

THE EFFECT OF INTERESTING AND NONINTERESTING COPY MATERIAL  
ON SPEED AND ACCURACY IN TYPEWRITING

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This study was conducted in order to determine whether or not the use of interesting copy materials in typewriting would produce greater speed and accuracy than would noninteresting copy materials.

Below are definitions of terms as used in this study.

- (1) Timed writings refers to straight-copy material.
- (2) Noninteresting timed writings refers to timed writings selected for use in this study from sources frequently used for timed writings (2, 4). These timed writings were judged by high school students as less interesting than the interesting timed writings.
- (3) Interesting timed writings refers to timed writings, the content of which was rated by high school typewriting students as more interesting than the noninteresting timed writings. (An example appears at the end of the article.)
- (4) Syllabic intensity refers to the mean number of syllables per word. Syllabic intensity is determined by dividing the total syllables in the timed writing by the total number of words in the timed writing.
- (5) Stroke intensity refers to the average length of words. This is determined by dividing the total number of strokes by the total number of words.
- (6) Standard words are measured by typewriting strokes--five typewriting strokes equal one standard word.
- (7) Readability refers to the grade placement of the timed writings determined by applying the Dale-Chall Formula for Predicting Readability (1).

Selection of Noninteresting Timed Writings

Five timed writings, which were initially classified as noninteresting, were taken from Lessenberry's 5th Edition of 20th Century Typewriting (2), and five timed writings initially classified as noninteresting were taken from Lessenberry's 7th Edition of 20th Century Typewriting (4). All of these timed writings are approximately 300 standard words in length, which provided adequate copy material for three-minute timed writings.

The following conclusion made by Norvell (5) in his research on adolescent reading interests was pertinent in the preparation of interesting copy material for this study:

In governing the choice of reading materials for children in our secondary schools, sex is a universal and highly significant factor. If children are to be provided with satisfactory materials, the reading interests of boys and girls must receive separate consideration.

Twelve stories considered to be of interest to high school boys and twelve stories considered to be of interest to high school girls were prepared for use in this study. The stories were approximately 300 standard words in length.

All the timed writings (both interesting and noninteresting) were equated in syllabic intensity, stroke intensity, and readability.

#### Securing Interest Ratings on the Timed Writings

All of the timed writings (interesting and noninteresting) were duplicated in pica type on legal size paper. Double spacing was used. An evaluation of the author's initial interest classification was made on December 15, 1958 by 52 boys and 77 girls enrolled in first-year high school typewriting at Gainesville High School in Gainesville, Florida. A seven-point scale appeared at the bottom of each of the 22 pages in the booklet in which the material (interesting and noninteresting) was arranged alternately.

All of the timed writings initially classified as interesting received a mean interest rating above the midpoint of the scale (above average in interest) and all of the timed writings initially classified as noninteresting received a mean interest rating below the midpoint of the scale (below average in interest).

The two interesting timed writings for girls and the two interesting timed writings for boys which received the lowest interest ratings were not used in the performance part of this experiment.

#### Administering the Timed Writings

Before the timed writings were administered, the 301 girls and 217 boys in 25 first-year typewriting classes in two Florida high schools (Gainesville High School was not one of these) took two three-minute timed writings (these had a syllabic intensity, a stroke intensity and a readability score equal to the other timed writings used in this study) on January 26 and 28, 1959. These two timed writings were taken from the 6th Edition of 20th Century Typewriting (3) which is the textbook the students were currently using in those

classes. A base speed and accuracy score for each student was determined by taking a mean of these two timed writings.

A table of random numbers was used to select the boys and girls in each class in order to divide each class as evenly as possible into the following groups:

- (1) Group of girls using interesting timed writings (hereafter referred to as the GI group)
- (2) Group of girls using noninteresting timed writings (hereafter referred to as the GN group)
- (3) Group of boys using interesting timed writings (hereafter referred to as the BI group)
- (4) Group of boys using noninteresting timed writings (hereafter referred to as the BN group)

The series of ten timed writings was administered to the different groups every other class day during the month of February, 1959, alternating them at the beginning and the end of the class period.

#### Scoring of the Timed Writings

All of the timed writings were scored to determine the number of total errors made in a three-minute writing and the gross words type-written per minute.

#### Analysis of the Data

Table 1 shows the mean gross words per minute and the mean errors in three minutes for the girls using interesting timed writings (GI), the girls using noninteresting timed writings (GN), the boys using interesting timed writings (BI), and the boys using noninteresting timed writings (BN).

Table 2 gives the comparison of performance on the entire series of ten timed writings with the base score for each group.

Table 1

## Summary of Mean Speed and Accuracy Scores

Mean of 2 Timed Writings Used for Base Scores		1	2	3	4	5	6	7	8	9	10
<b>(A) Girls Using Interesting Timed Writings</b>											
(1) Gross Words Per Minute	39.41	35.14	38.34	36.72	37.12	38.30	37.42	38.43	39.52	40.16	41.15
(2) Errors in Three Minutes	5.77	5.74	7.29	7.51	6.49	7.49	6.66	6.43	8.17	5.80	6.89
<b>(B) Girls Using Noninteresting Timed Writings</b>											
(1) Gross Words Per Minute	35.94	35.65	37.30	36.28	37.14	37.00	36.79	35.82	35.45	38.51	38.00
(2) Errors in Three Minutes	7.54	9.77	9.34	9.14	10.74	10.51	11.49	7.74	11.60	9.11	8.77
<b>(C) Boys Using Interesting Timed Writings</b>											
(1) Gross Words Per Minute	30.22	39.00	27.97	29.57	30.24	29.68	29.60	29.38	30.18	30.74	34.14
(2) Errors in Three Minutes	7.10	6.89	6.89	7.60	9.29	6.57	8.49	8.11	9.34	8.49	8.34
<b>(D) Boys Using Noninteresting Timed Writings</b>											
(1) Gross Words Per Minute	30.80	30.65	33.13	32.93	33.61	32.85	32.13	32.74	30.54	34.07	32.56
(2) Errors in Three Minutes	5.70	6.49	7.51	7.09	9.37	7.71	8.37	6.89	7.31	6.83	7.37

Table 2

Comparisons of Base Speed and Accuracy Scores With Averages  
On Entire Series of Ten Timed Writings

	Average Base Gross Words Per Minute	Average Gross Words Per Minute on Series of Timed Writings Completed	Average Increase Or Decrease in Speed	Average Base Errors Made in Three Minutes	Average Errors Made in Three Minutes on Series of Timed Writings Completed	Average Increase Or Decrease in Errors
Girls Using Interesting Timed Writings	39.41	38.23	-1.18	5.77	6.85	+1.08
Girls Using Noninteresting Timed Writings	35.93	36.79	+0.865	7.54	9.82	+2.28
Boys Using Interesting Timed Writings	30.22	29.75	-.47	7.10	8.00	+0.90
Boys Using Noninteresting Timed Writings	30.80	32.52	+1.72	5.70	7.49	+1.79
Total Group Using Interesting Timed Writings	34.82	33.99	-.83	6.44	7.43	+0.99
Total Group Using Noninteresting Timed Writings	33.37	34.66	+1.29	6.62	8.66	+2.04

The mean base gross words per minute for the GI group was found to be 39.41. The mean gross words per minute on the series of ten interesting timed writings taken by the GI group is 38.23, which is a decrease of 1.18 gross words per minute from the base speed score for this group. The mean gross words per minute for the GN group was found to be 35.93. The mean gross words per minute on the series of ten noninteresting timed writings taken by the GN group is 36.79, which is an increase of .865 gross words per minute.

The  $t$  test for significance, using the formula

$$t = \frac{M_1 - M_2}{\sqrt{\frac{\sum x_1^2 + \sum x_2^2}{N_1 + N_2 - 2} - \frac{N_1 N_2}{N_1 + N_2}}}$$

in which the GN group is group 1 and the GI group is group 2, the  $t$  was found to be 1.97, which indicated confidence at the 5 per cent level.\*

The mean number of errors in three minutes made as base error score for the GI group is 5.77. The GI group made a mean of 6.85 errors on the ten interesting timed writings taken by that group, which is an increase of 1.08 errors over the base error score.

When the  $t$  test for significance (see formula above) was applied to the error scores for the GN and GI groups, the value of  $t$  was found to be 1.20. This value does not indicate a statistically significant difference.

The speed and accuracy performance for the boys and for the total group can be read from Table 2 in the same manner as is explained above.

When the  $t$  test for significance (see formula above) was applied to the speed scores for the BN and BI groups, the value of  $t$  was found to be 1.28, which indicates a level of confidence of less than 10 per cent. When this formula was applied to the error scores for the BN and BI groups, the value of  $t$  was found to be .304, which indicates an absence of statistical significance.

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\*This means that there is one chance in twenty that a difference this large or larger would occur again just by chance, if the experiment were repeated.

Following the assumption that perhaps the students should have been allowed time to become acclimated to the new material and to the experiment, the results were analyzed, comparing gross words per minute on the last four timed writings in the series of ten with the base scores to determine the amount of increase or decrease in speed for each group.

Table 3 shows a comparison of the speed scores on the last four timed writings for each group with the speed scores for that group. Table 2 also shows the  $t$  value for the comparison of the scores and the level of confidence indicated by these  $t$  values.

### Conclusions

The conclusions drawn from the findings and from observations made by the investigator are as follows:

1. The students did enjoy typewriting from interesting timed writings.

2. An increase of four or five gross words per minute could be expected to occur over a four-week period of typewriting practice. Changes in typewriting speed during the experimental period of four weeks, as measured in this study, differed between the two groups by amounts which were significant statistically. But, there was not an appreciable increase or decrease in gross words typewritten per minute. The group using interesting material decreased less than one gross word per minute (.83), and the group using noninteresting material increased 1.29 gross words per minute.

3. Performance in typewriting accuracy could be expected to improve during a four-week period of typewriting practice. The accuracy of both groups used in this study did not improve during the experimental period; however, the changes in typewriting accuracy differed between the two groups by amounts which were not significant statistically. The group using interesting material increased less than one error (.99) in three minutes, and the group using noninteresting material increased 2.04 errors in three minutes of typewriting.

4. The students typewriting from interesting timed writings were able to recall the content of a greater number of the timed writings than were those students typewriting from noninteresting timed writings.

### Recommendations

The following are recommendations made on the basis of the conclusions drawn and on the basis of observations made by the investigator during the course of this study:

Table 3

Comparisons of Base Speed Scores With Averages On The Last Four Timed Writings In The Series

	Average Base Gross Words Per Minute	Average Gross Words Per Minute on Last Four Timed Writings in Series	Average Increase or Decrease in speed (Gross Words Per Minute)	t Value (see formula page 7)	Level of Confidence
Girls Using Interesting Timed Writings	39.41	39.82	+ .402	1.71	10%
Girls Using Noninteresting Timed Writings	35.93	36.94	+1.01		
Boys Using Interesting Timed Writings	30.22	31.12	+ .90	2.058	5%
Boys Using Noninteresting Timed Writings	30.80	32.48	+1.68		



1. Further research should be done concerning the use of interesting copy materials in high school typewriting classes.

2. Interesting materials should be used for a longer period of time in a typewriting class--longer than the period of time used in this study. Students should be given more time in which to become accustomed to using this kind of material.

3. Perhaps the interesting material should not be as absorbing as that interesting material used in this study.

Note: The following is a sample of the interesting timed writings:

F-12 and G-5

The investigator from the insurance company believed that murder and not suicide was the cause of death. 57  
103

An eccentric millionaire, who was known to be afraid of falling from high places, died of starvation in the gymnasium of an old private school he had recently purchased. He had shared his estate with four Indians he had met in the East. Investigation indicated that he had recently purchased a large insurance policy in which he named the four Indians as beneficiaries. It was his custom to lock himself in the gymnasium for weeks at a time in order to write and think. The body was found on an iron bed in the middle of the floor. His food had not been touched. Nothing was written on the paper. The only door was locked and bolted from the inside. The only window, a skylight, had bars four inches apart. No one could have entered the room. 158  
219  
278  
337  
399  
453  
509  
567  
628  
686  
746  
806  
838

The bed was situated in the middle of the floor. Scratches on the floor showed evidence that the bed had been moved out from the wall, but the marks stopped two inches short of where the bed now stood. The doctors had ascertained that no drugs or poison had caused his death. He had been murdered. How? 897  
957  
1019  
1080  
1140

The marks on the floor were the clue that pointed to murder. The Indians, knowing that they would receive the insurance money, had secretly given him sleeping pills in his food before he entered the room. When he was asleep, they lowered four ropes through the skylight, hooked the bed, and pulled the man and bed up to the sixty-foot ceiling. They knew he was afraid of high places and would starve rather than jump to his death. Carelessness in lowering the bed was the telltale mistake made by the murderers. They missed their mark by two inches. 1192  
1249  
1310  
1368  
1428  
1486  
1548  
1608  
1666

#### REFERENCES

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