

# CHAPTER 1

## Handwriting Instruction Techniques and Procedures

It is important that the basic methodology we use to instruct and assess handwriting has strong support in the research literature. In this chapter a brief overview of the core handwriting techniques is provided. The relationship between these techniques and the research literature is discussed.

### Tracing Versus Copying in Letter Formation

Research studies have shown that letter forms are learned better by copying activities than by tracing, in which the letters are gradually faded or parts of the letter are gradually withdrawn. Tracing has some value as a brief, easier intermediate stage prior to the student copying the letter without tracing prompts. Unsupervised practice of inappropriate tracing responses, such as joining the dashed sections in traced letters with short lines rather than using one continuous line to make the letter, should be avoided.

### Use of Demonstrations of Correct Letter Formation

Kirk (1978), in a study of handwriting as rule-based instruction rather than simple motor learning, found that demonstrations and verbal instructions on how to make a letter had a positive effect on copying. Demonstration was shown to be the key element in improved copying and transfer of learning to letters not previously taught. When teaching a new letter, therefore, the teacher should clearly demonstrate the letter being introduced and use clear, consistent directions for letter formation.

### Letter Errors and Illegibility

Newland (1932) found that in cursive writing illegibilities of four letters "a," "e," "r," and "t" contributed no less than 45 percent of all the illegibilities recorded at any age level.

Quant's research (1946) indicated that good letter formation is the most important factor in determining the legibility of cursive handwriting.

Compactness of handwriting and the regularity of slant also were found to affect legibility.

Lewis and Lewis (1965) found that in manuscript writing errors were more frequent in letters in which curves and vertical lines merge (u, f, h, j, m, n, r). Before instruction, left-handed subjects as a group made more errors of all types; and after instruction, they still made significantly more reversals and inversions. The incidence of errors in free writing was greater than in copying letters. Horton (1969) found that the most difficult cursive letters for sixth-grade students were r, h, z, y, s, o, k, j, g, and d.

If a student's specific illegibilities can be diagnosed and remediated directly, this would seem to be a more economical use of time than using a broad approach which focuses on such aspects as slant and spacing. This view is supported in the research. Newland (1932), Horton (1970), and Cole (1936) have all suggested that concentrated drill on an individual's specific errors is the best form of remediation. Stewart (1973) found that a method of handwriting remediation, in which the student practiced only his specific errors, was much more efficient than one in which the focus was on general perceptual-motor ability. This conclusion was also reached by Bergman & McLaughlin (1988) after an extensive review of the literature.

### Handwriting Scales

A number of handwriting scales have been developed using general quality as a measure of handwriting. The student's handwriting in a

sample passage is compared to a number of specimens which have previously been rated. Some scales include a measure of speed. A few scales are described below.

*The Thorndike Scale* (1910) for the measurement of merit of handwriting was developed for cursive handwriting and consisted of sixteen handwriting specimens arranged in order of merit.

The *Ayres Handwriting Scale* (1912) was also developed for cursive writing using legibility as a criterion for judgment.

The *Freeman Handwriting Measuring Scale* (1959) initially used five specific factors as criteria: letter form, uniformity of slant, uniformity of alignment of letters, quality of line, and spacing. As revised in 1959, the scale now measures general excellence. At different grade levels, specimens are given which have been previously rated at five levels.

Hopkins, Schutte, and Garton (1971) devised a system which scored each letter as correct or incorrect on the following measurable characteristics: omissions, substitutions, reversals, degree of slant, relative size of letters, and relative position of letters.

Helwig (1976), Jones (1977), and Trap (1978) have all used transparent overlays to judge correctly made letter strokes in both manuscript and cursive writing. They found that both teachers and students could be trained to reliably use these overlays. This use by students allows for objective and immediate feedback on their own handwriting without requiring a large amount of teacher time.

The *Test of Written Language* (1983), developed to measure various aspects of written language, contains a norm-referenced test of cursive handwriting for students in grades 3 through 8. The most important consideration in the subtest is legibility (Mercer & Mercer, pages 447-448).

Although each of the scales or rating systems has value, few classroom teachers are willing to take the time to use complex rating systems (Bergman & McLaughlin, 1988). A comparative procedure was developed (Hofmeister, 1969) in which each letter from a pretest sample is compared with the

same letter in a post-test sample. A simple plus and minus is used to designate improvement or non-improvement of each letter. In assessing the reliability of this approach, both Watts (1971) and Hofmeister (1969) found this suitable for classroom use.

## Manuscript and Cursive Styles

While some researchers and writers advocate a single style of handwriting, the majority prefer manuscript writing in the first two or three grades and then a change to cursive writing. Otto and Rarick (1968) concluded that *when* the transition is made (early second to late third grade) is less important than *what* is offered in the instructional program.

Gerard (1978) summarizes the research on manuscript and cursive styles of handwriting according to legibility, speed, ease of learning, and transition and found the following:

1. Manuscript writing is more legible than cursive writing.
2. While research on speed is not so clear-cut, manuscript writing appears as fast or faster than cursive.
3. Manuscript appears easier to learn for younger students because easier motor movements are involved.
4. Transition from manuscript to cursive style can occur anywhere from early second to fourth grade. The time when this transition takes place is usually determined by tradition and usage rather than on research data.

## Use of Reinforcement

Stromer (1975) used modeling of correct and incorrect symbol formation, praise, and other forms of feedback to reduce reversals of letters (p for q) and two-digit numbers (writing 31 for 13). Hopkins, Schutte, and Garton (1971) used access

to a playroom to reinforce work rates on printing and writing. They found that this was an effective reinforcer of rate of handwriting and that quality of writing did not show a decrease.

Trap, Milner-Davis, Joseph, and Cooper (1978) used overlays to test the effect of various types of interventions on first-grade students being introduced to cursive writing. As a result of this study, they found the following:

1. Showing and telling the student in what way his letters were not correct increased correct letter formation.
2. Having the student then write the correct letter correctly resulted in a further increase.
3. The chance to earn a Handwriting Certificate of Achievement further increased correct letter formation.

Ten letters were used during the training sessions to provide correction and modeling. Sixteen other letters which were practiced but not "trained" also improved, but not as much as the trained letters.

The use of praise or other forms of reinforcement is an important addition to a handwriting program designed to produce maximum improvement in student handwriting.