

A STUDY OF THE AMOUNT OF TIME DEVOTED TO CERTAIN CLERICAL
TYPEWRITING DUTIES PERFORMED IN SELECTED BUSINESS OFFICES
IN MONTGOMERY AND ROANOKE COUNTIES WITH IMPLICATIONS FOR
OFFICE TRAINING PROGRAMS

by

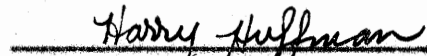
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Thesis submitted to the Graduate Faculty of the
Virginia Polytechnic Institute
in candidacy for the degree of
MASTER OF SCIENCE
in
Business Education

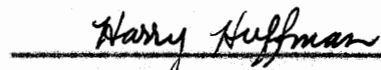
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CHAPTER I

THE PROBLEM

The Need for the Study

In a study he did in the field of clerical typewriting, Frisch stated, "Surveys and studies show that clerical typewriting is the number one skill, the most important skill, and the most used skill of all clerical workers."¹ With that thought in mind, it seems extremely important that those persons seeking employment in the field of clerical typewriting should have the advantage of proper training to prepare them for that employment.

Because of the increasing number of office workers employed by business and industry, more and more attention is being given to vocational training for office workers. There needs to be some basis for the selection of subject matter content in the training of these workers. If the office training classes accept the responsibility of efficiently carrying out the training for clerical typewriting, then such classes should provide job-oriented exercises similar to the duties of the clerk-typist. One way for clerical-typewriting teachers to know whether they are giving proper training to students under their

¹V. A. Frisch, "An Analysis of Clerical Business Typing Papers and Forms for the Improvement of Instructional Materials," (Unpublished Ed. D. dissertation, School of Education, New York University, 1952), p. 13.

guidance is to find out what is actually being done in the offices employing their trainees and to compare that with what is being done in the classroom to prepare them to accept employment.

Huffman observed:

Numerous surveys (one completed in Covington, Virginia, for instance) show that many clerk-typists learn in the office instead of in the classroom. In a 1950 survey, Miss Beulah Jones found that local business-department graduates were doing--and had learned on the job--many clerk-typist activities they were not taught in school, as:

Handling thick carbon packs.

Completing work at the typewriter within a given time with both speed and accuracy.

Typewriting numbers efficiently and accurately.

Typewriting quickly and accurately from rough-draft copy.

Learning the technique of erasing.

Preparing stencils for duplication.

Preparing at the typewriter first drafts to be retyped later.

Learning to make mathematical placement for tabulations.

Aligning typescript on forms.

Research studies show that clerk-typists need to know many uses of the typewriter. A community survey of clerk-typist work is in order if you would guarantee that appropriate training is included in your clerical-practice programs.¹

Huffman intended his report for clerical-practice programs, but it need not be limited to that. Even those schools with both clerical practice and second-year typewriting can better prepare their students to meet the responsibilities and practices in the job situation by applying similar findings to all job-oriented exercises in typewriting.

Frisch² stated:

A skill must be overlearned to be of vocational value to any worker. Overlearning is dependent upon meaningful

¹Harry Huffman, "How Much Typing in Clerical Practice?," Business Education World, XXXIV, (January 1954), pp. 11, 12.

²Frisch, op. cit., pp. 23, 25.

repetitive practice; therefore, this whole area of clerical typewriting is interwoven with production typewriting, over-learning, and purposeful repetitive drill and practice. The training in this field must include the same conditions, materials, and production standards or requirements of business offices.

Frisch also said, ". . . that after mastery of basic typing, the training should follow the same patterns of procedures and be identical to the same kind of work found in business offices."¹

The attitude of business has been, "Why can't the schools give us the kind of workers who are trained to do the work we have for them after they are employed?" That was the question asked frequently by the employers interviewed in this study, and it is certainly worth consideration. Again, we are faced with the need for some means of knowing what businesses demand and need of students trained in the high schools. Montgomery and Roanoke county schools are turning out hundreds of prospective clerk-typists each year. If these prospective workers are to prepare themselves to accept the positions available, they should be assisted by the teachers in learning and practicing in the same proportion the kinds of typewriting done in the offices. If the present emphasis given in second-year typewriting classes in these two counties is correct, no adjustments need be made. If, however, the emphasis is incorrect, adjustments based on actual office practices should be made.

¹Frisch, op. cit., p. 66.

Purposes

There are three major purposes of this study. The first two lead directly to the third. The three are:

1. To determine the percentages of time devoted to job-oriented typewriting exercises in office training programs in high schools in Montgomery and Roanoke counties as revealed by teacher interviews.

2. To determine the percentages of time devoted to similar clerical typewriting duties performed in selected business offices in Montgomery and Roanoke counties.

3. To compare the percentages of time devoted to certain clerical typewriting duties in the offices and high schools in Montgomery and Roanoke counties and to develop recommendations for the improvement of instruction in clerical typewriting.

Delimitations

1. The study was limited to selected offices and high schools in Montgomery and Roanoke counties. (The selection procedure is discussed in Chapter III.)

2. Only those duties related to clerical typewriting were studied.

Definitions

1. Clerical typewriting.--"Clerical typewriting is all kinds of typing performed in the business office by clerks whose duties and work

are not of a stenographic nature."¹ In other words, clerical typewriting may be defined as any typewriting done from sources other than shorthand or some form of dictating machines.

2. Clerk-typist.--Any office worker who performs the duties defined under clerical typewriting.

3. Integration of materials and information.--The gathering of materials and information before the actual typewriting is performed.

4. Filling in forms and form letters.--Typewriting on printed forms or form letters. Examples include: bills, invoices, requisitions, payrolls, and the like.

5. Typewriting straight copy.--Typewriting copies of other typewritten reports or materials.

6. Typewriting preparation for duplication.--Typewriting stencils and masters to be used in duplicating.

7. Typewriting cards, envelopes, and labels.--Typewriting which involves the use of small pieces of material such as cards, envelopes, or address and file labels.

8. Typewriting from rough drafts.--Typewriting from handwritten or other corrected copy. (This classification was included because of the special problems of integrating information during the typewriting.)

9. Legal typewriting.--The typewriting of legal contracts and papers.

10. Statistical typewriting.--Typewriting tabulated figures and other materials.

¹Frisch, op. cit., p. 8.

11. Recordative typewriting.--The typewriting of financial reports, accounting records, and any other typewriting done relating to bookkeeping and accounting.

12. Multiple copy typewriting.--The typewriting of three or more carbon copies. This category was included with other forms of clerical typewriting where the multiple copies were made. It was included because of the special problems involved in the making of multiple copies, and also because it was believed that the schools are neglecting to train students to cope with those multiple copy problems which appear in business offices in gigantic amounts.

CHAPTER II

REVIEW OF LITERATURE

The first step in conducting the study was to review literature in the field of clerical typewriting. The purpose of this step was not merely to determine the areas of clerical typewriting (as presented in Chapter I under definitions 3-12), but also to observe the types of studies already completed by experts in the area of vocational typewriting. Their findings were an invaluable aid in acquainting the author with the objectives of clerical typewriting in the high school and the office.

Frisch

Included in the reviewed literature was a number of studies done in the area of clerical typewriting, including the previously mentioned study by Frisch. The purpose of the study by Frisch was:

To determine the nature of "clerical typewriting" and its sources as it relates to the production of papers and forms used in business offices. These results are to be used as the bases for specifications of a typing packet for the improvement of instructional materials in training clerk-typists.¹

While Frisch was concerned with the materials used in business offices and the sources of the matter to be typewritten, this study was designed to measure the percentages of time devoted to general areas of clerical

¹Frisch, op. cit., p. 1.

typewriting without regard to the kinds and sources of the materials to be typed.

Frisch¹ also stated that the clerk-typist has been neglected in high school training. At least, he has not been given the attention that has been given the stenographic or secretarial trainee, even though there are probably more office clerks than all other office personnel combined. The present study was begun with the same assumption.

Frisch² grouped the specimens of typewriting jobs according to:

1. Classifications or patterns of clerical typewriting.
2. Kinds of sources of typewriting.

Before examining the findings of the survey, Frisch asked four major questions which would serve as a guide to his study:

1. What are the kinds of business papers and forms (items) that office clerks type?
2. What are sources from which clerks typewrite the items?
3. What is the relative importance of the various business papers and forms and their typewriting sources to common usage in business offices?
4. What conclusions can be drawn from the data acquired which will serve as bases for the improvement of instructional materials for clerical typewriting?³

So that he could accurately determine the kinds of typewriting done, Frisch selected 53 businesses in the New York and New Rochelle areas from which he collected over one thousand specimens of forms and business

¹Ibid.

²Ibid., p. 2.

³Ibid., pp. 3, 4.

papers used in the business offices. These specimens were classified as follows:

1. Typewriting on irregularly printed forms of all sizes and weights of stock with variable lines to be filled in and where regular feed is used.
2. Typewriting on regularly ruled forms.
3. Typewriting on many similarly printed forms.
4. Typewriting on blank sheets, one original and perhaps one or more carbon copies where tabulation planning and number typewriting are the major problems.
5. Typewriting on similar sheets, cards, or envelopes which require repeated insertion in the typewriter and/or back-feeding can be used.
6. Typewriting on similarly ruled sheets or cards where fill-ins are similarly placed and back-feeding may be used.
7. Typewriting of straight copy.
8. Typewriting preparation of all duplicating materials and forms.¹

Frisch then compared the percentages of use (of the above materials) in the office with the percentages of use in four textbooks. His comparison showed:²

1. Irregularly printed forms with variable line fill-ins had a combined score of 22 per cent of the collected specimens as compared with 4 per cent found in typewriting textbooks.

2. Similarly printed forms constituted 18 per cent of the collected specimens as compared to 1 per cent in typewriting textbooks.

3. Regularly ruled forms consisted of 15 per cent of the collected specimens of business forms as compared to 3 per cent in typewriting textbooks.

¹Frisch, op. cit., p. 71.

²Frisch, op. cit., pp. 139-149.

4. Straight copy showed 14 per cent by clerk-typists and 73 per cent in textbooks.

5. Duplicating work consisted of 10 per cent of the work for clerk-typists, while only 1 per cent was devoted to it in the textbooks.

6. Statistical typewriting on blank sheets made up 10 per cent of the work of clerk-typists while 11 per cent was given by the texts.

7. Typewriting on similar blank sheets, cards, or envelopes showed 8 per cent for clerk-typists and 5 per cent for the textbooks.

8. Typewriting on similarly ruled smaller sheets or cards commanded 3 per cent of the use in the office and 2 per cent in the analyzed textbooks.

The major difference in the Frisch study and the present one is the analysis of the use of materials in the former and the analysis of the time spent in typewriting on the various papers and forms in the latter. It will be noted that some of the areas or classifications by Frisch are similar to the ones used in this study.

Potter

A study by Thelma M. Potter concerning general clerical workers contained findings about the kinds of typewriting and the percentages of time devoted to each by general office workers. Four-hundred sixty-one hours of typewriting by general office workers were reviewed

and classified according to typewriting done. Her findings showed:¹

1. Forms	36.2%
2. Form letters	17.5%
3. Straight copy	14.8%
4. Envelopes	12.3%
5. Billing	8.1%
6. Rough drafts	5.3%
7. Dictation to machine	2.8%
8. Cards	2.0%
9. Tabulations	1.0%

In an article by Potter appearing in The Balance Sheet, she

comments:

It seems as if this might be the case (Typing has become only an accessory after the stenographic fact) when we emphasize to a much greater extent letters and other stenographic typing jobs in comparison to the emphasis given to addressing envelopes, filling in forms, typing rough drafts, business forms, and statistical reports, which are typical typing jobs performed by some of the nonstenographic office workers.²

It was her idea that an analysis of the time devoted to the areas of nonstenographic typewriting is essential to proper training of general office workers who devote some of their time to typewriting.

¹Thelma M. Potter, "An Analysis of the Work of General Clerical Employees," Bureau of Publications, Teachers College, Columbia University as reviewed by Stephen J. Turille, Editor, National Association of Business Teacher Training Institutions, Bulletin No. 37, (December, 1945), pp. 48, 49.

²Thelma M. Potter, "Typewriting for the General Clerical Worker," The Balance Sheet, XXX, (February, 1949), p.225.

Liles

In his study of "Some Factors in the Training of Clerical Workers,"¹ Liles reported results found among 100 employees who did clerical typewriting. His classifications of clerical typewriting and the percentages of time given to each classification were:

1. Fill-ins, irregular, all kinds	13.6%
2. Form letters, fill-ins only	10.7%
3. Typing cards, all sizes, blank and ruled	10.3%
4. Addressing envelopes and cards, etc.	8.8%
5. Forms, small, longer horizontally (like checks)	8.8%
6. Statements of account	8.8%
7. Statistical, financial, blank and ruled	8.5%
8. Duplicating, all sources	7.7%
9. Straight copy, all sources	7.7%
10. Labels, filing, mailing, and others	4.8%
11. Lists, all kinds and forms	4.8%
12. Correspondence, from handwritten copy, direct dictation at machine, and compose	4.4%
13. Forms, small longer vertically	1.1%

Liles' classifications, like those by Potter, included a small percentage of typewriting from dictation. In this study, no forms of dictation were included. Liles also distinguished between different kinds of forms, which in this study were grouped into one classification.

Huffman

Huffman stated:²

The difference between second-year typewriting and the clerk-typist unit in clerical practice is largely that we give

¹Alton B. Parker Liles, "Some Factors in the Training of Clerical Workers," (1947 Delta Pi Epsilon Award), Published by Oklahoma Agricultural and Mechanical college, (1949), p. 100.

²Huffman, op. cit., p. 11.

no time to basic typing instruction in clerical practice; we concentrate all our typing time in clerical practice to the use of the typewriter in producing simulated office work.

Since only job-oriented exercises were analyzed for second-year typewriting in this study, the major difference is removed and the two kinds of typewriting become practically synonymous. Therefore, the areas of emphasis in the typewriting unit of the clerical-practice class and the areas of emphasis in the production or job-oriented exercises of second-year typewriting are very similar.

Huffman³ listed the areas of emphasis in the typewriting unit of the clerical-practice class as:

1. Erasing techniques
2. Multiple-copy work
3. Preparation for duplication
4. Working with envelopes, cards, labels, and tags
5. Recordative typewriting
6. Statistical typewriting
7. Proofreading
8. Desk problems
9. Filling in forms, form letters
10. Typewriting from oral or mental stimuli
11. Integration of materials and information
12. Adjusting to the task
13. Electric typewriters

³Huffman, op. cit., 12, 29.

Should one review Huffman's work, he would find some areas listed that are not given here. Because several of the classifications set forth by him were designed for classes in clerical practice and do not fit the second-year typewriting class, they were eliminated in the areas of clerical typewriting covered by the textbooks for second-year typewriting, and consequently, from the analysis given in this study. Other areas were added also, as they presented special problems in second-year typewriting. Those classifications given by Huffman which were eliminated include: erasing techniques, desk problems, proofreading, typing from oral or mental stimuli, adjusting to the task, and electric typewriters.

Some teachers do not permit erasing, and others give special instruction in either the first or second year of typewriting. Erasing, in itself, cannot be measured in length of time required to perform the operation. Individual differences would, of course, determine the time consumed.

Desk problems do not seem to fit into the areas of clerical typewriting in the second year of typewriting and, like erasing, could not be measured in terms of time spent.

The problem of proofreading is so integrated with all typewriting that it cannot be considered either in the textbook analysis or office analysis. It is constantly going on whenever one types.

Typewriting from oral or mental stimuli is certainly encountered in office typewriting, but it is a special source of typewriting and does not appear so outstanding as rough drafts which were considered in the study.

There is no manner in which to determine the amount of time needed and used by the office worker in adjusting to the task. Thus, that area, important as it may be, could not be used in the study.

Since the study was designed to measure job-oriented typewriting, the problem of electric typewriting was not covered. There was no distinction made among any kinds or makes of typewriters used to do the job.

Additional Areas

The areas of rough drafts and legal typewriting were given in the article by Huffman, but he did not list them as areas of emphasis in the clerical-practice class. Because space and time is devoted to the areas by the textbook, and since the office surveys showed they were used, they were given attention along with the other areas.

Summary of Literature Review

In comparing the areas of clerical typewriting covered by the works cited and by this study (Table 1), one can see the similarity in emphasis given by the authors concerning what is thought to be the important areas of typewriting performed by clerk-typists.

It is seen from the table that only Huffman agreed with the assumption of the present study that the integration of materials and information prior to actual typewriting is an important part of clerical typewriting. It is the thought of Huffman and the author that best

use of the clerk-typist's time can be effected only if he can quickly and accurately gather the materials and information necessary for the performance of his duties.

All authors agree that filling in forms and form letters is an essential element of clerical typewriting. Some of the studies give a breakdown of this classification into specific forms, but for the purpose of general classification they were grouped under one major heading in this study.

Frisch, Potter, and Liles agree with this study that typewriting straight copy should be included in determining the areas of emphasis in clerical typewriting.

The typewriting on masters and stencils in preparation for duplication is included in all studies except that by Potter.

Another area of unanimous agreement is that of typewriting cards, envelopes, and labels. Even though all the authors do not use this exact classification, all agree that typewriting on small pieces of paper presents a special problem.

Only Potter and Liles are in agreement with this study that integration and typewriting from rough drafts should be included in the areas of clerical typewriting.

None of the authors included the classification of legal typewriting in their works. Frisch purposely eliminated law offices in his study because of the specialized nature of the work.¹

¹No law offices are included in the present study.

All authors include in their studies an area of statistical typewriting. It would appear that this classification along with those of filling in forms and form letters and typewriting cards, envelopes, and labels is one of the more important ones in clerical typewriting.

Recordative typewriting is treated by Liles, Huffman, and the author as separate and important area of clerical typewriting.

The typewriting of two or more carbon copies (multiple copy) is justified by Frisch, Huffman, and the author. In this study the use of multiple copy is presented with the classification to which it belongs, which allows it to occur under six different classifications.

TABLE 1
COMPARISON OF CLERICAL TYPEWRITING AREAS
COVERED IN RESEARCH STUDIES

Areas	Frisch	Potter	Liles	Huffman	Hall
Integration of materials and information				x	x
Filling in forms and form letters	x	x	x	x	x
Typewriting straight copy	x	x	x		x
Typewriting preparation for duplication	x		x	x	x
Typewriting cards, envelopes and labels	x	x	x	x	x
Integration and typewriting from rough drafts		x	x		x
Legal typewriting					x
Statistical typewriting	x	x	x	x	x
Recordative typewriting			x	x	x
Typewriting multiple copy	x			x	x

CHAPTER III

PROCEDURES FOR COLLECTING THE DATA

Analyzing the Manual of Instruction

After a review of literature was made (Chapter II), the next step was to determine the content of the manual of instruction used in the teaching of clerical typewriting in the nine high schools included in the study. Since the second year of typewriting in the nine high schools in the two counties emphasizes the job-oriented exercises of clerical typewriting, it was used exclusively for this study. The first year of typewriting was not considered because skill and control building exercises make up the bulk of the work in this year. Secretarial and stenographic practice classes were eliminated because they concentrate upon typewriting from some form of dictation. Clerical and office practice classes were not considered in view of the fact that typewriting is only a small part of those classes.

All of the high schools in Montgomery and Roanoke counties use the same basic text for their second-year typewriting classes. The last 150 lessons in that text were analyzed. All of the teachers of second-year typewriting in the area (from the nine high schools) were interviewed, and they confirmed those lessons to be the material they covered in second-year typewriting. The ten major areas of clerical typewriting as consolidated from literature sources were

picked out of those lessons. The amount of time suggested by the text to be spent in the teaching and practice of each of the job-oriented exercises was carefully classified and recorded. Those areas as presented earlier were:

Integration of materials and information

Filling in forms and form letters

Typewriting straight copy

Typewriting preparation for duplication

Typewriting on cards, envelopes, and labels

Typewriting from rough drafts

Legal typewriting

Statistical typewriting

Recordative typewriting

Typewriting multiple copies

Only those job-oriented exercises found in the text were listed and analyzed. All skill and control exercises were eliminated because they do not contribute directly to the training for filling clerical typewriting positions.

The amount of time devoted to the various areas of clerical typewriting was recorded in minutes, as suggested by the analyzed text. After each lesson was studied and classified, the total time given to each area was computed. The total for each area was then converted to percentages of total class time and percentages of total production time. The percentages were recorded for the purpose of comparing them with the percentages determined from the actual job study.

The method of determining the total time spent in clerical-typewriting classes follows:

The amount of total time spent in the typewriting classroom was based upon 45-minute periods as assumed by the textbook. Production typewriting is emphasized in the last 150 lessons in the text. That amount of work is not sufficient to cover the 180-day period set up by the Virginia State Department of Education as the normal school term, so some teachers supplement the text with practice sets. Some teachers, too, devote more time to certain clerical typewriting areas than is suggested in the textbook. The reason for using 45 minutes as the normal class period is that the text uses that amount of time per lesson and because some time is normally taken from most periods for announcements, instructions, roll calls, and so forth.

Total production time is based upon the total number of minutes actually spent in performing the job-oriented exercises. In other words, it is the grand total of time spent in typewriting in all the individual clerical-typewriting areas.

The percentages of total class production time were computed in order to show the amount of time actually devoted to job-oriented typewriting during the second year of typewriting in a manner that could be compared with the office typewriting.

Interviewing the Teachers

To determine the amount of time the teachers actually spent on the various clerical typewriting projects, each teacher was interviewed.

The differences in time allotted by the text and by the teachers were recorded on an interview sheet. The average variation from the text suggestions as practiced by the teachers interviewed was either added to or subtracted from the text recommendations. Both the percentages of time for each area allotted by the text and the percentages of time for each area actually used by the teachers appear in the analysis. For the purpose of comparing the office and classroom percentages of time devoted to various clerical typewriting areas, the times actually used by the teachers in the classroom were used. The text percentages of time given the areas were used to show the differences between what the text suggests and what the teachers in Montgomery and Roanoke county schools were actually doing. The classroom analysis shows that difference.

Preparing the Time Analysis Form

A Time Analysis Form was prepared to be presented to clerk-typists in offices included in the study. The form was so prepared that time devoted to various clerical typewriting duties could be quickly entered on it. (A sample of this form appears in Appendix III.) Duplicated copies were prepared for distribution.

Selecting the Offices

A total of 65 business offices were listed as employing clerk-typists by the Virginia State Employment Service Offices in Roanoke,

Virginia and Radford, Virginia. In the Roanoke office, the names given were said to represent a good cross-section of all the businesses in the county. The list from the Radford office was complete for all the businesses in the area. Each Employment Service Office keeps a "visiting program" of all the businesses in its area; therefore, the list of offices obtained through the Service was as complete and authoritative as could be secured.

After the list of offices was obtained, it was classified into similar groups. A total of 20 classifications was represented by the 65 businesses. Those classifications were:

1. Advertising
2. Automotive Sales and Service
3. Banks
4. Colleges
5. Construction Firms
6. Electric Power Companies
7. Gas Companies
8. Governmental Agencies
9. Heavy Industries
10. Hospitals
11. Insurance Companies
12. Manufacturers
13. Motor Transport Companies
14. National Service Organizations
15. Newspapers and News Agencies

16. Railways
17. Retailers
18. Special, Government-supervised Manufacturer
19. Telephone Companies
20. Wholesalers and Distributors

The individual businesses were then listed under their appropriate classification. There was a range from 13 offices classified under the largest group to one classified under the smallest. Each business under a given category or classification was listed on a separate slip of paper and placed in an envelope. A strictly chance drawing was made in order to select the businesses having clerk-typists who were to be interviewed. A second and third drawing was made (if the group contained that many names) so that alternate offices would already be selected, should the first office be unable to participate in the study. In this manner, all 20 of the classifications of businesses were represented by one office and alternates in order of drawing.

During the period of interviews of clerk-typists, two of the classifications were eliminated after the list of names was exhausted without finding a person engaged in clerical typewriting within the offices. Those classifications eliminated were Advertising and Automotive Sales and Service. All other classifications were included in the study, even though several "alternates" had to be used. In not one instance, however, did an alternate office have to be used for a reason other than the first office visited did not employ a clerk-typist at the time of the interview.

Visiting the Offices

After the offices were selected, visits were made to each, at which time the supervisor and/or the clerk-typist was interviewed, the purpose of the study explained, permission for including the office in the study obtained, the aid of the typist secured, and the proper use of the schedule form explained. For the purpose of returning the schedule forms to the author self-addressed and stamped envelopes were left with the firms at the interview.

Analyzing the Data

After the completed forms were returned, the time allotted each area of clerical typewriting was carefully observed and recorded on a master reporting sheet. The percentages of total typewriting time were computed and presented on another reporting sheet which appears in Chapter V.

The comparisons of time percentages devoted to similar exercises by the high schools' training programs and the offices were made in the form of conclusions which may be found in Chapter VI. Upon these conclusions the author's opinions for the improvement of the high school training classes for clerk-typists are given in Chapter VI.

CHAPTER IV

TEXT AND CLASSROOM ANALYSIS OF TIME SPENT IN
PRODUCTION TYPEWRITING

Introduction

It is seen in Table 4 that only 53.31 per cent of the total time covered by the textbook is allotted to production typewriting. From the same table it is seen that 57.91 per cent of the time given by teachers in the second year of typewriting is spent in training students for actual clerical typewriting positions in business. This fact would seem to indicate that time could be made available for adjustments to take care of additional training in those areas found in the business survey to be most neglected by the high schools.

A comparison of Table 2 and Table 3 shows approximately 300 minutes more were devoted to production typewriting in the classroom than is given in the textbook. That total is more in Table 3 because some teachers allot more time than the text allots to certain production typewriting areas. The result is that some percentages increased while others decreased. Only the statistical and legal areas show that the teachers spend more time in the presentation and practice than the text recommends.

Classroom Percentages

The teachers indicated they spent approximately nine per cent of all production time in teaching the gathering of materials and information before the typewriting was performed.

The amount of time given to filling in business forms and form letters was the second largest area. In the classrooms of Montgomery and Roanoke county high schools, 29.92 per cent of the production time was devoted to that area.

Slightly less than ten per cent of job-oriented typewriting in the high schools was done from straight copy.

Classifications of typewriting preparation for duplication and typewriting on cards, envelopes, and labels were each given approximately five per cent of the total production time by the teachers.

Preparation for and typewriting from rough drafts was one of the smallest classifications. Only .77 per cent of all production time was spent in typewriting from this source.

Three teachers interviewed said they spent more time than the text suggested for legal typewriting. The range was from two days more to two weeks additional practice. The average for all twelve teachers was found to be approximately 85 additional minutes devoted to the typewriting of legal contracts and papers. The adjusted time was almost eight per cent of the total typewriting time.

Seven of the twelve teachers interviewed indicated they spent considerably more time in the initial teaching of tabulation (defined

in this study as statistical). Their estimates varied from 50 per cent more time to 500 per cent of the amount of time allotted by the text. The average of all twelve showed that the teachers gave approximately twice as much initial teaching time as the text recommended. Since 225 minutes were devoted by the textbook to the primary learning of tabulation, that amount of time was added into the adjusted analysis for statistical typewriting. That additional time caused the percentage of total production time for statistical typewriting to be 31.33 per cent.

Recordative typewriting and multiple-copy typewriting areas showed very small percentages. The former was allotted 1.26 per cent of the total production time and the latter was given .38 per cent. The latter was the smallest area.

TABLE 2
TEXT TIMES AND PERCENTAGES OF EACH AREA OF
CLERICAL TYPEWRITING

Areas	Time in Minutes Allotted by Text	Percentage of Production Time*
Integration activities	340	9.44
Filling in forms and form letters	1,170	32.50
Typewriting straight copy	385	10.69
Typewriting preparation for duplication	194	5.39
Typewriting on cards, envelopes, and labels	191	5.31
Preparation for and type- writing from rough drafts	30	.83
Legal typewriting	225	6.25
Statistical typewriting	1,000	27.78
Recordative typewriting	50	1.39
Typewriting of multiple copies	15	.42
TOTAL	3,600	100.00

*Production time is the total of column 1 (3,600)

TABLE 3

ACTUAL CLASSROOM TIMES AND PERCENTAGES OF EACH AREA OF
CLERICAL TYPEWRITING*

Areas	Time in Minutes Allotted in Class- rooms	Percentage of Production Time**
Integration activities	340	8.70
Filling in forms and form letters	1,170	29.92
Typewriting straight copy	385	9.85
Typewriting preparation for duplication	194	4.96
Typewriting on cards, envelopes, and labels	191	4.88
Preparation for and type- writing from rough drafts	30	.77
Legal typewriting	310	7.93
Statistical typewriting	1,225	31.33
Recordative typewriting	50	1.28
Typewriting of multiple copies	15	.38
TOTAL	3,910	100.00

*See Appendix I for basic classroom data

**Production time is the total of column 1 (3,910)

TABLE 4

COMPARISON OF TIME PERCENTAGES RECOMMENDED BY TEXT
AND THAT OF ACTUAL CLASSROOM PRACTICE IN
MONTGOMERY AND ROANOKE COUNTIES FOR
SECOND-YEAR TYPEWRITING

Classifications	Recommended by Text	Actual Practice
Production time	53.31	57.91
Skill development and other activities	<u>46.69</u>	<u>42.09</u>
TOTAL	100.00	100.00

CHAPTER V
OFFICE SURVEY ANALYSIS

Introduction

The first step in analyzing the work performed by the clerk-typists was to consolidate the time spent in performing various clerical typewriting duties. The classifications of clerical typewriting duties were listed on the time analysis sheets which were presented the typists at the time of the interview. All of the eighteen time analysis forms were returned and each showed the amount of time spent in performing clerical typewriting duties over a period of five days. Since only part of most clerk-typists' time is devoted to typewriting, only those jobs covered by the ten clerical typewriting areas were entered on the forms.

Assuming that each clerk-typist worked a total of 40 hours during the five days, the sum of the working time for the eighteen typists reporting was 43,200 minutes. The actual typewriting time of the eighteen typists reporting was 28,050 minutes. Therefore, more than one-half of the average clerk-typist's time was devoted to clerical typewriting.

Although only ten areas of clerical typewriting were listed on the time analysis sheet, there were seventeen different classifications when

broken down into distinct areas. The clerk-typists were asked to list separately those duties done simultaneously, such as typewriting multiple copies of forms or form letters. When this separate listing was done, a new area was listed and the time recorded from that typist's time analysis form and from subsequent ones.

Confidence Limits

In order to determine whether the percentages of time spent by the clerk-typists in the areas of clerical typewriting could be considered reliable, confidence limits for each area were computed. Confidence limits show the range within which one might expect the true mean per cent to fall. For the present study confidence limits were set at the five per cent level. The level for five per cent merely means that percentages falling within the confidence limits can be expected in the long run to be correct 95 per cent of the time.

To illustrate the use of confidence limits in this study, let us assume that the mean percentage for the 18 clerk-typists in a given area is four. Since the percentage for every clerk-typist will not necessarily be four, it is necessary to determine whether four per cent is a reliable mean. By substituting into the formula found in Appendix IV, the percentage of time devoted by each clerk-typist to the given area, the range between which a reliable mean percentage should fall is established. Let us also assume in this illustration that the confidence limits are from two per cent to seven per cent at the five per cent level. These limits mean that any mean per cent falling between two per cent and seven per cent should

be reliable 95 times out of 100 cases. Also, if we should take another sampling of clerk-typists, the mean should fall within the confidence limits.

Time Spent in Each Area

1. As is seen in Table 5, the clerk-typists spent 1,920 minutes in gathering information and materials prior to typewriting. Thus, integrating activities occupied 6.84 per cent of the time allotted to typewriting duties. The confidence limits established for this area were 1.5 per cent to 9.7 per cent. These limits mean that over a period of time, in 95 cases out of 100, the percentage of time devoted to integrating activities by the clerk-typists should fall between 1.5 per cent and 9.7 per cent.

2. Filling in forms and form letters (original or original and one carbon) took 2,215 minutes or 7.90 per cent of the total time. The confidence limits computed for this area of clerical typewriting were .10 to 13.40. This area plus that of making multiple copies of forms and form letters showed the greatest amount of time spent. Sixteen out of the eighteen reporting clerk-typists devoted time to either one or the other of the areas or both.

3. Typewriting straight copy occupied a total of 1,820 minutes of the time of twelve typists. Therefore, 6.49 per cent of the total typewriting time was used for this type of work. Confidence limits at the five per cent level for straight copy were .80 per cent to 8.40 per cent.

4. Eleven clerk-typists reported they did typewriting preparation for duplication. Of the total typewriting time of 28,050 minutes, 3,925 minutes were spent in typewriting stencils and masters for duplication, indicating that a rather large portion of clerk-typists' (those included in the study) time was devoted to this kind of typewriting. Based upon the confidence limits set, 95 per cent of the time clerk-typists should spend from 1.00 to 15.5 per cent of their time in typewriting preparation for duplication.

5. Typewriting on cards, envelopes, and labels took 12.16 per cent of the total typewriting time. Six of the typists indicated they did no typewriting of this kind, but the other twelve reported a total of 3,410 minutes. Confidence limits, or range of reliability, were 2.60 per cent to 19.50 per cent for this area.

6. A total of 2,420 minutes were used by eleven typists in typewriting from handwritten and other corrected copy. That total was 8.63 per cent of the typewriting reported, while the confidence limits were from .50 per cent to 10.20 per cent.

7. The typewriting of legal contracts and papers was given very little time by the clerk-typists. Four typists reported only 120 minutes of legal typewriting. Only .43 per cent of the total time was allotted to this classification. Confidence limits computed for this area were zero per cent to .38 per cent. (The explanation offered for this area and others falling outside the confidence limits is that the amount of time or the number of clerk-typists devoting that time are so small in

comparison to total typewriting time that they could hardly be considered significant. They are included because at least one clerk-typist indicated he performed a recordable amount of time doing work under the particular area.)

8. Seven of the typists indicated they did statistical typewriting. These typists devoting part of their time to statistical typewriting reported a total of 440 minutes or 1.57 per cent of the total typewriting time. Confidence limits set for the area were .06 per cent to 1.80 per cent.

9. Four typists gave 230 minutes to the typewriting of accounting or related records. This total was .82 per cent of the 28,050 minutes devoted to typewriting by the eighteen clerk-typists. This percentage fell outside of the confidence limits of zero per cent to .61 per cent at the five per cent level.

10. Statistical typewriting with multiple copies was given 1,000 minutes by five clerk-typists. This amount of time accounted for 3.56 per cent of the total typewriting time of 28,050 minutes, while the confidence limits set were zero per cent to 2.70 per cent.

11. Making multiple copies of forms and form letters was the largest single area, as indicated by eleven clerk-typists having spent a total of 7,545 minutes or 26.90 per cent of the total time doing this kind of typewriting. This area combined with the making of single or one-carbon copies of forms and form letters accounted for 30.89 per cent of the total typewriting time. For this single area the 26.90 per cent fell within the confidence limits of 2.30 per cent to 38.00 per cent.

12. Typewriting multiple copies of recordative work was given 745 minutes or 2.65 per cent of the total typewriting time by four typists. Confidence limits computed for this area were zero to 1.90 per cent.

13. Some of the straight copy work was done with multiple copies. Six clerk-typists reported a total of 720 minutes for this area. The percentage in this classification was 2.57. Confidence limits for this area were .04 per cent to 2.30 per cent.

14. One typist reported that the majority of his legal typewriting was done in multiple copies. He spent 285 minutes during the week in doing this sort of typewriting for a percentage of 1.02 of the total. The range of confidence computed for this area was zero per cent to .47 per cent.

15. Three typists said they prepared statistical material for duplication. They gave 1,000 minutes of their time to doing so. Of the total time spent in typewriting by all the typists, 3.56 of it was spent in typewriting under this area. Ninety-five per cent reliability can be expected for a mean per cent falling between zero per cent and 3.30 per cent (confidence limits).

16. One typist reported typewriting legal copy from rough draft. This was the smallest area, with 45 minutes or .16 per cent of the total time. Confidence limits computed were zero per cent to .04 per cent.

17. Two of the clerk-typists reported they typewrote multiple copies from rough draft for 210 minutes during the recording week. The 210 minutes accounted for .75 per cent of the total typewriting time. The range of reliability was .02 per cent to .16 per cent.

TABLE 5
THE NUMBER OF MINUTES DEVOTED BY THE INTERVIEWED CLERK-TYPISTS
TO VARIOUS CLERICAL TYPEWRITING DUTIES

Classification of Duties in Clerical Typewriting	Typists																		Total Per- centages	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		Total
Integration of materials and information		180				45	120	240		140	150		175	90	285	330	75	90	1,920	6.84
Filling in forms and form letters	60			90		285	60	295			60		210		45			1110	2,215	7.90
Typewriting straight copy	120	180		30		300	75	205	45	40	675		30			60	60		1,820	6.49
Typewriting preparation for duplication	630			30		45	150	330	960	70	90			1380	180	60			3,925	13.99
Typewriting on cards, envelopes, and labels	60			840	330	375	120	275	90	30			60	45		30	1155		3,410	12.16
Preparation for and typewriting from rough drafts	60				60	30	60	40	675	90			10	105	1140	150			2,420	8.63
Legal typewriting						30		30			30		30						120	.43
Statistical typewriting				60		60		30		105	75		20			90			440	1.57
Recordative typewriting							75	25		110			20						230	.82
Statistical typewriting with multiple copies	840					45		60			30		25						1,000	3.56
Filling in forms and form letters with multiple copies		900	2250			30	120	150	390	1665		1440	300			90	210		7,545	26.90
Recordative typewriting with multiple copies		450				210		60					25						745	2.65
Straight copy typewriting with multiple copies		90				180	30	150	90		180								720	2.57
Legal typewriting with multiple copies						285													285	1.02
Typewriting in preparation of statistical material for duplication							570	165					265						1,000	3.56
Legal typewriting from rough drafts								45											45	.16
Rough draft typewriting with multiple copies														120	90				210	.75
TOTAL MINUTES	1770	1800	2250	1050	390	1920	1380	2100	2250	2250	1290	1440	1170	1740	1740	810	1500	1200	28,050	100.00

Table 6 shows the actual percentages of total time devoted to each area by the 18 clerk-typists along with the lower and upper confidence limits (at the five per cent level) for each area.

By looking at Table 7 one can see a composite picture of the amount of time devoted to nine of the original ten classifications. This table was compiled by grouping the original areas with their related separate areas. For example, filling in forms and form letters was combined with making multiple copies of forms and form letters; legal typewriting was combined with making multiple copies of legal typewriting and typewriting legal papers from rough draft; etc.

The area of multiple copies was purposely omitted from this table because those areas involving the making of multiple copies were included under their main classifications.

TABLE 6

ACTUAL PERCENTAGES AND CONFIDENCE LIMIT PERCENTAGES FOR
THE SEVENTEEN CLERICAL TYPEWRITING AREAS

Clerical Typewriting Areas	Actual	Confidence Limits
Integration of materials and information	6.84	1.50— 9.70
Filling in forms and form letters	7.90	.10—13.40
Typewriting straight copy	6.49	.80— 8.40
Typewriting preparation for duplication	13.99	1.00—15.50
Typewriting on cards, envelopes, and labels	12.16	2.60—19.50
Preparation for and typewriting from rough drafts	8.63	.50—10.20
Legal typewriting	.43	.00— .38
Statistical typewriting	1.57	.06— 1.80
Recordative typewriting	.82	.00— .61
Statistical typewriting with multiple copies	3.56	.00— 2.70
Filling in forms and form letters with multiple copies	26.90	2.30—38.00
Recordative typewriting with multiple copies	2.65	.00— 1.90
Straight copy typewriting with multiple copies	2.57	.04— 2.30
Legal typewriting with multiple copies	1.02	.00— .47
Typewriting in preparation of statistical material for duplication	3.56	.00— 3.30
Legal typewriting from rough drafts	.16	.00— .04
Rough draft typewriting with multiple copies	.75	.02— .16
TOTAL	100.00	

TABLE 7

A COMPOSITE TABLE OF THE NUMBER OF MINUTES DEVOTED BY THE
INTERVIEWED CLERK-TYPISTS TO VARIOUS CLERICAL
TYPEWRITING DUTIES

Clerical Typewriting Duties (Areas)	Total Time	Percentage
Integration of materials and information	1,920	6.84
Filling in forms and form letters	9,760	34.80
Straight copy typewriting	2,540	9.06
Typewriting preparation for duplication	3,925	13.99
Typewriting on cards, envelopes, and labels	3,410	12.16
Preparation for and typewriting from rough drafts	2,630	9.38
Legal typewriting	450	1.61
Statistical typewriting	2,440	8.69
Recordative typewriting	975	3.47
TOTAL	28,050	100.00

CHAPTER VI

CONCLUSIONS

Introduction

Because no attempt is made in this study to determine the degree of difficulty in learning to perform the various areas of clerical typewriting, no definite recommendations for revising the training schedule in the high school second-year typewriting class will be made. It is the recommendation of the author that a supplementary study be made to determine the relative degrees of difficulty in learning to perform the duties so that those actual business time percentages can be supplied to the training classes in the high schools in Montgomery and Roanoke counties.

It is the hope of the author that the facts presented in this study will give the teachers of second-year typewriting a better idea of what business in their area demands of the clerk-typist and also give them an idea of the relative amount of work in the clerical typewriting areas required by the businesses. With this information, the teacher should be able to adjust his practice or laboratory sessions to parallel business demands more closely.

Time Percentage Comparisons

A comparison (between businesses and classrooms) of percentages of total time spent in performing duties in each of the clerical typewriting areas is presented in Table 8.

1. The teachers indicated that students should spend approximately nine per cent of all production time in learning and practicing the gathering of information and materials before typewriting is performed. The clerk-typists listed slightly less than seven per cent of the total time for this duty. The confidence limits set for the reliability of the clerk-typists' percentages were 1.50 per cent for the lower and 9.70 per cent for the upper; therefore, the classroom percentage fell within the confidence limits set for businesses.

2. Using Table 8 (all multiple-copy material and other duplicated areas are classified under their main headings in this table) for comparative purposes for the businesses, it is seen that 34.80 per cent of the clerk-typists' time was spent in filling in forms and form letters, while schools included in the study listed 29.92 per cent of the production time devoted to the area. The school percentage fell well within the confidence limits of 2.40 per cent to 51.40 per cent. (The confidence limits in this instance were found by adding the limits for Filling in forms and form letters to those of Filling in forms and form letters with multiple copies-- $.10 + 2.30$ for the lower limits and $13.40 + 36.00$ for the upper limits.)

3. There is less than one per cent difference between the percentages of time given to typewriting from straight copy by the high schools and that by the clerk-typists in Montgomery and Roanoke counties. The schools listed 9.85 per cent and the clerk-typists listed 9.06 per cent. The consolidated confidence limits were .84 per cent to 10.70 per cent; thus, both groups fell within the limits of reliability or confidence.

4. There appears to be a major difference between the two groups concerning typewriting in preparation for duplication. The schools devoted 4.96 per cent of the total time to this area, while the clerk-typists gave 13.99 per cent. Even though there is a wide spread between the two percentages, they both fell within the established confidence limits of 1.00 per cent to 15.50 per cent.

5. Clerk-typists spent a great deal of time in typewriting on cards, envelopes, and labels, as indicated by the percentage of 12.16 of the total recorded typewriting time. The production typewriting classes spent 4.88 per cent of their time doing the same sort of clerical typewriting. Confidence limits showing reliability of the clerk-typists' percentages were 2.60 and 19.50.

6. While the students were spending .77 per cent of the total production time in preparation for and typewriting from rough drafts, the clerk-typists were spending 9.38 per cent of their time doing similar work. The percentage of classroom time was slightly more than the lower confidence limits of .52 per cent, and the percentage of clerk-typists' time was slightly less than the upper confidence limits of 10.36 per cent.

7. The teachers of second-year typewriting in Montgomery and Roanoke county schools indicated their students spent more time than the textbook recommended (6.26 per cent for the text and 7.93 per cent for the classroom) in the area of legal typewriting. The clerk-typists interviewed, however, indicated they spent 1.60 per cent of their time doing that kind of typewriting. The confidence limits for this area were zero per cent to .69 per cent, indicating that both groups fell outside reliability at the five per cent level. The classroom percentage fell considerably outside the limits while the clerk-typists' percentage was much closer.

8. Statistical typewriting occupied 8.69 per cent of the interviewed clerk-typists' time, while the same area occupied 31.33 per cent of the classroom time. The combined confidence limits for statistical typewriting ranged from .06 per cent to 7.80 per cent. Although the percentage of neither group came within the confidence limits, the percentage for the clerk-typists came much closer to the 95 per cent reliability level.

9. The 1.28 per cent of total production time for recordative typewriting in the second-year typewriting class fell within the confidence limits of zero per cent to 2.51 per cent, while the 3.47 per cent in the offices included in this study fell slightly outside the upper limits.

10. The widest difference between the training and actual practice for any area of clerical typewriting was that of typewriting multiple

copies of material. The high school clerical typewriting classes spent only .38 per cent of their time performing this clerical typewriting duty, while clerk-typists in business made two or more carbon copies during 37.45 per cent of the total reported time. The combined confidence limits for the six areas in which multiple copies were made by the clerk-typists ranged from 2.36 per cent to 45.53 per cent.

Author's Opinions

1. Since the percentages of total typewriting time for both the classrooms and the clerk-typists included in this study in the areas of integration of information and materials, filling in forms and form letters, and typewriting from straight copy fell within the established confidence limits and were close in comparison, it is the author's opinion that no adjustment is needed.

2. Even though percentages for both groups studied for the areas of typewriting in preparation for duplication, typewriting on cards, envelopes, and labels, and preparation for and typewriting from rough drafts fell within the confidence limits, it is observed that the percentages for the classrooms and the percentages for the interviewed clerk-typists fell at opposite ends of the confidence limits. It is the author's opinion that even though there is a wide spread between the percentages of the classrooms and those of the offices, a recommendation for adjustment could not be justified in view of the fact that percentages for both groups fell within the confidence limits.

3. The percentages in areas of legal typewriting and statistical typewriting for both classrooms and clerk-typists interviewed fell outside the set confidence limits. The percentages for the clerk-typists, however, fell much closer to the upper confidence limits than did the classroom percentages. Once again because of the spread in percentages it is the opinion of the author that classroom adjustments should be made in order that the students be better prepared to accept employment as clerk-typists in Montgomery and Roanoke counties.

4. In the area of recordative typewriting the classroom percentages fell within the confidence limits, while the clerk-typists' percentages fell above the upper confidence limits. Because of the small difference in percentages, however, little adjustment of the classroom training is probably warranted.

5. It is the author's opinion that teachers of second-year typewriting in the high schools in Montgomery and Roanoke counties should require students in their classes to spend much more time in typewriting multiple copies. Not only did the classroom percentage for that area fall outside the confidence limits for the interviewed clerk-typists in the two counties, but also there was a difference of 37.07 per cent of total typewriting time between the two groups.

6. Finally, it is the suggestion of the author that teachers themselves study the local job market for clerk-typists to determine the need for training students to handle any special problems existing there in the field of clerical typewriting.

TABLE 8
COMPARISON OF SCHOOL AND BUSINESS PERCENTAGES

Clerical Typewriting Areas	Schools	Businesses
Integration of materials and information	8.70	6.84
Filling in forms and form letters	29.92	34.80
Straight copy typewriting	9.85	9.06
Typewriting preparation for duplication	4.96	13.99
Typewriting on cards, envelopes, and labels	4.88	12.16
Preparation for and typewriting from rough drafts	.77	9.38
Legal typewriting	7.93	1.61
Statistical typewriting	31.33	8.69
Recordative typewriting	1.28	3.47
TOTAL	99.62	100.00
Multiple copies	.38*	37.45

*The amount of multiple copy work in the classroom is so small it is not treated with main headings, but rather by itself to show significance of the small amount.

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The study certainly could not have been made without the aid of the eighteen clerk-typists and their supervisors. They gave generously and graciously of their time and energy to help the author compile the information concerning what is being done in the offices in Montgomery and Roanoke counties by the clerk-typists.

The second-year typewriting teachers of Montgomery and Roanoke counties also deserve thanks for their able contributions to the study. They enthusiastically gave their time and knowledge with the hope that they can better serve Montgomery and Roanoke county employers of clerk-typists and the clerk-typists themselves.

Special gratitude goes to Dr. Harry Huffman and Mr. J. Curtis Hall for their inspiration and patient guidance in helping make the study achieve its purpose in the best possible manner.

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VITA

The author was born in Grayson County, Virginia near the city of Galax on August 24, 1931. He attended high school in Galax and was graduated as Valedictorian of the Class of 1948.

He entered Virginia Polytechnic Institute in the Fall of 1948 in the Department of Business Administration. After spending two academic years there, he entered the Army in August, 1950 with the 780th Field Artillery Battalion, a Virginia Organized Reserve Unit. Of the 21 months the author spent in service, 11 of them were spent in Korea--April, 1951 to March, 1952. His unit received the Korean Presidential Unit Citation for "Exceptional Meritorious Service" for their contributions to the campaigns of "Bloody Ridge," Heartbreak Ridge," and "The Punch Bowl." He was released from active service in May, 1952 with the rank of Sergeant, and he returned to Virginia Polytechnic Institute in June of the same year.

After completing requirements for a Bachelor of Science Degree (with honors) in Business Education in September, 1953, the author continued his work in Business Education as a graduate student and as a Graduate Assistant in the Department of Business Education. Upon completion of a year of graduate study, he accepted (and holds at the present time) a position as Assistant Professor in the School of Business at Richmond Professional Institute, Richmond, Virginia in September, 1954.

Alonzo Lee Hall

APPENDICES I., II., III., IV.

APPENDIX I.

BASIC CLASSROOM DATA

Areas of Clerical Typewriting	1	2	3	4	5	6	<u>Teachers</u>						Average	
							7	8	9	10	11	12		
Integration of materials and information	340	340	340	340	340	340	340	340	340	340	340	340	340	340
Filling in forms and form letters	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170
Typewriting straight copy	385	385	385	385	385	385	385	385	385	385	385	385	385	385
Typewriting preparation for duplication	194	194	194	194	194	194	194	194	194	194	194	194	194	194
Typewriting on cards, envelopes, and labels	191	191	191	191	191	191	191	191	191	191	191	191	191	191
Preparation for and typewriting from rough drafts	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Legal typewriting	525	225	225	855	225	225	225	225	225	225	315	225	225	310
Statistical typewriting	1000	1450	1450	2125	1450	1000	1375	1375	1375	1000	1000	1000	1000	1225
Recordative typewriting	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Typewriting multiple copies	15	15	15	15	15	15	15	15	15	15	15	15	15	15
TOTAL														<u>3910</u>

APPENDIX II.

INTERVIEW SHEET FOR SECOND-YEAR TYPEWRITING TEACHERS

TITLE OF BOOK USED _____

WHERE DO YOU BEGIN FOR SECOND-YEAR TYPEWRITING? _____

WHERE DO YOU END? _____

DO YOU OMIT SOME EXERCISES? (YES) (NO) WHY? _____

DO YOU FOLLOW THE TIME SUGGESTIONS GIVEN IN THE BOOK? (YES) (NO)

IF NOT, WHY? _____

ON WHAT AREAS DO YOU SPENT MORE TIME? (HOW MUCH?) _____

LESS TIME? (HOW MUCH?) _____

DO YOU ADD OTHER AREAS THAT ARE NOT COVERED BY THE TEXT? (YES) (NO)

WHAT ARE THOSE AREAS? _____

APPENDIX III.

TIME CHART AND INSTRUCTIONS FOR COMPLETION

Time Chart

Instructions:

Fill in the blocks with numbers that show the type of work done. Enter for the closest half hour. You may enter two or more numbers in one block.

- | | |
|--|---|
| 1. Integration of materials and information | 6. Typewriting from rough drafts |
| 2. Filling in forms and form letters | 7. Legal typewriting |
| 3. Typewriting straight copy | 8. Statistical typewriting |
| 4. Typewriting preparation for duplication | 9. Recordative typewriting |
| 5. Typewriting on cards, envelopes, and labels | 10. Multiple copy typewriting (More than 2 carbons) |

	1	2	3	4	5
8:30- 9:00					
9:00- 9:30					
9:30-10:00					
10:00-10:30					
10:30-11:00					
11:00-11:30					
11:30-12:00					
	// // // // //				
1:00- 1:30					
1:30- 2:00					
2:00- 2:30					
2:30- 3:00					
3:00- 3:30					
3:30- 4:00					
4:00- 4:30					
4:30- 5:00					

If two types of work are done simultaneously, (such as making multiple copies of forms) enter both numbers.

Directions for Completion
of Time Chart

Instructions:

Fill in the blocks with numbers that show the type of work done. Enter for the closest half hour. You may enter two or more numbers in one block.

1. Integration of materials and information--time spent in gathering information and supplies before you start typewriting.
2. Filling in forms and form letters--time spent in typewriting on printed forms or form letters. Examples include: bills, invoices, requisitions, payrolls, etc. When there are more than two carbons, also enter 10 (Multiple Copy).
3. Typewriting straight copy--time spent in typewriting copies of other typewritten reports or material.
4. Typewriting preparation for duplication--time spent in typewriting stencils and masters.
5. Typewriting on cards, envelopes, and labels--time spent in typewriting on cards, envelopes, or address and file labels.
6. Typewriting from rough drafts--time spent in typewriting from handwritten or other corrected copy.
7. Legal typewriting--time spent in typewriting legal contracts and papers.
8. Statistical typewriting--time spent in typewriting tabulated figures and other material.
9. Recordative typewriting--time spent in typewriting financial reports, accounting records, and many other forms relating to bookkeeping and accounting.
10. Multiple copy typewriting--time spent in typewriting with three or more carbons. This number will be frequently entered with another number.

APPENDIX IV.

FORMULAE FOR COMPUTING CONFIDENCE INTERVALS

CI = Confidence Interval

θ = Percentage of time spent in each area by each of the 18 clerk-typists (expressed in terms of angles).

$\bar{\theta}$ = Average percentage spent by all 18 clerk-typists in a given area (expressed in terms of angles).

t = Significance factor at the five per cent level for 17 degrees of freedom.

$\Delta\bar{\theta}$ = Variance within each area of clerical typewriting.

The complete formula for computing the confidence intervals is

given below:

$$\Delta = \sum \theta^2 - \frac{(\sum \theta)^2}{18}$$

$$\Delta^2 \theta = \frac{\Delta}{17}$$

$$\Delta^2 \bar{\theta} = \frac{\Delta^2 \theta}{18}$$

$$\Delta \bar{\theta} = \sqrt{\Delta^2 \bar{\theta}}$$

$$CI = \bar{\theta} \pm t \Delta \bar{\theta}$$