. There appear to be no particular reasons, other than those rising out of tradition, for the use of the small individual desk.
   a. Individual desks are more expensive per unit than the long table.
   b. They may need frequent repairs because they are not as substantial and can be easily moved.
   c. Their most serious flaw is that they permit only a minimum number of desks in a room.
   d. If two or three desks are placed end to end, they form one long table, except that they are less substantial and much more expensive.
2. Perhaps separating students by distance is conducive to discipline, and perhaps the room is more attractive with small individual tables, but from the standpoint of efficiency and economy, the small individual table is difficult to justify.
3. Many larger schools have dispensed with the small individual table in favor of the long table that can house a number of machines. If such a table is constructed in a sturdy manner, with heavy legs, with

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[1]Alan C. Lloyd, "Making the Most of Your Typing Classroom," Business Education World, XXXV (February, 1955), pp. 16-18.

[2]Blackstone and Smith, Improvement of Instruction in Typewriting, pp. 54-56.

wide supporting beams under the top, and with a solid top, it will last for many years, and the cost per typewriter unit is relatively low.

4. The full-size office desk with drop-head is the most expensive of all types.

   a. It more nearly approximates office conditions than any other type.

   b. The drop head attachment must be sturdy or it will need frequent repairs.

5. If there is even one vacant period, the drop-head desk is probably best because individual or long tables with the typewriter on top make the room almost useless for any class other than typewriting.

6. The long, sturdy table is recommended for typewriting rooms except in cases where the typing room is not used every period of the day for typewriting. The small individual table is not recommended.

Thompson[1] says the individual table or desk is essential:

There should be an individual table or desk for each typewriter, with an aisle on each side. (Learning to typewrite is a personal problem. Anything that will help the student to concentrate on self will help to solve that problem.)

Morgan[2] has some interesting views that oppose those of Blackstone and Smith:

1. Use desks, not long tables. It may be necessary to have long tables with three or four typewriters per table, though this is frowned upon. (Plans are given for constructing individual tables with the statement: "If you can afford long tables you can afford to construct this type of individual table.")

2. Adjustable chairs are not only an asset but a necessity in every typewriting room. Why should students have to build themselves up with books when comfortable chairs can be purchased for $6 apiece?

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[1]Julian R. Thompson, "Providing a Desirable Typing Situation," The Journal of Business Education, XXI (March, 1946), pp. 17-18.

[2]Odus L. Morgan, "Your Typing Room--Can You Afford It?" The Business Education World, XXIV (May, 1944), pp. 510-511.

Brendel[1] makes the following comments:

1. Fully adjustable chairs sound good in theory but rarely work well in practice. Students adjust themselves to chairs instead of adjusting chairs to themselves.

2. An individual long table may provide for two--but no more typing stations.

3. A disadvantage of adjustable desks is that unless students are reminded and checked regularly, they do not adjust desks to themselves; instead they adjust themselves to desk height.

4. Maintenance of adjustable desks can become expensive.

Russon and Wanous[2] feel each student should have his own typewriter desk or table.

Rowe, Lloyd, and Winger[3] provide a rating blank with the following to be considered:

Typing Tables:	Points
Individual adjustable.	10
Individual, varied height. . .	8
Double, varied height.	5
Uniform height	-5
Typing Chairs:	
Flat seats, adjustable	5
Flat seat, uniform height. . .	3
Sloped or bucket seat.	-5

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[1]LeRoy A. Brendel, "Equipment Considerations In Typewriting," Methods of Teaching Typewriting, Thirty-eighth Yearbook of the Eastern Business Teachers Association, (Somerville, New Jersey: Somerset Press, 1965), pp. 208-209.

[2]Russon and Wanous, Philosophy and Psychology of Teaching Typewriting, p. 81.

[3]John L. Rowe, Alan C. Lloyd, and Fred E. Winger, Gregg Typing 191 Series, (New York: Gregg Publishing Division, McGraw-Hill Book Company, Inc., 1962), p. 11T.

Selden[1] has this to say about adjustable and L-shaped desks:

> Experience indicates that stationary (fixed top) rather than adjustable desks are preferable. The reasons are (1) an adjustable desk costs almost twice as much as a fixed-top desk, (2) students rarely raise or lower an adjustable desk to fit their needs, and (3) the mechanism on an adjustable may be in need of repair . . . As a result of the leadership of some business educators and the cooperation of at least two manufacturers of school furniture, an ideal desk, commonly referred to as an L-shaped desk, is now available in different sizes. These desks might become widely used if school administrators and school boards understand the need for this furniture in the instructional program. . . . In a small school, this desk can be justified because the room is used for business subjects other than typewriting. In a large school, especially one with more than one typewriting room, the L-shaped desk can be justified for advanced work in shorthand and typing as well as stenographic office practice.

Klein[2] gives some different thoughts on posture:

> Many great champions have a bit unorthodox way of doing things. Albert Tangora had his desk specially equipped with two rubber pads; and, when practicing or taking part in a contest, he would jam the left and right sides of his legs against these pads. Margaret Owen, one of the early champion typists said she was handicapped in giving demonstrations by being required to keep her feet flat on the floor, she preferred to wrap them around the legs of her chair. There is no one best position for typing. It is highly probable that maintaining any position for too long a time will cause fatigue and that better typing will result if small, restful shifts of position are made whenever the student becomes slightly tired.

It should be noted in all fairness to the quotes used that the latest types of adjustable desks made of both metal and wood, like the latest adjustable chairs, are far superior to earlier models.

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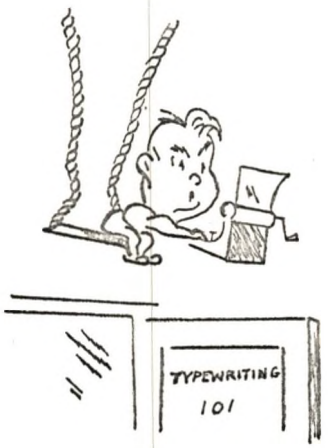
[1]William Selden, Planning the Facilities for Business Education, Monograph 112, (Cincinnati: South-Western Publishing Company, 1964), pp. 10-11.

[2]A. E. Klein, "Fallacies in Teaching Typewriting," Business Education World, XXXII (January, 1952), pp. 231-232.

The L-shaped desk is now available in both adjustable and non-adjustable models. This desk offers many advantages over the drop head type for rooms that must be used for other than typewriting. Although many of today's business educators are sold on adjustable desks or tables there are still differences of opinion. Individual preference, conditions, cost, and needs play an important part in the selection of typewriting equipment.

A History of Demonstration Stands in Typewriting



John Ruskin wrote: "Teaching is a painful, continued, and difficult work to be done by kindness, by watching, by warning, by precept, by praise, but--above all--by example."

It has been said many times that trying to teach typewriting without demonstrating is like trying to teach music without ever letting the student hear what good music sounds like.

The aim of teaching a skill is to get students to understand and to practice correct methods. Demonstration is one of the most effective ways to clarify the point involved or develop the action

desired. Too much explanation on the part of the teacher frequently results in confusion. Imitation is an important factor in acquiring any motor skill. A teacher should remember that it is not necessary to be able to type at a fantastic rate of speed before demonstrating. A demonstration is usually short--less than a minute. With a practiced sentence, a demonstration stand and a typewriter, the teacher can show--not tell. A demonstration stand is a must if typing is to be really taught.

Business education literature describes three classes of demonstration stands:

Upright--today our best demonstration stands are of the adjustable upright type. Along with adjustability--stability and mobility are important considerations in upright stands. The teacher should not have to worry about the machine and stand tipping. If the stand is mobile the teacher can demonstrate at the front of the room as well as to the individual student.

Table top--consist of a box or platform device placed on top of a table or desk. This type is less desirable than the upright mainly because it fails to meet the considerations mentioned above: height, stability, and mobility.

The demonstration platform--the chief advantage claimed for the platform is that the teacher demonstrates in a sitting position--a more natural position than standing. The platform also permits demonstration from the same position as the learner. Green[1] tells

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[1]Helen Hinkson Green, "We Prefer a Demonstration Platform," Business Education World, XXX (June, 1950), pp. 531-532.

us the platform has the following advantages:

1. You can demonstrate correct sitting position and posture.
2. It is possible to give more effective demonstrations.
3. More demonstrations are encouraged because the demonstrator is comfortable.
4. Platforms are simple and inexpensively constructed.

Allen,[1] a business education teacher and manufacturer of one of the first adjustable stands gives some disadvantages of platforms:

1. The possibility of injury in getting on and off the platform.
2. The fact that the chair may slip or slide off the platform causing injury.
3. Some states by law and insurance liability prohibit platforms.

He also mentions that his stand may be adjusted to sitting position if so desired. A convincing argument is given to show that the stand is better for demonstrating such things as paper insertion, carbon copies, machine parts, etc.

DuFrain[2] gives her views on possible future developments:

> Possibly at some future time, the idea of the high table for typewriting while standing may result in a modified desk for typewriting students in the schools and typists in the offices. A psychologist suggests that one way to relieve a typist's fatigue is to have the typist work part of the time while seated and part of the time while standing. The future typist's desk may be one which could readily be converted from a desk of standard height to a high table like the demonstration stand. Thus the teacher's demonstration stand, invented only to aid in demonstrating, may give us a clue to a new practice for the classroom and office.

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[1]H. M. Allen, "The Case for Demonstration Stands," Business Education World, XXX (June, 1950), pp. 532-533.

[2]Viola DuFrain, "A Demonstration Stand for Typewriting," UBEA Forum, VII (November, 1952), p. 38.

A majority of business educators today agree that an adjustable demonstration stand is best. There is complete agreement that what is really important is that some method of demonstration be used.

Today there are many excellent, adjustable demonstration stands on the market. This has not always been true. The history of demonstration stands is much like that of adjustable tables and chairs. Starting about 1947 at least two good adjustable stands appear on the scene. Prior to this time, this researcher found only one adjustable stand. A drawing of this stand is pictured in appendix B. There were a few other stands available but most of these were not adjustable or else were not suitable for demonstration purposes. Although, very few mamufactured demonstration stands were available before 1947, business educators devised some excellent ideas for providing a proper stand for demonstrating. (See appendix B.)

Smith[1] gives us a summary of the history of demonstration stands:

> Fifty years ago leading typing teachers urged typewriting demonstration tables as necessary equipment in every typing classroom. Nothing much has been done about it, simply because no adequate equipment of this kind has been manufactured by furniture supply companies.
>
> Now, as then, the solution has been up to the individual teacher. A few teachers have possessed the imagination and resourcefulness to solve this problem . . .

Some ideas that have been used for demonstration stands through the years are presented in appendix B.

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[1]Harold H. Smith, "Ideas for Demonstration Tables," The Business Education World, XX (June, 1940), pp. 910-911.

A History of Copyholders in Typewriting

This is one area, in this research, in which all agree--copyholders are beneficial to typists. Research and surveys of secretaries, stenographers and typists have shown that copy holders: lessen eyestrain, reduce neck and back ache, improve posture, promote accuracy, and increase production.

The first copyholders were guide lines drawn with a ruler. Since this time a variety of copyholders have been developed. Many have not changed considerably for many years. A number of ideas for inexpensive copyholders have developed. A number of good commercial copyholders have made their appearance on the market. One of the first advertisements for a copyholder appears in 1901. Many excellent copyholders have appeared and then disappeared because of the fact that even though there is agreement on the value of their use, teachers have not paid much attention to them. Some schools today, unfortunately, still do not use copyholders. (This statement is based on pictures taken from sources used in this research.) One big reason schools have been slow to adapt copyholders is that students are in class only a relatively short time. In this time they usually do not develop back or neck ache, and strain on the eyes begins to show only toward the end of the period. Inexpensive home made copyholders have been

so successful many schools are still using them. (Some examples of these are given in appendix C.)

Copyholders are of two main types--direct and side view. The direct view stand behind the machine and have many excellent features, such as line finders and magnifying glass attachments. This type of copyholder is still rather expensive and its use seems to be mainly in places where a great deal of typing is done. The most common place to find a direct view copyholder in a school is in the secretary's office. The side view copyholder stands at the side of the machine and requires that the head be turned to the side slightly. Side view copyholders have traditionally been placed at the right of the machine--opposite the carriage return. In recent years electric machines have become popular. Pictures appearing in professional business education periodicals and books now show side view copyholders on both the right and the left of these machines.

Green[1] found that direct view copyholders were an important factor in developing typing skill. She also found evidence that direct view copyholders are more effective and efficient than side view copyholders.

Copyholders have been available in many varieties, sizes, and shapes since 1900. Copyholder manufacturers have, rather recently, started designing copyholders for readers of books, magazines, and newspapers. The copyholder, a must for typists, now offers a convenient and practical means of holding printed matter for ease of reading.

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[1]M. Louise Green, "Do Direct-View Copyholders Help Typing Students?" Business Education World, XXXIV (February, 1954), pp. 11-12.

A History of Typewriting Erasers

Man has progressed with his writing instruments from fingers to sticks, from lumps of colored earth to brushes, reeds and feathers. Certainly, unwanted marks have appeared in all of these means of writing. With the use of pen and ink and pencils, however, man devised methods of making these unwanted marks disappear.

In a publication of The National Stationery and Office Equipment Association,[1] it is stated:

> The eraser was born, somewhat by accident, about 1850. An experimenter using a ball of crude latex from the havea tree of South America, noted that when he kneeded a ball of it and some chemicals in his hand, the hand was nicely cleaned. The name "rubber" was given to this latex as a result of the action involved in removing dirt with it. Originally, all the rubber came from South America, but monopoly prices resulted in seedlings being taken to Ceylon and other countries where rubber plantations could be developed.

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[1] How to Sell Pencils, Manual No. 12, (Washington, D. C.: National Stationery and Office Equipment Association, 1952), p. 27.

Templeton[1] provides an interesting and complete background of rubber erasers:

> . . . Oliver P. Hubbard's fine article "Two Centuries of the Black Lead Pencil," published in New England Magazine of February 1891, relates that American Stationer reprinted a paragraph taken from "Proceedings of the French Academy" for year 1752, reading: "Those who make use of pencils from lead mines in drawing architectural designs, plans for fortification, etc., resort to bread crumbs for rubbing out the pencil marks. M. Magalhaens (or Magellen) member of the Academy, proposes a more effectual and convenient method, in the shape of a piece of rubber which can be carried about and removes the marks of the pencil and all other spots which appear on the paper." This being one of the first references to the use of rubber for erasive purposes, it would seem that erasive rubbers first came into being about that time. The same article also mentions that Thomas Selden, a Philadelphia bookseller, offered a great advance on his contemporaries, in Columbia Magazine of October 1786, namely, "Black lead pencils of finest quality and India rubber for taking out pencil marks." Thus it would appear that rubber erasers were still somewhat of a rarety in America in 1786, perhaps due in large measure to their having to be imported from England and therefore costly.

In the 1870's the typewriter came into being and gained in popularity as an office tool. As in other types of writing the need for correcting unwanted marks became necessary. The typewriting eraser, of course, developed from the earlier pencil and ink erasers previously in use. Many early typists cut and shaved the regular pencil and ink erasers to sharp points so a single letter in a word could be easily removed without disturbing the adjoining letters.

Templeton[2] again provides an excellent history of typewriting erasers:

> First typewriter erasers consisted of a mixture of felt and rubber, the felt acting as an abrasive for removing

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[1]J. P. Templeton, Secretary of The Joseph Dixon Crucible Company, Jersey City, New Jersey; a letter, to this writer, containing research notes taken from "Two Centuries of Black Lead Pencils" in Dixon archives.

[2]Ibid.

> the offending letter or letters. The paper knife, too, which had earlier been used for scratching out writing in ink was also used for removing errors in typing . . .
>
> Our 1895 catalog, for the first time carries specific typewriter erasers of the longer, thinner variety, containing a mixture of rubber and pumice, with both ends of the eraser tapered . . .
>
> A few years later, there followed the so-called Disc erasers. As their name implies, these were usually rounded (some were manufactured in octagon shape), their roundness and thinness offering greater knife-edge erasing surface. These are still sold today, with or without bristles for brushing away the residue resulting from the erasure.
>
> Among later introduction of erasers specially designed to meet the needs for correcting typing errors are both wood-case and paper wrapped rubber core pencils. Due to its greater ease of sharpening, we discontinued some time ago the wood-case in preference to the paper wrapped type.

Typewriter erasers come in a variety of colors and shapes. The typewriter eraser most commonly used is the circular model with a metal or plastic disk on the sides for extra support. A brush-attached typewriter eraser is perhaps the most popular. The brush is used to wisk the particles from the paper and machine. Typewriter repairmen tell us if these particles are allowed to fall into the working parts of the machine, they soon cause the keys to stick, and other parts of the machine to gum-up. One of the first typewriter erasers advertised in business education periodicals was the FybRglass eraser. This eraser has been advertised for over thirty years at the same price. The pencil type eraser with brush on one end is very popular. It can be easily sharpened in a pencil sharpener, is easy to use, and can be carried like a pencil. Electric erasers are available, but are used mainly by draftsmen and others with a great deal of erasing and cleaning to do. Fluid ink removers

are sometimes used to correct typing errors, but usually take more time to use than erasers.

The latest thing in correcting typewriter errors is correction paper which contains a white substance on one side for originals or a coated substance on one side for carbons. This material is then inserted in the typewriter at the point of error--white or colored side facing the paper. By striking the same key which made the error the mistake is obliterated. The correction paper is then removed and the correct key struck--very little trace of the error is left. This is one of the easiest and fastest ways to correct typing errors. Some typists erase lightly and then use correction paper. This product has been on the market about ten years. It is predicted that this product will soon become the most popular way to correct typing errors.

For many years erasing was not permitted by typewriting teachers. They felt it interfered with correct techniques, promoted carelessness, inaccuracy, and students could not study errors. The problem of grading erased work was another worry.

As time passed it was found erasing was a definite requirement for all typists. Students who graduated and could not correct errors in the office situation certainly did not please employers. This fact plus the demand for personal typewriting brought the schools to recognize that erasing must be taught. It was found erasing takes time and this was a penalty students must pay for erasing an error. Blackstone[1] conducted a study in which one class was allowed to erase

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[1]E. G. Blackstone, "An Experiment with Erasing in Typewriting," (Vol. V, Iowa Research Studies in Commercial Education, 1928), pp. 158-165.

and one class was not allowed to erase. He found the class using erasers was typing more rapidly and more accurately. The required use of the eraser caused students to try for greater accuracy so they would not have to take time to erase.

Klause,[1] in a study at Reno, Nevada, High School, had similar results. She said, "Use of an eraser in tests seemed to ease tension."

When should erasing be taught? This has been the question in the minds of typewriting teachers since around 1930. Before this time use of an eraser in a typewriting class brought frowns from typewriting teachers. The question they used to ask each other was: "What do you do to keep students from erasing?" As the use of the eraser became accepted in typewriting rooms some typewriting teachers went from one extreme to the other and believed the eraser could be used from the first week on.

Most authorities today believe the best time to present erasing is when students first apply their skill to problem typewriting or shortly after. Since all typists occasionally make errors, good erasing technique is a skill every typist must have. Erasing must be taught and demonstrated.

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[1]Mildred Klaus, "A Study of Erasing in Typewriting, Part II," The Journal Of Business Education, XI (May, 1936), p. 21.

A History of Music and Rhythm in Typewriting

The area of music and rhythm in typewriting has had more mis-understanding and confusion than any other area of typewriting.

The history of music and rhythm starts with the early typewriter demonstrators, about 1888. They demonstrated and analyzed their skill in such a way as to give the impression that they used perfect metronomic rhythm. In the late 1890's teachers began introducing devices for developing rhythm. One of the first such devices was the oral dictation method. Later devices were the "slapstick" method--tapping of a ruler or pencil, the counting method, the metronome, and about 1914 the use of the Victrola. Many other devices were developed such as the dictaphone, an electric metronome and a motor driven device with a hammer that trips on a sounding board. (A device of this type was found, by this writer, packed away in a closet in a typewriting room.) The development of these many devices was the

result of years of teaching typists who were troubled by jerky stopping and starting and a lack of rhythm.

The idea that rhythm in typewriting is metronomic (a set pace with equal time intervals between all strokes) persisted in the minds of typewriting teachers for many years. As metronomic rhythm was proven to be a fallacy the typewriting profession found it hard to believe.

Between 1915 and 1925, Lahy, Wiese and Coover[1] found that the use of metronomic rhythm was to be questioned. By using various machines they found the actual time taken to strike the various keys was not the same. In referring to metronomic rhythm Lahy concluded that students who type rhythmically will not be fast typists.

In 1928 Entwistle[2] conducted two studies using rhythm and non-rhythm groups. His conclusion was that rhythm failed to prove its value in his study of typewriting.

After the Entwisle study many articles appear either for or against the use of rhythm in typewriting. Most of these writers failed to give a clearly defined definition of what was meant by their concept of rhythm. Much of the controversy about rhythm in typewriting was largely a disagreement over terms.

Smith[3] in a series of articles on fallacies of metronomic

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[1]Blackstone and Smith, Improvement of Instruction in Typewriting, p. 149.

[2]Benjamin S. Entwisle, "The Effectiveness of Evenly Timed Strokes in Learning Typewriting," (Unpublished Master's Thesis, State University of Iowa, 1928), p. 48.

[3]Harold H. Smith, "Metronomic Rhythm in Typing Found to be a Fallacy," The Business Education World, XVII (December, 1936), pp. 276-281.

rhythm reports on findings of his study with a rhythm machine constructed for him by Remington Rand, Inc. As a result of his studies he concluded that over emphasis upon metronomic rhythm is detrimental to typing skill, particularly to speed.

In the decade of the 1930's many teachers were actually at a loss to decide just what rhythm in typewriting was, or if music and rhythm should be used at all. By the late 1930's the writings in the professional business education publications point out that metronomic rhythm has only very limited use in teaching typewriting. Many definitions are then given for rhythm in typewriting. Such terms as flowing, continucus, rippling, true and proper rhythm stress that rhythm means a continuous movement of the carriage, rapid typing of easy-letter sequences and a slower, more careful typing of difficult combinations.

What were some of the objectives sought through the use of metronomic rhythm? The objectives sought seem to be: (1) the avoidance of rushing--to type under maximum speed cutting down on errors, and (2) the ability on the part of the student to type with evenness as it was taught for the purpose of reducing key piling and jerkiness which resulted in taking eyes off the copy and other faults.

Today music and rhythm still have a place in the classroom, although this use is not as extensive as it once was. The electric typewriter with its even touch has automatically replaced the objective of many early devices, which was even touch. All teachers, today, try to develop "proper" rhythm. Records and tapes are used today in teaching typewriting mainly for the following reasons:

1. For students who need to write more slowly.
2. For the slow pupil who needs extra practice.
3. For pupils who have missed classwork.
4. At the beginning of a period to get class interest.
5. For the development of correct habits during the first few days.
6. For adding variety to class routine. A general boost in morale. (The use of music is interesting, if limited in use.)
7. For use in emergency situations.

The following brief chronological listing is presented so that the reader may get an idea of some of the different trends of thought through the years on the use of music and rhythm in typewriting:

The Use of Music in Typewriting Instruction--A Chronology

Date	Source	Item of Information
1914	1	Cadence in Typewriting--Miss Olive Bracher of Spencerian in Cleveland, Ohio says, "cadence is a regularity and uniformity of pace. This is the secret of speed and proper development in the art." In her teaching, each letter and space is given the same length of time whether easy or difficult. She spells out words and asks they be written as she spells. This is carried on to letters and other production work.
1915 to 1918	2	E. G. Wiese and J. E. Coover did some experimental work in the psychology laboratory at Stanford University. They found a variation in time for stroking different letters which actually disproved metronomic rhythm.
1921	3	Miss Emma Dearborn gave an interesting and valuable demonstration of her method of using the Victrola in teaching rhythm.
1921	4	Mr. Dorey, of the Education Department of the Columbia Graphophone Company illustrated the application of the graphophone to the teaching of rhythm in typewriting . . .

CHRONOLOGY--Continued

Date	Source	Item of Information
1921	5	Investigation has shown that the dictaphone has assumed a permanent place in business. Permanent indestructible practice records may be purchased from the Dictaphone Co.
1921	6	Champions strive to write with as perfect a rhythm as possible. They do not try to speed up on small words.
1924	7	Rupert P. SoRelle and Harold H. Smith discussed and demonstrated the various uses of Rational Rhythm Records in connection with the teaching of typewriting. Reaching and touch drills, rhythm drills and rhythmic writing on all kinds of material, as well as the teaching of such complex processes as shifting and striking capital letters at the same time received attention.
1924	8	The latest advance in the teaching of typewriting consists in the emphasizing of rhythm. Correct rhythm is the foundation of expertness in typewriting; without it no high degree of skill is attainable . . . The gramophone method and the Rational Rhythm Records have achieved immediate popularity wherever they have been demonstrated, and already a great number of schools have installed them. It is indeed true that in these days the teaching of typewriting has been reduced to a science.
1924	9	J. M. Lahy devised a machine to measure time taken to strike various typewriter keys. He concluded that if metronomic rhythm is used you will not be a fast typist.
1925	10	Tramp, tramp, tramp, the boys are marching, Dixie, and other tunes were used to illustrate the value of music in the teaching of typewriting. Although this is somewhat of a new phase of teaching this art, its practicability and effectiveness has been thoroughly demonstrated. Increased enthusiasm, greater output, and more accurate typewriting are some of the results obtained by the use of the Rational Rhythm Records.
1926	11	Phonograph Rhythm Drills Speeds the Work and Enthusiasm--It is essential that an even, continuous touch and even time be developed harmoniously . . . This can be accomplished by requiring the class to write to the time of

CHRONOLOGY--Continued

Date	Source	Item of Information
		counting or to music. There is no question but that the Victrola has become a permanent factor in every typewriting department . . .
1927	12	Many schools use the metronome or musical records for promoting rhythm . . .
1928	13	A cooperation Experiment with Rhythm in Typewriting was discussed through charts and diagrams by Benjamin S. Entwisle, Experimental High School, University of Iowa. The pivotal point of his discussion was a graph to show that in two classes of forty each a higher peak was reached by that group ignoring rhythm than by the other group giving particular attention to rhythm . . . Rupert SoRelle then cited facts as reported by thousands of teachers who by actual experience have greatly increased both the efficiency and the accuracy of their pupils by emphasizing the value of rhythm. He said that the whole purpose of rhythm in typing was to develop smooth, accurately-timed stroking, which in turn made for evenness of touch, accuracy, and greater output . . .
1930	14	It is astonishing to learn from time to time that in many commercial schools and departments typing is not taught to music--that there are teachers, even in this progressive age, who, even yet, seem to think of typing as strictly a vocational subject and nothing else. For these, a visit to a typing room equipped with more important things in mind, would prove interesting and profitable . . .
1934	15	British psychologist, D. W. Haring found there is a positive relationship between the ability to type rhythmically and the individuals capacity for speed.
1934	16	Mass drill should be used sparingly in typewriting.
1936 & 1937	17	Using a rhythm machine on a number of expert typists the conclusion was that perfect metronomic rhythm does not exist in typing.
1938	18	Miss Poulson, world's amateur typewriting champion was asked "Do you type with rhythm?" Her reply "no." "What I do is use continuity in my writing. There are certain combinations of letters that can be written faster than others" . . . (1) The definition of rhythm as applied to

CHRONOLOGY--Continued

Date	Source	Item of Information
		typewriting has undergone a significant change. It no longer means, in any sense, a metronomic, lock-step teaching device. (2) "Rhythmic writing," so long cherished by the speed typists as one of the secrets of their typing skill, is no longer accepted as a factor of basic importance. (3) The teaching of rhythm in the classroom has proved to be a time-wasting procedure. (4) An effective typewriting teaching technique must be substituted for what typewriting teachers long thought "Rhythmic writing" accomplished . . .
1939	19	The subject of rhythm in typewriting has long been a favorite battleground for typewriting teachers. Many present teachers learned from teachers who emphasized rhythm and today they use many of these devices . . . In spite of all this use of rhythm devices, many typewriting teachers for a long time have felt somewhat uncomfortable about the whole matter of rhythm in typewriting.
	19a	Since 1915, when it was suggested that dance and march records be used for rhythm purposes in order to develop greater typing skill, (Eastern Commercial Teachers Association Convention) many champions have come and gone. A few of the fashionable ideas about rhythm have come and gone, too. Some teachers became bewildered about it all, and decided to have nothing more to do with rhythm devices of any kind. Some of these still may have some value.
	19b	. . . the greatest obstacle to the newer idea of flowing rhythm or fluency has been the conviction held by many teachers, based on their experiences with students, that metronomic rhythm has been of real benefit to their students up to a certain point . . .
1950	20	One of the undeniable facts established by experimentation and research in the field of typewriting instruction is that the expert does not type with metronomic rhythm.

CHRONOLOGY—Continued

Date	Source	Item of Information
1960 to 1966	21	Experience shows that we should type the easy words, the two-hand or balanced-hand words, rapidly. We think of the words, not of the individual letters, as we type. This practice is known as typing by word-recognition response. We should, on the other hand, type the difficult words, the one-hand words, slowly. Moreover, we should mold the two rates together into a flowing or variable rhythm pattern. The result will be far from a metronomic stroking pattern, but it will be a rhythmic pattern, nevertheless.

Numbered Source References for Chronology

[1]Hubert A. Hagar, "Report of the Missouri Valley Commercial Teachers' Association," The Gregg Writer, XVI (January, 1914), p. 260.

[2]Blackstone and Smith, Improvement of Instruction in Typewriting, p. 149.

[3]"Report on Typewriting Session of National Association of Accredited Commercial Schools," The American Shorthand Teacher, I (February, 1921), p. 188.

[4]Guy G. George, "Report of Conventions of Commercial Teachers Associations--Connecticut Report," The American Shorthand Teacher, I (April, 1921), pp. 254-255.

[5]William Bachrach, "Classroom Instruction on Modern Office Appliances," The American Shorthand Teacher, I (June, 1921), p. 321.

[6]William F. Oswald, "More and Better Typewriting," The Gregg Writer, XXIV (September, 1921), p. 31.

[7]Harold H. Smith, "The Regional Gregg Convention Report," The American Shorthand Teacher, IV (May, 1924), p. 353.

[8]Editorial, "Reduced to a Science," The American Shorthand Teacher, IV (June, 1924), p. 420.

[9]Blackstone and Smith, Improvement of Instruction in Typewriting, p. 149.

[10]A. A. Bowle, "Report on Gregg Regional Conference," The American Shorthand Teacher, V (March, 1925), pp. 204-205.

[11]Ruth Lawrence, "Teaching Typewriting," The American Shorthand Teacher, VI (June, 1926), p. 392.

[12]Louise A. DeMoore, "The Teaching of Typewriting," The American Shorthand Teacher, VIII (September, 1927), p. 22.

[13]W. D. Wigent, "Report on Iowa Research Conference on Commercial Education," The American Shorthand Teacher, VIII (June, 1928), p. 356.

[14]Annabel Crum, "Typing to Music," The American Shorthand Teacher, X (June, 1930), p. 378.

[15]Harold H. Smith, "A Ray of Light on Typing Rhythm," The Business Education World, XIV (January, 1934), p. 257.

[16]Harold H. Smith, "Common Sense in Typewriting," The Business Education World, XIV (June, 1934), p. 632.

[17]Harold H. Smith, The Business Education World, XVII (December, 1936 to March, 1937), (A series of four articles on rhythm in typewriting.)

[18]Arnold E. Schneider, "Streamlined Rhythm," The Business Education World, XVIII (March, 1938), pp. 536-537.

[19]William R. Odell, "Rhythm and Patternism in Typewriting," The Business Education World, XIX (March, 1939), pp. 537-539.

[19a]Ibid., p. 540. (William R. Foster discusses Odell's article.)

[19b]Ibid., p. 542. (Harold H. Smith comments on 19 and 19a.)

[20]Sherwood Friedman, "When to Use Unison Drills in Typing," The Business Education World, XXX (April, 1950), p. 414.

[21]Russon and Wanous, Philosophy and Psychology of Teaching Typewriting, p. 196.

A History of Keyboard Charts in Typewriting

The keyboard chart, familiar to all teachers of typewriting, has been with us as long as typewriting has been taught. The chart even though used only during the first weeks of typewriting is found in most typewriting rooms.

The first disagreement in teaching typewriting was on the best way to operate the machine. Should typewriting be taught by sight or by touch? It was not until 1900 or after that authorities agreed on the superiority of using all eight fingers and control them by touch. By this time the modern keyboard arrangement and the diagonal zone fingering system now in use were coming to be considered the best. With these problems more or less solved, the next step was the development of approaches for teaching control by touch.

The first approach that was used was called the "whole" or "mental" approach. In this method individual keyboard charts were used as it was believed the mental visualization of the keyboard helps the student to establish control of the reaches more quickly than they otherwise would. The "whole" approach is based on the belief that a learner must memorize the location of keys on the keyboard so he can visualize in his mind the picture of the keyboard and thus direct his fingers to the correct keys without looking at the keyboard. Before 1930 many devices and means of memorizing the keyboard were popular. The second approach used is referred to as the "part" or "physical" approach. This is a more recent approach and has many variations. This latter approach believes letter reaches are automatized through

the practice of using the key. This is thought of as automation of finger movements without special mental effort.

In their efforts to develop typists who typed by touch and do not look at the keys, blank keys have been used in teaching typewriting. Along with the blank keys a large keyboard chart was used to teach key locations and reaches. The student was to get a mental picture of the keyboard from viewing the chart. Opponents of the chart say that the student can not get an accurate picture of the typewriter keyboard because the chart is bigger than the keyboard and gives the impression the keys are on the same level.

Early emphasis was put on filling in blank keyboard charts. Some teachers felt a student should not begin to type until the chart could be filled out from memory. It was then found that in the learning stage the beginner could get a better picture of the locations of the keys and the keyboard by actually looking at the keys and the keyboard. Today the typewriting teacher points out the location of the key on the typewriter through demonstration and probably points to it on a chart and then has the student find the key on his machine and type several lines by actually looking at the keys. This requirement of looking at the keys is to help develop a clear picture, but is not used long enough to develop a habit of looking.

In reviewing the literature on keyboard charts very little appears about them after 1930, with the exception of how to construct one for classroom use. Barnhart[1] was one of the most severe critics

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[1]E. W. Barnhart, "The Psychology of Learning Applied to Typewriting," The American Shorthand Teacher, II (January, 1922), pp. 181 & 191.

of wall charts when he stated they hindered progress:

> All these charts, and visualizing processes put an obstacle between the stimulus and the reaction; for the stimulus must now first recall the chart, and then the place of the letter on the chart. This is not touch typewriting, but a sight method of seeing the letter before you hit it. The true touch method calls for no intermediary between the sight of the letter and the proper finger action. Eventually the chart method results in a stimulus-reaction method, so why not teach the direct stimulus-reaction method from the start? Ask any experienced typist the location of a given letter on the keyboard and see if she does not locate it by finger movement and not a visualization of the keyboard.
>
> Words actually fail one when he sees a chart with certain rows printed in colors with pictured fingers colored to correspond. The only thing left to do is to ask whether the children in that school come with their fingers naturally colored to that chromatic scale, or whether the teacher had to color them each day. One sometimes expects to have a teacher ask what brand of colors would be best to use.

It did not take long before the chart was defended. Canavello[1] gives the following answer to Barnhart's criticisms:

> . . . He insists that the stimulus must be visually received from the printed letter of the copy and react directly as a motor impulse. Now explain the fact that a typist can type equally well from oral dictation where the stimulus is received through the hearing sense? . . .
>
> A fundamental proposition of touch-typing is that the keys shall not be watched, in order that the eyes may be exclusively devoted to the copy. There is a srong tendency to look, and this habit once formed is difficult to break. Why not watch the chart? Like the map which makes the geography lesson clearer, the chart provides a simple, effective means for visually impressing upon the beginner's mind the design of the keyboard, while avoiding the "key watching" habit by diverting attention from the keys . . . The mind must be vividly impressed by simple, tangible means. . . . Sense of location and direction is developed principally by sight impressions. . . .The Novice needs every possible aid. . . . Though he speaks of the learner,

---

[1]Robert Canavello, "In Defense of the Chart," The American Shorthand Teacher, II (April, 1922), pp. 301-302.

> Mr. Barnhart clearly has in mind the experienced typist--any experienced typist when asked to locate a given key will do so by finger movement. But the chart is intended for use by the inexperienced. . . . The mental photograph of the keyboard produced by study of the chart eventually fades when motor habits are established. . . . Quickness of learning depends on vividness of the mental picture. . . .

The subject of charts was again discussed at a business teacher's meeting in Yonkers, New York:[1]

> The use of typewriter charts in the classroom was advocated, by John J. Whalen, Yonkers High School of Commerce, as allowing the students something to look at to keep their eyes a long way from the machine. "This is a great aid, as it keeps the students eyes at sufficient distance from the keyboard so that the temptation of looking at the keys is practically eliminated."
>
> Charts were denounced, by Mark I. Markett, New York High School of Commerce, as being contrary to that which the student encounters in practical work.

Very little attention was given to the chart for a number of years in typewriting literature. In 1937 the Louis Keyboard Chart was copyrighted--it had a set of hands and reversible discs that look like typewriter keys. In 1941 Smith[2] gives some views on the "whole" method when he says:

> . . . The "whole" method approach has often been criticized because, it is asserted, this method of learning the keyboard as a whole results in visualization of the keyboard, which is supposed to act as a major inhibition, a detriment to the more essential learning of the reaching and stroking motions.
>
> Experience has shown that criticisms founded on theory alone are not necessarily sound. Actually, I know many excellent typists who first memorized the keyboard. This enabled them to save time in their early practice, because

---

[1]A. A. Bowle, "Report of New York Commercial Meetings--Yonkers Meeting," The American Shorthand Teacher, V (February, 1925), pp. 181-182.

[2]Harold H. Smith, "Comments on a Classroom Visit," The Business Education World, XXII (October, 1941), p. 155.

they instantly knew approximately where to find any desired character. Such beginners naturally make many more learning efforts in a given period of practice than students who must grope and wool gather between learning efforts. They learn faster and better--theorists to the contrary.

A final comment on the chart was made by Klein:[1]

Fallacy No.7--Give Every Student a Keyboard Chart--The student using a chart, whether it be one at his desk or the large one in front of the typing classroom, frequently does not try to remember the key locations; consequently, he becomes dependent on the chart. Even if he does finally learn the key locations, it takes him much longer to accomplish this with the chart than it does without it. A totally unnecessary step is added to the learning process. Instead of thinking directly of the key locations, the student must first find the key on the chart and then determine its position on the keyboard.

The chart is a necessity only when the student is forbidden ever to look at the keyboard. If permitted to look directly at the keys in the manner and under the circumstances described before, the chart is no longer a necessity.

Today it is rather well accepted that no matter what your views on the chart; they serve their best purpose in connection with explanations the teacher gives relative to keyboard learning.

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[1]A. E. Klein, "Fallacies In Teaching Typewriting, 7-8," Business Education World, XXXII (December, 1951), p. 184.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This study traces a brief history of the following typewriting equipment and teaching aids: (1) Adjustable tables, desks, and chairs. (2) Demonstration stands. (3) Copyholders. (4) Erasers. (5) Music and rhythm devices. (6) Keyboard charts.

This limited study does not attempt to say that at a certain year or decade typewriting equipment and instruction was at such and such a point; but it does attempt to show certain trends and high points of the history of these areas of typewriting.

Adjustable Tables, Desks, and Chairs

Adjustable chairs have been available since the first typewriter was marketed. These were not always easy to adjust, however. Early typewriters were placed on sewing machine stands. Typewriting teachers knew that there was more to creating a desirable typing situation than merely placing a typewriter on a table, pushing up a chair, and going to work. Yet this is the way the average typewriting classroom has been set up. Although many felt the accepted height of 26 inches was too low for typewriting desks or tables, very little was done about it until 1942. In this year the Department of Agriculture conducted a study of typewriter height in relation to posture. In 1945 the United States Navy published results of a similar study. After World War II

materials again became available to manufacturers that were previously devoted to the war effort. These three factors led to the marketing of adjustable desks and tables shortly afterwards.

Today manufacturers are trying to simulate an office atmosphere in designing desks, tables, and chairs. L and Z-shaped desks are being developed to give the student the advantages of adequate space and working levels. Seat, desk, and machine may be placed in the same work position as an office desk arrangement, enabling the business teacher to set up a laboratory with a professional atmosphere.

Demonstration Stands

Many teachers feel their greatest single aid in the typewriting classroom is the raised demonstration typewriter. The importance of demonstration stands has been apparent to typewriting teachers for many years. A very limited number of adequate demonstration stands was manufactured before 1946. This has left the problem of what to use for a demonstration stand more or less up to the individual teacher. Some excellent demonstration stands have been devised and used by typewriting teachers.

Today equipment manufacturers provide some excellent demonstration stands, however, many schools use some type of homemade stand. There is general agreement that a demonstration stand should be in every typewriting room.

Copyholders

Many good and some inadequate copyholders have been invented and marketed since 1900. Many of the copyholder manufacturers failed financially, even after advertising campaigns, for two main reasons: (1) Neither schools nor offices have paid much attention to the recommendations of competent authorities about such devices, and (2) often the simplest devices are the most effective. A piece of string with a button or block of wood tied to each end may work as well as a manufactured copyholder.

Copyholders have been found to be important factors in developing typing skill. There is considerable agreement that copyholders are valuable in reducing eyestrain and improving posture.

There are two classes of copyholders. These are known as direct and side view copyholders. Research reveals the direct view copyholder is probably the more effective of the two. Popular use favors the less expensive side view holder.

Erasers

It has been said that today the typewriter, a pencil, or a pen is man's first tool for any job. If this is true, then the eraser would surely be his second tool. There is an eraser designed to remove almost any incorrect mark made by a typewriter, pencil, or pen.

Typewriter erasers, of course, stem from the earlier pencil and ink erasers previously in use. Early typists cut or shaved the sides of regular pencil and ink erasers to suit their purposes for removing a single typed letter. Eraser companies then followed suit

by tapering the ends of erasers. Later the disc-eraser, which is still sold today, became very popular. Erasers then came with or without brushes for brushing away erasure particles. Erasers that may be sharpened in ordinary pencil sharpeners are very popular today as are the disc-type.

Among the latest developments in correcting typing errors are the electric eraser and correction paper. Correction paper, which has appeared on the market in the last ten years, is very popular. It may be used with speed and ease.

Music and Rhythm Devices

World War I proved a need for typists. Some new methods of mass teaching developed around this time. Some of the methods developed were dictating (letters, strokes, phrases, etc.), tapping out strokes--often called the "slapstick" method, and the phonograph record. Teachers adapted these methods without careful observation of their limitations. The result was a misinterpretation of rhythm in typewriting by teachers and others. The late 1920's and the 1930's saw a change in thinking as to what type of rhythm should be developed in typewriting. Some teachers became bewildered by all the confusion over rhythm and decided to have nothing to do with it.

Today proper rhythm in typewriting is thought important in achieving a high degree of skill in typewriting. Easy and difficult words are typed at different rates. These two rates are then combined into what is called a flowing rhythm. ". . . And now the smooth typewriters click in every office, mart and den . . . (See page 3.)

Keyboard Charts

Today there is total agreement that the best way to operate a typewriter is by touch. In the early 1900's when this idea was becoming well accepted, beginning typewriting was taught through the use of charts. Some teachers had students memorize the keyboard and fill out individual keyboard charts before actual typing began. This idea was replaced with a newer idea that by striking the keys, and with practice, finger movements became automatic. The large keyboard chart is used today as a visual aid by the typewriting teacher while presenting new keys. Many business educators today do not use a keyboard chart.

Conclusions

1. Typewriting teachers have displayed a great deal of imagination and resourcefulness in developing demonstration stands and copyholders.

2. A good adjustable demonstration stand is a must for all typewriting classrooms. Although a good demonstration stand may have a high initial cost, the money invested is well worth it in terms of benefits.

3. Music still has a place in the typewriting classroom, although its use is limited.

4. Many typewriting classrooms are in need of some equipment revisions.

5. L-shaped adjustable desks are ideal for todays typewriting as well as other business class rooms--especially with electronic laboratory equipment becoming more important in schools today.

In view of the findings in this study, these recommendations are made:

1. To assist the student maintain good posture, and avoid eyestrain during the typing period, some sort of copyholder should be provided.

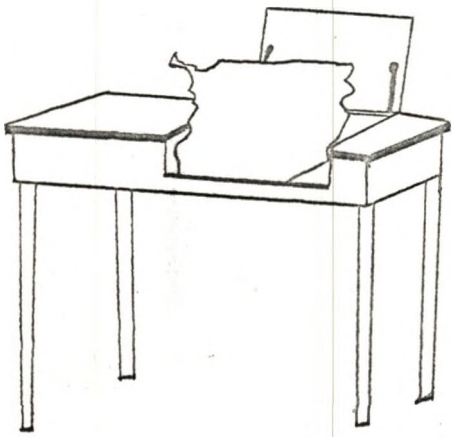
2. Teachers should explain and demonstrate proper position and hand slant so students will know how to make use of adjustable equipment.

3. Erasing should be taught and demonstrated in typewriting classes.

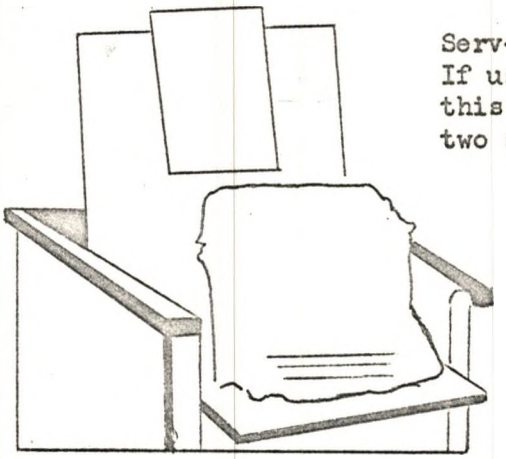
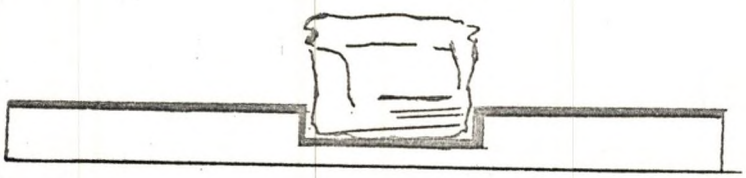
4. As times change conditions change and as such the typewriting teacher should at least be familiar with new types of equipment and teaching aids.

APPENDIX A

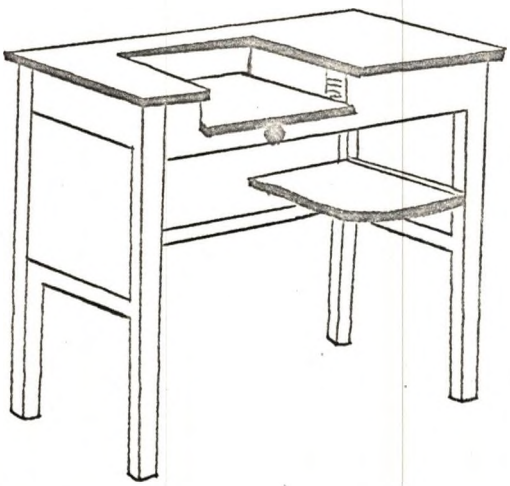
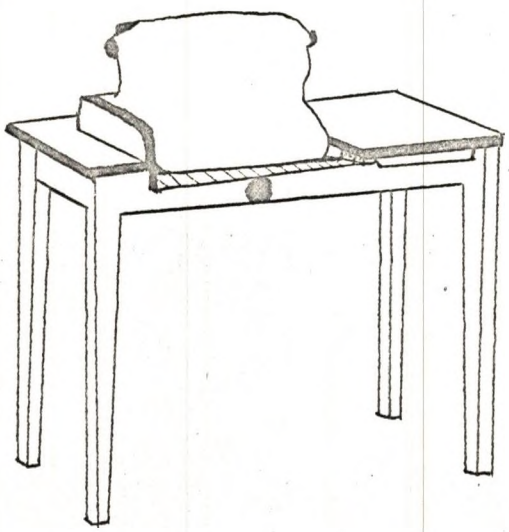
A Pictorial Chronology of Some Different Typewriting Tables and Desks

Date	Pictures	Comments and References
Late 1920's		Adjustable--but took time to adjust. Manufactured by American Seating Company, Chicago, Illinois. The Journal of Business Education, II (January, 1930), p. 43.
1928		This typewriter desk was manufactured by Fritz-Cross Company, St. Paul, Minnesota. The Business School Journal, I (December, 1928), p. 27.
1936		This was a homemade typewriter table. The typewriter is placed on the lower section and the students book on the higher section. L. O. Culp, "Modern School of Commerce," The Business Education World, XVI (May, 1936), p. 705.

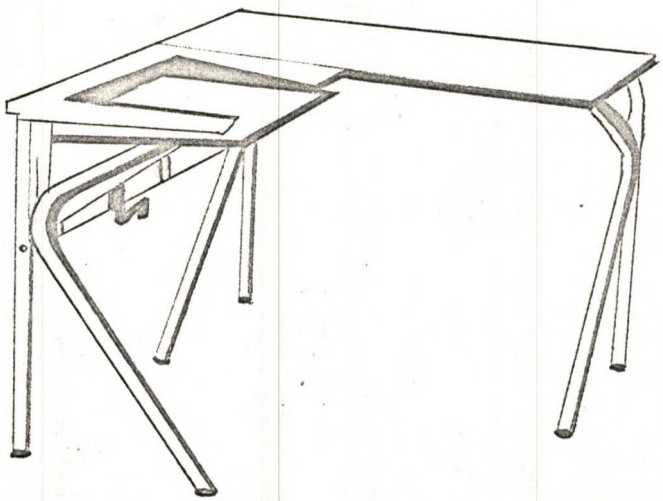
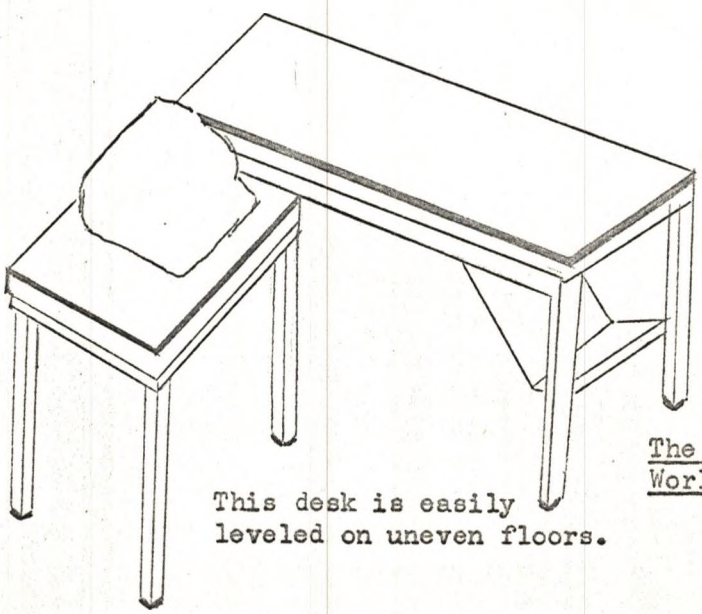
APPENDIX A--Continued

Date	Picture	Comments and References
1939		Serv-U-Well patented desk. If used for another class, this desk has openings for two students. Archibald Alan Bowle, "On The Lookout," The Business Education World, XIX (January, 1939), p. 428.
1944		This picture shows a different idea for long tables. The Business Education World, XXV (September, 1944), p. 54.

APPENDIX A--Continued

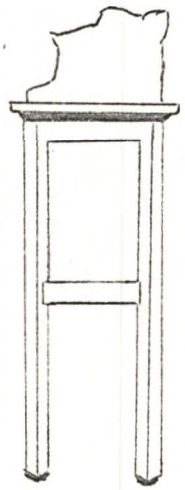
Date	Pictures	Comments and References
1947		The Hammond Sales Company, Hammond, Indiana, was the manufacturer of one of the first adjustable desks. (These are easily adjusted by turning the round knob in front of the desk.) The Business Education World, XXVII (May, 1947), p. 499.
1949		A picture of the Hammond Economy Model. This advertisement states: "In the past two years over a thousand high schools and colleges have adapted our adjustable desks." The Business Education World, XXX (September, 1949), p. 15.

APPENDIX A--Continued

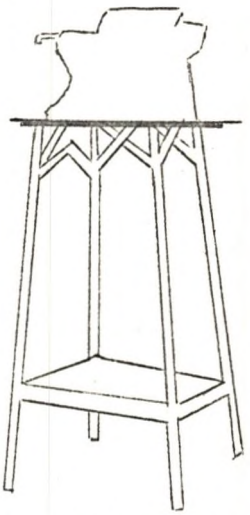
Date	Pictures	Comments and References
1966		A modern L-shaped work station. These desks are suited for us in all types of business courses. Cramer Catalog 62D, Cramer Industries, Kansas City, Kansas.
1966		This picture shows an adjustable L-shaped work station. The Business Education World, XLVI (March, 1966). This desk is easily leveled on uneven floors.

APPENDIX B

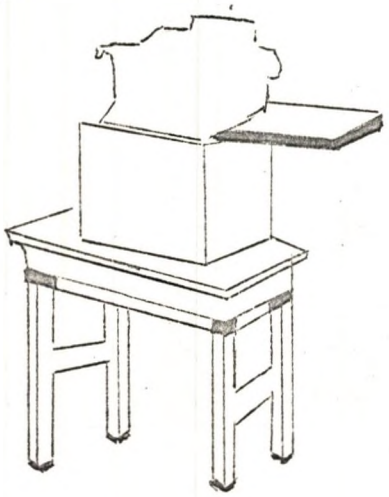
Typewriter Demonstration Tables



Designed and built by Indiana State Teachers College, Terre Haute. The typewriter rests on a turntable.



General utility metal table designed and built at the high school--Hanover, Pennsylvania.

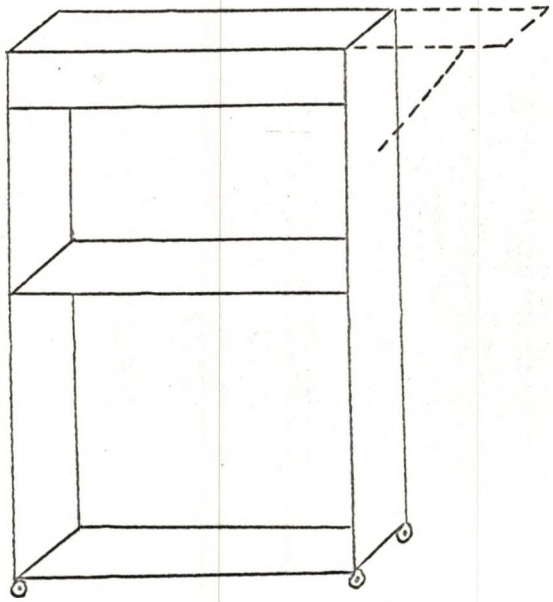


Gregg College hollow box.

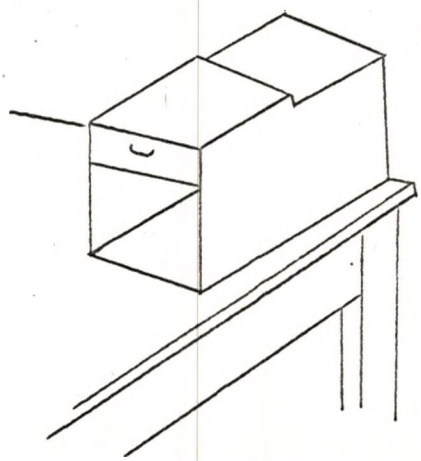
Collapsible, portable table--Miss Eleanor Skimin, Northern High School, Detroit, Michigan.

APPENDIX B--Continued

Ideas for Constructing a Demonstration Stand

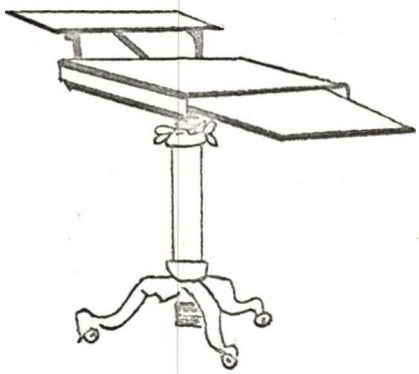


The lack of a regular manufactured demonstration stand should not keep a teacher from having one. These stands are movable to any place in the room.



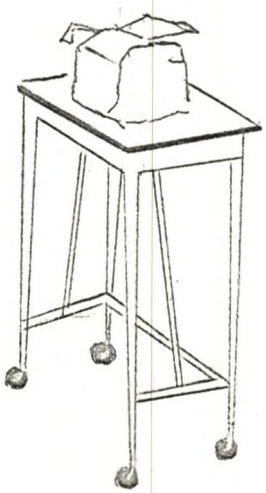
APPENDIX B--Continued

One of the First Advertised Demonstration Tables



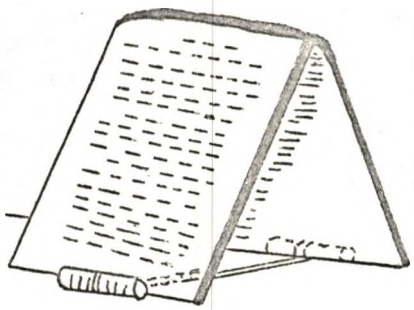
Today this stand still has thousands of satisfied users.

One of the Present Advertised Demonstration Tables

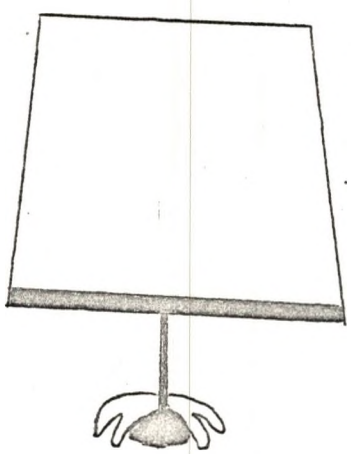


APPENDIX C

Ideas for Constructing Copyholders



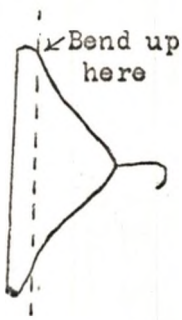
An inexpensive and satisfactory copyholder may be made by tying two small blocks of wood together with string or twine. Buttons and paper clips are sometimes used instead of blocks of wood.

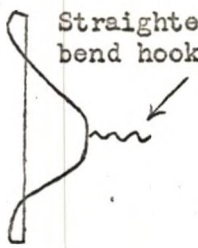


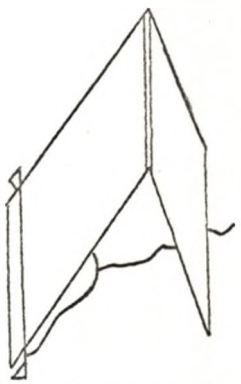
A music stand may be used for holding book, notebook, loose papers, music, etc. These stands are easily adjustable. (Page eight has another idea for using a music stand as a copyholder.)

APPENDIX C--Continued

A Copyholder Made From a Coathanger

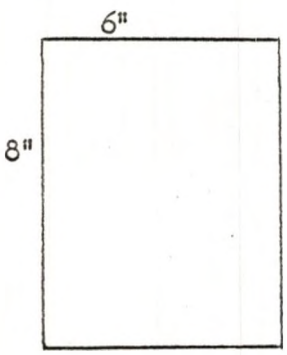




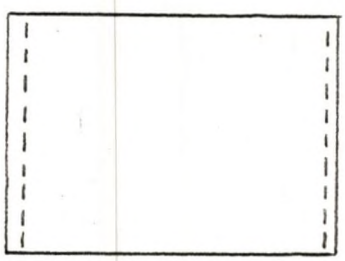


Finished copyholder

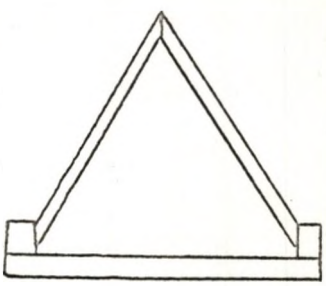
A Copyholder Made With Wood



A flat piece
of wood



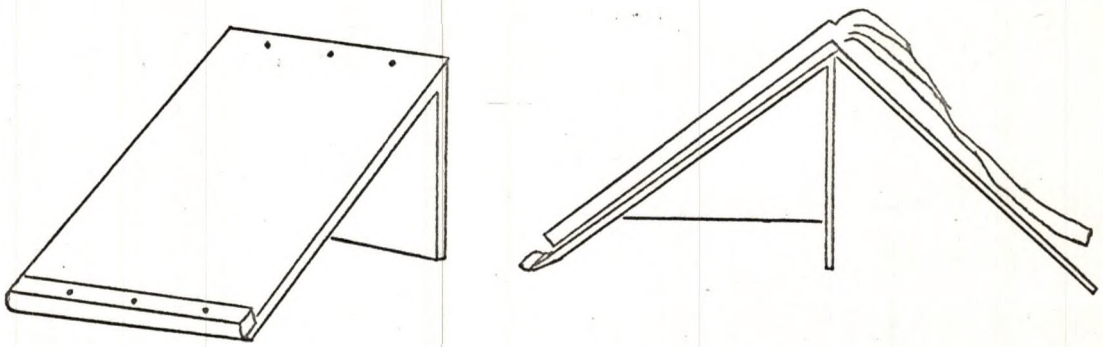
Nail a small strip
on each end



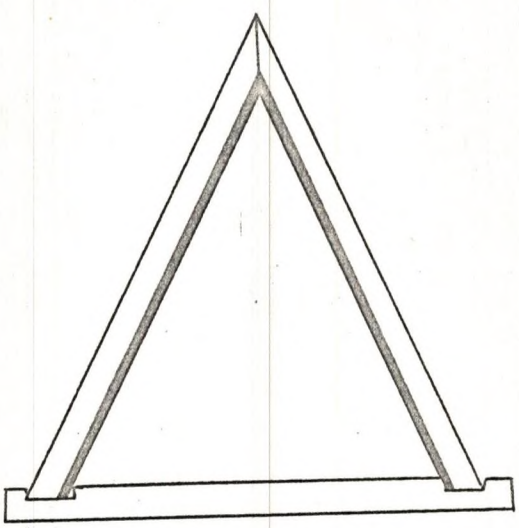
Place book on
copyholder

APPENDIX C--Continued

A Sturdy Wood Easle



This is a very effective copyholder for a typewriting textbook.



A Copyholder Made From a Shoe Box Cover

APPENDIX D

Research Studies in Typewriting From 1904 to March 1963[1]

Adjustable Tables, Chairs, and Demonstration Stands

Dale B. Hamann, "Physical Facilities, Equipment, and Layout of the Typewriting Classrooms in Ten New High Schools in California Bay Area," Thesis, MA, San Jose State College, 1952.

Harold H. Smith, "A Study of Typewriter Height," Business Education World, 26:142, November, 1945.

"A Study of Typewriter Height," General Research Committee, Society for the Advancement of Management, New York, 1945, 12 pages.

Copyholders

Louise M. Green, "Do Direct-View Copyholders Help Typing Students?" Business Education World, 34:11-12, February, 1954.

Vance T. Littlejohn, "Relationship Between Selected Degrees of Angle of Elevation of Typewriting Copy and Ocular Fatigue in Typewriting," Dissertation, Doctor of Philosophy, University of Pittsburgh, 1948, 286 p. (Psychological Abstracts, 24:184, 1950).

Alma Stace, "A Study of the Use of Line-a-Time in First Year Typing Classes," Thesis, MA, University of Michigan, 1952.

Erasing

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