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AUTHOR Ober, Bobby Scot  
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ABSTRACT

The problem in the study was to determine the makeup of typing tasks assigned to beginning office workers and to see how closely the practice problems in high school typing textbooks conformed to the duties that beginning office workers actually perform. Using sequential sampling procedures, copies of 531 items typed by 100 beginning office workers were compared with 943 production problems in two high school typing textbooks. Industry tasks contained more rough draft typing, self-composition problems, correspondence requiring judgment placement and formatting, and more extensive use of carbon paper than textbook typing assignments. Industry letters were also shorter and contained more subject and attention lines. Errors were nearly always corrected, most often by use of correction paper. The readability levels of the textbook problems were significantly different from each other and from industry typing. (Author)

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AN ANALYSIS OF THE BUSINESS WORKING PAPERS

TYPED BY BEGINNING OFFICE WORKERS

A PAPER PRESENTED TO THE BUSINESS EDUCATION RESEARCH

SECTION OF AERA

APRIL 2, 1975

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New developments in word processing together with changes brought about by the new copier and computer technology, have changed the nature of office work by making written communications more important than ever before. All of these developments have tended to generate more paperwork by making typing services more available. In fact, over one million new pages of paperwork are being generated every single minute of every working day. This is reflected in the fact that today clerical workers form the largest and fastest growing segment of the labor force.

The problem in this study was to determine the makeup of typing tasks assigned to beginning office workers and to see how closely the practice problems in high school typing textbooks conformed to the jobs that beginning office workers actually perform.

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The goal of typewriting instruction is to train prospective office workers for a broad spectrum of office typing assignments. This study included all kinds of businesses and all kinds of office typing jobs in its sample. Thus, the recommendations for textbook revision and curriculum changes contained in this study are based on a sample of what office workers in general are actually required to type.

The population for this study consisted of beginning office workers holding positions in business firms throughout the United States for whom typing was a primary job requirement; or more specifically, the population was the typed output of these workers.

#### Summary of Procedures

After a pilot test of the procedures had been carried out, a two-stage sampling process was used to collect a representative sample of working papers from the population of working papers produced by business. In the first stage, 250 business firms from throughout the country were selected to be sampled, and in the second stage, two workers from each business were selected to supply the necessary papers for analysis. The business firms--stratified

by industry in proportion to the number of secretaries, stenographers, and typists employed in each type of business--were sampled and asked to furnish the names of two of their beginning office workers.

Steps were taken to avoid as much bias as possible both in the selection of the individual workers by the managers and in the selection of the work samples the workers submitted.

The companies surveyed provided the names of 114 beginning office workers who then furnished carbon copies of 602 of their typing jobs for the analysis. Chi-square analysis confirmed that no significant differences existed in the proportion of industries represented in the population of beginning office workers and in the returns received.

A form of sequential analysis was used to determine the adequacy of the sample size. First, the 329 papers typed by a block of 60 workers, stratified by industry, were classified according to kind of item, such as letters, memorandums, forms, etc., and the proportion of each type of item was computed. Next the papers from a block of 20

additional workers were added to the papers from the original 60, and the kinds of items these 80 workers typed were computed. Finally, a third batch of papers typed by 20 additional workers was added to the 80 already drawn and the proportions were computed for the 531 papers typed by these total 100 workers.

The rank order of the kinds of items typed remained constant while increasing the sample size from 60 to 80 to 100 workers. The assumption was made that additional work samples from other workers would not result in any new data concerning the kinds of work produced by clerical employees. Therefore, sampling was terminated at 100 workers, and the 531 items they submitted formed the basis for the analysis of industrial typing.

In addition, all of the typing problems of a business nature from the two-year typewriting courses contained in Century 21 Typewriting by South-Western Publishing Company and Typing 300 by Gregg Division of McGraw-Hill were analyzed; these two textbooks account for approximately 95 percent of the high school typing textbook sales market. A total of

943 practice items from the textbooks was compared with the 531 items submitted by industry.

All of the data collected from both business and textbooks were transferred onto punched cards, and appropriate computer programs were used to provide the statistical analysis needed. A total of 44 variables were analyzed, as appropriate, for each of the items submitted--943 items from the textbooks and 531 items from industry.

Chi-square values were computed for each variable, the hypothesis being that no differences existed between levels of the variables under consideration.

In addition, the readability levels of the textbook exercises were compared to the typed specimens collected from industry, using both the Dale-Chall readability formula and the Gunning Fog Index. Forty passages of approximately 100 words each were randomly selected from the textbook typing problems and 30 passages, stratified by industry, were selected from the work samples collected from industry for the readability study.

One-way analysis of variance was computed to test whether a significant difference existed in the readability levels of the working papers typed by different industries. If a significant difference was found, the Tukey post-hoc procedure was used to determine which industries were significantly different in terms of readability. This test was selected because only two means were being compared at a time.

One-way analysis of variance was also used to test whether a significant difference existed in the readability of the various textbooks. When significant differences were found, the Scheffe post-hoc procedure was used to determine where the differences were, since more than two means were tested at a time.

(For example, the combined first- and second-year books of South-Western were compared with the combined first- and second-year books of Gregg.)

The major findings of this study are summarized as follows:

#### Kinds of Typewriters Used

Nearly 95 percent of the work samples submitted

7

were typed on electric typewriters, about evenly divided between standard machines (with typebars) and Selectrics. Only one percent of the machines had pica spacing. Proficiency on the more expensive and more complex proportional-spacing typewriters is not a skill requirement for beginning office workers.

#### Sources of the Material Typed

Some form of rough-draft typing (either all handwritten or handwritten and typed) was the source of about half of the material typed in industry but accounted for only 17 percent in the typing textbooks. Conversely, material that came to the typist completely typed for retyping (that is, basically straight-copy typing) accounted for only 15 percent of the total volume in industry; yet over three-fourths of the typing problems in the textbooks were completely typed. This was true in spite of the fact that the textbook analysis did not begin until the sections in which the students had mastered the keyboard and had begun typing problems of a business nature. The conclusion is that typing students may not be receiving enough practice in typing rough-draft material.



### Self-Composition

Beginning office workers composed 13 percent of the items they typed. The proportion of problems in the textbooks that were to be composed by the student typists doubled from the first year to the second year, but still averaged only 5 percent of all typing exercises, less than half that found in industry. Nearly one half of all the self-composed items in industry were letters; the corresponding figure for the textbooks was 28 percent. The effect of this is that the textbooks are not providing adequate practice in self-composition.

### Method of Setting Up the Typed Items

Two-thirds of the workers were not free to use their own judgment in setting up the items they typed; however, the workers set up letters and memorandums by judgment more often than by some kind of prescribed format, such as company policy or special instructions. Conversely in the textbooks, the students were nearly always given detailed instructions.

### Typing Copies

Of the industry typing problems that required copies, about half were made with carbon paper.

However, seven times as many textbook problems were typed with original only as were industry items--63% versus 9%. The conclusion is that the textbooks do not provide enough practice on assembling carbon packs and making corrections on carbon copies.

#### Making Corrections

Correction paper or tape was used for correcting errors made on over half of the items submitted by industry and was used nearly three times as much as the typing eraser. The often-heard admonition that such corrections, even though faster, were not allowed in business offices was found not to be true.

#### Kinds of Items Typed

The differences in the distribution of the items typed in industry and those contained in the textbook problems were great. Although tables constituted only about 4 percent of all typing tasks in industry, they appeared in the textbooks at least five times as great a proportion (21 percent); and reports, which are basically straight-copy typing, appeared three times as often in the textbooks as in industry. On the other hand, industry typing contained twice the proportion of forms and memorandums as were found in the textbooks.

Considering the textbooks together, the differences in the distribution of the items typed by industry and those contained in the textbooks are presumably attributable to the varying difficulty of typing different items and may not be serious. However, many differences were found between the individual textbooks and between the first- and second-year typing courses with regard to the distribution of the kinds of items typed. For example, one textbook had a lower percentage of letters than industry in its first-year text and reduced this proportion even more during the second year. Likewise, another textbook had a greater emphasis on reports during its first year than did industry, and the proportion of reports was even greater the second year. Such discrepancies have not been explained and should probably be remedied.

#### Makeup of Business Letters

In general, the makeup of the letters in the textbook problems followed closely that found in industry except that they tended to be longer. The most common length of letters typed in business offices was less than 100 words, but for the textbooks the most common length was between 100 and 200 words.

Letters submitted by the various business firms tended to be typed in a modified block style on regular sized stationery, using a five- to six-inch writing line with two to three blocked paragraphs, and including the signer's title but not the company name in the closing lines. Attention lines were used in about 23 percent of the industry letters and subject lines in about 38 percent; this was about twice their occurrence in the textbook letters.

Two major differences existed with reference to subject lines in industry and textbook letters. Not a single letter submitted by industry had the subject line placed below the salutation as advocated in the typing texts; and the most common wording used was either In Re or Re and not the word Subject.

The conclusion is that textbooks contain too few business letters with less than 100 words, and not enough letters include attention and subject lines.

#### Readability of the Typing Tasks

The average readability level of the typing problems contained in the two-year courses for both textbooks was grades 9 to 10 according to the Dale-Chall formula; for

industry, the readability level was grades 11-12.

The two textbooks were significantly different from each other and the combined first-year books had a significantly lower readability level than the second-year books. The readability level of industry typing was significantly more difficult than one of the textbooks but not the other. In addition, the typing tasks from insurance and banking offices were the most difficult (grades 13-15) and those from retail and wholesale trade the easiest (grades 9-11).

The two textbooks are not comparable with respect to the extent that the readability levels of their problems are consistent with the levels found in industry typing.

Studies such as this provide data concerning the kinds of typing tasks assigned to beginning office workers as well as the manner in which these tasks are required to be performed. Thus they provide a foundation around which the typewriting course can be structured so as to train those pre-expected competencies that can best be learned in the classroom.