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A Study to Determine the Effectiveness of the Gregg Series Seven Method of Teaching Typewriting I

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A STUDY TO DETERMINE THE EFFECTIVENESS OF THE GREGG SERIES SEVEN METHOD OF TEACHING TYPEWRITING I

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INTRODUCTION

The new wave of high technology caused numerous changes in the modern office. However the typewriting keyboard remained as the main medium of communication in most systems. New requirements in the workplace created new needs in the classroom along with new directions in instruction. Old textbooks no longer met the challenges of modern technology.

In the midst of those changes, Portsmouth Public Schools formed a textbook adoption committee to decide upon a new typing book. The book selected by the committee incorporated the requirements of competency-based education and technological advances with a different approach in methodology. The teaching method employed in the text was termed Gregg Series Seven, published by Gregg Publishing Company. The approach was based on the concept of pretest/practice/posttest instruction. This method was used in teaching all the necessary typing skills from keyboarding to formatting.

An additional premise of the Gregg Complete Typing Course textbook involved teaching related communication skills simultaneously with keyboarding skills. This was developed to meet the current trend toward the cluster concept of word processing centers where isolated keyboarding skills were no longer sufficient. Because change has never been easy, a major area of interest among Portsmouth business teachers was the ultimate effectiveness of the new approach to teaching typewriting.

STATEMENT OF THE PROBLEM

The problem of this study was to determine the effectiveness of the Gregg Series Seven, competency-based pretest/practice/posttest method of teaching typewriting skills in Typewriting I classes in Portsmouth Public Schools.

RESEARCH HYPOTHESES

Through the analysis of the data collected from tests given to four classes of Typewriting I classes, the following hypotheses were considered:

1. Students taught to type by Gregg's Series Seven method will reach higher levels of speed with greater accuracy on straight-copy material than students taught by non-directed means.

2. Students taught using the simultaneous approach of teaching skill-building, production, and language arts skills employed by the Gregg Series Seven method will complete a greater number of problems with greater accuracy in timed production work than students not receiving the simultaneous instruction.

BACKGROUND AND SIGNIFICANCE

Traditionally, learning to type was viewed as an individual learning process that required limited teacher involvement. Students learned to type through repetitive drill on textbook lines. This repetitive drill was followed by a timed drill to measure achievement. Students were then responsible for their own error-analysis and selective practice, while the teacher facilitated

the self-discipline required for learning a new skill. This textbook approach lacked goal-setting and guided practice based on clearly identified student needs. The traditional method also did not force much teacher involvement.

In 1972 and 1973, Dr. Fred Winger conducted research at Oregon State University that borrowed a premise from Thorndike's theory that "knowledge of results provides the best motivation for building any skill" (Lloyd, Winger, et. al., 1982, p. T6). From that concept evolved the pretest/practice/posttest method of teaching typewriting.

Skill-building became a more teacher-directed activity that promoted improved keyboarding through the use of a planned program. Selective practice drills were based on measurable needs and not part of a trial-and-error method. Different techniques and goals were also emphasized for the separate development of speed or accuracy. Students were able to readily assess weaknesses and to chart improvement through teacher-directed practice (Holmes and Eide, 1981, p. 13).

With the technological advances in communication, students were also required to apply the communication skills related to keyboarding in the areas of language arts. Teachers were charged to "overteach" such skills and to emphasize decision-making skills earlier (Burford, 1980, p. 292). This need was incorporated into the pretest/practice/posttest method and created a three-pronged approach to teaching typewriting--1) skill-building, 2) production, and 3) language arts (Lloyd, Winger, et. al., 1982, p. T7).

LIMITATIONS

This study was limited to four classes of Typewriting I students at Churchland High School in Portsmouth, Virginia. These classes were instructed by two individual teachers with accompanying personality differences and instructional styles.

ASSUMPTIONS

This study was based on the following assumptions:

1. The analysis of test results would reveal information that would be helpful in determining the effectiveness of the Gregg Series Seven method of teaching typewriting.

2. Those teachers using the Gregg Complete Typing Course textbook would more closely follow the text design upon determining its effectiveness.

PROCEDURES

A test was developed incorporating a timed writing from straight-copy paragraph material and simple production problems. This test, along with an explanation, was administered to the four selected Typewriting I classes at Churchland High School. Of the four selected classes, two were chosen to represent the control group and were instructed by the traditional teaching method. The remaining two groups became the experimental groups and were instructed according to the Gregg Series Seven pretest/practice/posttest method. The results of the testing were tabulated and an analysis using the t-test statistical

procedure were used to evaluate the effectiveness of the Gregg Series Seven method of teaching typewriting.

DEFINITION OF TERMS

Terms used in this study were defined as follows:

Error - Misstroke in a word, number, or incorrect spacing.

Gregg Series Seven - Cyclical method of teaching typewriting that used the pretest/practice/posttest approach.

Group-cadence pattern - All students repeated the same practice drill simultaneously.

Posttest - Means of measuring student achievement that resulted from directed practice by repeating the exact requirements of the pretest. This procedure allowed the monitoring of students' progress and provided immediate feedback.

Practice - Drills designed to strengthen students' weaknesses as identified by the pretest.

Pretest - This consisted of a timed drill to assess stroking speed and accuracy in completing an assignment.

Production - Students were required to correctly apply skills learned by completing specified typed problems within a stated time frame.

Straight-copy - Strictly regulated paragraphs of typed material that was to be copied by the student, line for line, exactly as shown. This paragraph did not contain numeric symbols.

Syllabic intensity index - Computed by dividing the number of actual words in the copy into the total number of syllables of all words. The syllabic intensity (SI) is used to indicate the relative difficulty of the copy and the higher the number, the more difficult the copy.

Words - A combination of five typewritten strokes were the equivalent of one typewritten word.

SUMMARY

In Chapter One of this study, the problem and hypotheses were identified. The problem stated was to determine the effectiveness of the Gregg Series Seven approach to teaching typewriting in Portsmouth Public Schools. The background and significance of the study, as well as the limitations, assumptions, and definitions of terms used within the study were also given. In addition, a brief description of the procedures used to gather pertinent data was given.

In the following chapters, a review of literature pertaining to the problem was presented, along with a detailed explanation of the procedures used to collect and analyze data and the results was included. The final chapters reported the results of the testing, presented a detailed analysis of the results, and gave a summary of the research study and conclusions made based on data collected.

CHAPTER II

REVIEW OF LITERATURE

An area of concern for teachers of Typewriting I in Portsmouth Public Schools was the effectiveness of the recently adopted text, Gregg Complete Typing Course. The new text was organized differently and used a different teaching technique than Century 21 Typewriting, published by Southwestern, that had been used consistently in preceding years.

The Gregg Series Seven approach to teaching typewriting used a pretest/practice/posttest routine that was designed to aid the student in diagnosing areas that needed additional work in developing skill. Upon completing a pretest on a designated drill, students were directed to practice according to the individual's specific needs as derived from the pretest results. A posttest, on the same lines designated for the pretest, enabled students to immediately see skill development gained through appropriate practice.

Southwestern's text did not provide a means to individualize practice based on identified student needs. Southwestern's approach in presenting new material was also at a much slower pace. Pretesting was not used in any form.

PRETESTING

Pretesting allowed the students to identify specific speed and accuracy needs through the use of a 2-, 3-, or 5-minute timed writing

prior to instruction or practice. Upon identifying needs, goals were set by each student and practice was selected to meet those goals. This practice, selected from pretest results, in theory would increase the student's speed, accuracy, and efficiency in typewriting.

While the attainment of speed, accuracy, and efficiency were identified as goals in learning to type, it was also noted that a number of factors were involved in reaching these goals. Among the factors given were the innate ability of the student, motor coordination, teacher performance, and instructional materials used (Deighton, 1971, p. 286). Due to identified differences in innate ability, along with differences in past experiences, it was determined that students also differed in the amounts and kinds of practice needed to develop optimum skill levels in typewriting. In Clem's view, the combination of these differences made the teaching of typewriting a complex process. Her studies promoted diagnosing student needs through testing so that the teacher would be able to better direct methods and techniques toward improving students' skills. Test results would allow the teacher to provide instructional materials and strategies that were modified to meet individual student needs (1955, p. 300).

In research conducted by Leonard J. West for his book Acquisition of Typewriting Skill, conclusions concerning pretesting revealed that pretesting was a useful tool in diagnosing students' present skill level and learning differences. Pretesting also provided an index of the spread in student aptitudes for keystroking. This teaching/learning technique also proved to be a motivational factor because its use indicated to students the relationship between instruction and practice and the ultimate improvement in skill levels (1969, pp. 212-213). West also claimed that specific,

individualized goal-setting was prmoted through pretesting and led to increased skill (1969, p. 253).

Goal-setting in itself has been praised for its effectiveness as a teaching tool for skill development. Promoters argue that no one ever typed well without intending to type well (Deighton, 1971, p. 289). Additional research supported goal-setting as a natural outcome of pretesting by claiming that student participation in goal-setting led to better student performance (McClean, no year available, p. 7).

After completing the pretest, the student was instructed to analyze his/her efforts. This activity was guided by the teacher and led to the joint selection of appropriate practice material.

PRACTICE

Past teaching methods, which introduced material with little or no preparation or follow-up, emphasized a "hit-or-miss" approach to encouraging accuracy development (Schuette, 1982, p. 7). Textbooks were designed with drill work in the beginning lessons and again in the middle of the text, rather than dispersing the drill material throughout the lessons. To provide more effective practice, pretesting was introduced as a diagnostic tool, followed by assigned practice from drill that was appropriate for the individual student. Rather that the use of the ineffective group-cadence pattern for practice work, drills would be selected to fulfill specific, pre-determined needs (Deighton, 1971, p. 288). Clem supported this evidence in her work and commented that the first step in successful practice was to provide students with a motive or purpose for the practice (1955, p. 85). She carried this idea further with the statement that skill growth was largely obtained

through the correct kind of practice; not solely from randomly selected drill (1955, p. 99).

Schuette's findings led him to direct that diagnostic activities (pretesting) followed by remedial activities (practice) should take place in typing classes several times a week for the first year (1982, p. 8). West cautioned teachers to use care in the selection of and assigning of drills for student practice. "Overpractice" created plateaus in speed and accuracy development because of student boredom or declining motivation. Boredom and lack of motivation were attributed to incessant, repetitive practice outside of identified purposes (1969, p. 497).

Since the purpose of practice was to improve skill, students were re-tested (posttest) on the same material used for pretesting. The results were used to determine if actual improvement occurred and provided the students with immediate feedback as to their progress.

Feedback, however, has not always been recognized as an effective learning tool. In a research study on learning conducted by Hyman and Tobias, findings contended that this type of immediate feedback from pretest/practice/posttest had no effect in increasing learning that occurred in subjects. In fact, results of their testing indicated that as much or more was learned in instances where reinforcement (feedback) was ommitted altogether (1981, p. 1). Other testing by Thorndike, offered another view of the effect of feedback on learning. In skill building, his research indicated that some form of "general directional feedback is better than no feedback, and explicit directional feedback is better than general directional feedback, expecially in early stages of learning" (McClean, p. 2). Gregg supported the latter's theory and specific posttest material was provided.

POSTTEST

To receive an accurate measure of skill development, posttests consisted of material identical to the pretests. In testing, typing skill was generally expressed in words per minute and errors per minute. Such tests required that paragraph material be copied for a designated period of time, and then analyzed to determine the rate of speed accomplished as compared to the number of errors made.

West determined that true gains in skill on these tests required still larger gains in skill through the use of practice material. He also maintained that testing must occur periodically to measure gains in skill development that were made during practice (1969, p. 292). Clem concluded that tests, as used in typewriting, illuminated student difficulties in specific areas, which allowed remedial instruction to be planned. Testing also aided in determining when students reached satisfactory levels of achievement and stimulated students to greater effort by keeping them informed of their progress. Tests also provided the teacher with a measure of the effectiveness of selected teaching strategies and materials (1955, p. 297).

Skill development, as measured by posttests, was necessary in order for the student to become proficient in completing typed problems in the form of reports, letters, etc. Practice provided the means for the student to complete meaningful typed copy, referred to as production typing.

PRODUCTION

In research conducted, evidence was presented to collaborate the theory that building production power in conjunction with frequent timed production was an excellent strategy for building overall skill. Further, that previewing material enabled students to type fluently and was conducive to the formation of desireable habits (Deighton, 1971, p. 289). However, it was a widely accepted fact among experts that an appreciable loss was experienced between measured straight-copy rates and measured production rates (West, 1969, p. 337). Indeed, research evidence indicated that there was little relevance in high straight-copy skills as transferred to production proficiency (West, 1969, p. 352). This relationship held true consistently in measured accuracy but showed some favorable comparison in terms of speed transfer (West, 1969, p. 353).

Related skills were improved through production work in typewriting in the category of language arts. Experts noted that spelling improved through copying correctly written material, an expanded business vocabulary was developed, and editorial skills improved among typing students (Deighton, 1971, p. 287). The Gregg Series Seven method chose to use this theory to emphasize language arts skills in early lessons. The desired end-product was a student capable of typing assigned production work with some speed in an accurate and correct manner (Lloyd, Winger, et. al., 1982, p. T3).

SUMMARY

Chapter Two presented research material that existed concerning the use of the individual components of the Gregg Series Seven method of

teaching typewriting--pretesting, practice, and posttesting. The chapter also presented research data that suggested that production typing was related to skill development. Chapter Three explained in detail the methods and procedures used to determine if the pretest/practice/posttest technique in teaching typewriting was effective in improved skill development.

CHAPTER III

METHODS AND PROCEDURES

The problem of this study was to determine the effectiveness of the Gregg Series Seven, competency-based pretest/practice/posttest method of teaching typewriting skills in Typewriting I classes in Portsmouth Public Schools. This chapter explained in detail the methods and procedures used to collect this information from the classes selected as subjects. Following were sections on selecting the population, teaching techniques, data collection, and summary.

SELECTING THE POPULATION

The population of this study consisted of four selected Typewriting I classes at Churchland High School, Portsmouth, Virginia. Class selection was based on the interest of the Typewriting I teachers in participating in this study. Three of the classes that participated were under the instruction of Mrs. Sharon Oast, and one was under the instruction of Mrs. Sandra Fields. These classes were taught at various times of day, extending from first period (8:00 - 8:54 a.m.) through sixth period (1:20 - 2:15 p.m.). Two of the classes taught by Mrs. Oast were designated as experimental groups. The experimental groups were instructed through the strict use of the text, Gregg Complete Typing Course. Mrs. Oast's remaining class and Mrs. Fields' class were designated as control groups and were taught without the use of the pretest/practice/posttest technique.

Those classes not receiving the pretest/practice/posttest method of instruction were assigned many of the same drills, but in random order, without specifically identified goals. Such assigned practice was not followed by any form of evaluation that would indicate to the student whether or not progress occurred.

TEACHING TECHNIQUES

In introducing the typewriter, all classes received similar instruction. For example, in teaching the keyboard, instruction involved pointing out the key to be mastered on a wallchart depicting a typewriter keyboard. Students were then shown by the instructor which finger controlled that key and were directed through a short practice line by teacher-dictation.

At this point in instruction, control groups were simply assigned to type a set of lines that provided drill on the key being taught while the teacher visually evaluated student performance. The time allowed was at the discretion of the instructor. The experimental groups were directed to type the same drill lines as the control groups for a specific time period, designated in advance by the instructor (pretest). Upon the completion of the assigned drill, students were guided by the instructor in the evaluation of their work in terms of the number of lines completed, as well as the number and kinds of errors made. Additional practice lines were then assigned based on student need as determined by the pretest. The instructor was present at all times to visually evaluate and direct student practice. Upon the completion of selected practice lines, students were again instructed to type the same lines used in the pretest for the same amount of time. Students were again directed in evaluating their work and charting progress. Other typewriting units were taught by a similar method.

DATA COLLECTION

A test was designed to collect the necessary data relating to methods of instruction. This test was to be given at the conclusion of the first semester of typewriting instruction. Both experimental groups and the control groups were given the same test which consisted of two three-minute timed writings on straight-copy paragraphs and three problems to be formatted correctly within a time limit of thirty minutes. The paragraphs selected for the timed writings had a syllabic intensity index (SI) of between 1.25 and 1.3, an indication of relatively easy copy. The problems selected for formatting consisted of handwritten material that required the typist to exercise decision-making skills in placement. The problems were identified as an enumeration, an informal note, and a display item. A copy of this test was included in Appendix A. Upon the completion of this test, the results were calculated manually and compared through the use of the t-test formula.

SUMMARY

In summary, this chapter described the methods and procedures used for collecting the research data necessary for the stated problem. Chapter Four described further the findings from the test administered and provided an analysis of the test results.

CHAPTER IV

FINDINGS

The purpose of this study was to determine the effectiveness of the Gregg Series Seven, competency-based pretest/practice/posttest method of teaching typewriting skills in Typewriting I classes in Portsmouth Public Schools. The results of the data collected from testing were presented in this chapter. The data was then used to determine if the following hypotheses were validated:

1. Students taught to type by Gregg's Series Seven method will reach higher levels of speed with greater accuracy on straight-copy material than students taught by non-directed means.

2. Students taught using the simultaneous approach of teaching skill-building, production, and language arts skills employed by the Gregg Series Seven method will complete a greater number of problems with greater accuracy in timed production work than students not receiving the simultaneous instruction.

To collect this data, a two-part test was designed. Part One consisted of two three-minute, straight-copy timed writings that had an SI of 1.25 and 1.3. Of the two timings, the one that resulted in the highest speed/accuracy level was recorded for comparison by the experimenter. Part Two consisted of three handwritten problems to be correctly formatted by the students within a time-frame of thirty minutes. The number of problems completed by

by students and the number of errors occuring in the completed problems were recorded for comparison by the experimenter. The results of these comparisons appear in Tables I - IV. The control group consisted of forty-one students. The experimental groups consisted of thirty-five students.

EXPLANATION OF TABLES

Table I summarized students' speed and accuracy levels on Part One (timed writings) of the test administered. Results indicated that there was very little difference between the control group, taught by Southwestern's random-practice method, and the experimental groups, taught by Gregg's Series Seven method, in speed/accuracy comparisons.

Table II showed results of Part Two (production) of the test administered and the results indicated the experimental group taught by the Gregg Series Seven method completed more work with fewer errors than the control group. The average score of the experimental group was 2.02 problems with an average of 1.67 errors, while the control group averaged 2.73 problems with 3.52 errors.

Table III gave the calculated mean for each group completing the test. In each part of the test given, the control group had the higher mean (27.78 words per minute with 3.39 errors for Part One, and 2.73 problems completed with 3.52 errors in Part Two), except the mean errors for the timed writings that were given (3.39 errors as compared to 4.89 errors for the control group).

Table IV showed the "t" score for each portion of the test taken by students. For three-minute timed writings, the "t" comparison for speed was .07 and the "t" comparison for accuracy was -2.78. In Part Two (production), the "t" comparison for problems completed was 5.07 and the "t" comparison for errors was 2.61. The "t" score indicated a neglible

difference in scores on the timed writing portion of the test with a mean of 27.78 words per minute for the control group, and a mean of 25.66 words per minute for the experimental group, and a "t" comparison of .07; however, that was a significant difference on the production portion of the test with a mean of 2.73 problems/3.52 errors for the control group, and a mean of 2.02 problems/1.67 errors for the experimental group, and a "t" comparison of 5.07.

SUMMARY

The purpose of this study was to determine the effectiveness of the Gregg Series Seven, competency-based pretest/practice/posttest method of teaching typewriting skills in Typewriting I classes of Portsmouth Public Schools. This purpose was accomplished by selecting control and experimental groups and instructing the control group by Southwestern's random-practice method with no goal-setting, and instructing the experimental group by Gregg's Series Seven method, which included goal-setting. Results of the tests administered to gather data were recorded and noted. Chapter Five provided a summary of this study along with conclusions and recommendations that resulted from the interpretation of the collected data.

TABLE I

Results of Three-Minute Timed Writings

for Experimental and Control Groups

(PART ONE OF TEST)

Experimental Group (Speed/Errors)		Control Group (Speed/Errors)	
37/8	17/0	43/4	23/1
36/7	15/4	42/3	22/5
35/5	14/2	40/7	22/5
34/3	14/0	39/4	22/15
34/3		37/4	22/1
33/8		33/8	21/3
33/3		33/4	19/2
31/7		33/3	18/3
31/5		32/7	15/2
30/10		32/4	
29/4	TOTAL TESTED= 35	32/3	TOTAL TESTED= 41
29/3		31/5	
28/4		31/2	
27/8		31/1	
27/8		29/3	
27/7		28/7	
27/4		28/4	
27/3		28/4	
26/4		28/3	
26/16		27/3	
25/2		27/2	
24/4		27/1	
24/15		26/2	
22/4		26/2	
21/4		26/1	
21/4		25/3	
21/3		24/5	
19/6		24/4	
19/2		24/3	
18/6		24/1	
17/5		23/3	

TABLE II

Results of Production Work for

Experimental and Control Groups

(PART TWO OF TEST)

EXPERIMENTAL GROUP		CONTROL GROUP	
Number of Students	Problems Completed/ Errors	Number of Students	Problems Completed/ Errors
4	3/0	4	3/0
2	3/1	7	3/1
1	3/3	4	3/2
1	3/6	4	3/3
1	2.75/3	2	3/4
1	2.75/1	4	3/6
5	2/0	2	3/7
2	2/1	3	3/8
4	2/2	1	3/9
2	2/4	1	3/10
1	2/6	1	3/21
1	2/7	1	2.25/1
1	1.75/2	2	2/0
3	1.5/0	1	2/1
1	1.5/3	1	2/2
1	1/0	1	2/4
2	1/1	2	1.25/1
2	1/3	1	1/1
1	.5/1		
TOTAL= 36		TOTAL= 42	

TABLE III

Mean Results of Test Scores

for Experimental and Control Groups

	Experimental Group	Control Group
Mean results of three-minute timing	25.66 wpm/ 4.89 errors	27.78 wpm/ 3.39 errors
Mean results of thirty-minute production	2.02 problems/ 1.67 errors	2.73 problems/ 3.52 errors

TABLE IV

t-Score Comparisons for

Experimental and Control Groups

Three-Minute Timed Writings	Speed	t = .07
	Errors	t = -2.78
Thirty-Minute Production	Problems Completed	t = 5.07
	Errors	t = 2.61

CHAPTER V

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

The problem of this study was to determine the effectiveness of the Gregg Series Seven, competency-based pretest/practice/posttest method of teaching typewriting in Typewriting I classes in Portsmouth Public Schools. This chapter summarized the procedures used in this research, drew conclusions concerning the research findings, and made recommendations based on those findings.

SUMMARY

Technological advances, especially in the area of communications, created new standards and a different emphasis on skills needed in the modern office. These changes required that classroom methods and emphasis also change in the training of future employees.

To adapt to the new requirements, business education teachers in Portsmouth Public Schools selected the typewriting textbook Gregg Complete Typing Course, published by the Gregg Publishing Company. The new text employed the pretest/practice/posttest approach to teaching Typewriting I and the change in method was met with some skepticism. The skepticism produced an interest among business teachers in the effectiveness of the pretest/practice/posttest method and of the new textbook.

In an effort to determine if the new textbook, Gregg Complete Typing course, would prove more effective than the prior text, Century 21 Typewriting, published by Southwestern Publishing Company, four classes

at Churchland High School, Portsmouth, Virginia, were designated for research. Two of the classes were designated as control groups and taught using Southwestern's random practice method, and the remaining two classes were designated as experimental groups to be instructed by Gregg Series Seven method of teaching typewriting. After one-semester of specialized instruction, all four classes were given a test consisting of two three-minute timed writings and a thirty-minutes of production work. The results of the tests were compiled and "t" scores calculated for comparison.

The data collected from the tests were used to determine the validity of the following hypotheses:

1. Students taught to type by Gregg's Series Seven method will reach higher levels of speed with greater accuracy on straight-copy material than students taught by non-directed means.

2. Students taught using the simultaneous approach of teaching skill-building, production, and language arts skills employed by the Gregg Series Seven method will complete a greater number of problems with greater accuracy in timed production work than students not receiving the simultaneous instruction.

CONCLUSION

The findings of this study indicated that the use of the Gregg Series Seven, competency-based pretest/practice/posttest method of instruction caused no significant difference in speed and accuracy levels of beginning typists instructed by this method and of those instructed by the Southwestern

random practice method. Based on the measure of central tendency, the control group showed a slightly higher speed level with fewer errors than the experimental group. The t-test comparison, however, indicated that there was no significant difference in the scores of the two groups. These results negated the first research hypothesis: 1. Students taught to type by Gregg's Series Seven method will reach higher levels of speed with greater accuracy on straight-copy material than students taught by non-directed means. From the data collected, it appeared that selective practice with immediate feedback did not cause students to obtain higher skill levels in timed straight-copy material, but that it was the time spent in practice, alone, that caused an increase in skill.

The t-test comparison did indicate a significant difference in the scores of the experimental groups and control groups on the production portion (Part Two) of the test administered to the four groups. The findings showed that the experimental groups produced more work with a fewer number of errors than the control groups. This part of the test was a more realistic example of office-style typing and, therefore, more meaningful in terms of the effectiveness of Gregg's approach to teaching typewriting skills. The data recorded supported the second research hypothesis set forth in Chapter One of this study: 2. Students taught using the simultaneous approach of teaching skill-building, production, and language arts skills employed by the Gregg Series Seven method will complete a greater number of problems with greater accuracy in timed production work than students not receiving the simultaneous instruction.

Since a major goal in learning to type was to prepare for an entry-level position in an office, the results of the comparison of scores in Part Two of the test were the most appropriate indicator of the students' potential for success in such an entry-level position.

RECOMMENDATIONS

Based on the research findings and the major goal in learning to type, the following recommendations were made:

1. Typewriting I instructors should use the Gregg Complete Typing Course textbook to teach Typewriting I classes in Portsmouth Public Schools and to provide varied practice drills as appropriate to the needs of the students. The drills in the text can be assigned in random order without spending time on pretesting, posttesting, or goal-setting. It is more important to allow time for actual practice than to rigidly structure practice sessions.

2. The simultaneous approach of teaching skill-building, production, and language arts skills was successful and should continue to be used as given in the Gregg Complete Typing Course text. Time spent on these related skills did improve the quality of output and was important in the training of students for entry-level position in offices.

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APPENDIX A

APPENDIX A

TYPEWRITING I COMPETENCY TEST

This test is designed to measure student achievement levels after completing one semester of Typewriting I instruction. The test is divided into two parts : Part I - Timed Writings, and Part II - Production.

Part I: Timed Writings

Students will be given one three-minute timed writing on each of the straight-copy paragraphs shown in Part I. Upon completion of the speed tests, students are to determine and record their speed in words-per-minute over the total number of errors made. (Information may be recorded in the right margin of the timed writing.)

Part II: Production

Students will be given thirty-minutes to complete the three problems shown in Part II. They are to use standard formats learned for each type of problem. Additional instructions are included with each problem along with directions for student decision-making.

Part I: Timed Writings

Paragraph 1

Typewriter spacing is regular; that is each letter of 4
the alphabet uses the same amount of space. Most type used 8
by printers, though, varies in space; that is, wide letters 12
take more space than narrow ones. Every line of typed copy 16
lines up at the left side but usually not at the right. 19

Printers can force lines of different lengths to align 23
at the right side by adjusting the space between words. As 27
you copy from print, then, do not expect every line to stop 31
at quite the same point. Many students and more than a few 35
teachers are puzzled by this peculiar quality of print. 39

3' | 1 | 2 | 3 | 4

Paragraph 2

All of you make an error now and then in performing an 3
act like driving a car, doing the high jump, or playing the 8
piano. Typing is no different. To err is human. The more 12
difficult the activity, the greater the opportunity to make 16
errors. Do not expect all your work to be correct now. 19

Do not infer from this, though, that the more mistakes 23
you make, the more human you are. A lot of your errors are 27
merely chance; why you make them is a real puzzle. Others, 32
however, are known to be due to lack of attention, improper 35
reading, and bad techniques. Try to reduce the latter. 39

3' | 1 | 2 | 3 | 4

PART II:

LEVEL COMPETENCY CHECK

The student organizations at your high school are getting together to have their annual summer picnic. As program chairperson for this event, you have been assigned to prepare several items of correspondence relating to the picnic.

JOB CC1-1. ENUMERATION

Prepare a list of the contributing club sponsors for this year's clubs. Put them in alphabetical order. Standard format.

Contributing Club Sponsors
For the Year 19--
1. Serendipity
2. The Mill
3. Downtown Hardware
4. Tanenbaum's
5. Bonanza
6. Hilldale Farms
7. Barney's Barn
8. Ann's Car Wash

JOB CC1-2. DISPLAY

Format: You decide.

SCHEDULE OF EVENTS
Student Clubs' Picnic
Saturday, July 2, 19--

Arrive beach at 10:00
Swimming class at 10:15
Beach ball toss at 11:00
Rest time at 11:15
Volleyball game at 11:30
Lunch break
Cleanup committee at 12:30
Planning committee at 12:30
Student officer meeting at 1:30
Beachfront fishing contest at 2:30
Trophy time at 4:00

JOB CC1-3. INFORMAL NOTE

Standard format.

(Date)
Dear Linda and Allen:
Our student clubs' picnic will be held the first Saturday in July at the Dickinson County Beach. We would like to have you there as our special guests. We have an exciting day planned, and I am going to compete in the fishing contest. Hope to see you there!

Leave room for Pam to sign her name.