

## **The Effects of Italic Handwriting on Legibility**

### **The Methods and Findings of a Three-Year Study**

**The *Italic Handwriting Series*<sup>1</sup> emphasizes a continuous flow in handwriting development and instruction, and is designed to allow a more natural transition from print to cursive. Italic handwriting was first implemented in Portland Public Schools during the 1983-84 school year at grades K-4, with an additional grade-level implementation during successive years. A concurrent three-year evaluation study examined the effects of italic handwriting instruction upon students' handwriting legibility. During the first year, legibility ratings declined from fall to spring. During the second and third years, ratings typically increased from fall to spring, but when the ratings were examined across all three years of italic implementation, a pattern of overall decline emerged. Because many student papers were written in a non-italic cursive, the entire sample was separated into italic and non-italic categories. Even though italic papers received significantly higher**

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ratings, legibility ratings declined over time. While teachers' impressions of the italic program are generally favorable, primary teachers typically respond more positively about italic than do intermediate-grade teachers.

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### Introduction

- | The Portland Public Schools adopted the *Italic Handwriting Series* as part of the 1983-1989 elementary language arts adoption, and the Curriculum Department requested the support of the Department of Research and Evaluation to design and conduct a three-year evaluation to assess the effects of italic instruction upon students' handwriting legibility. The first-year evaluation produced baseline data regarding the legibility of third-, fourth- and fifth-grade students' handwriting; and succeeding evaluations compared handwriting legibility against the baseline.
- | This paper presents a summary of all three years of the italic adoption implementation, together with evaluation findings.

### Program Description

- | Conventional handwriting programs, including those used in Portland Public Schools, typically begin when five-year-old kindergarten children are taught to print upper and lowercase letters. While letterforms and models for print may differ from program to program, the instruction process is usually the same, and it continues as the children refine their printed forms during grades one and two. The instruction changes to cursive writing in grade three.
- | Figure 1 displays the conventional letterforms of the Noble & Noble handwriting adoption implemented prior to 1983. Figure 2 displays the letterforms of the *Italic Handwriting Series*.
- | The *Italic Handwriting Series* emphasizes a continuous flow in handwriting development and instruction, and is designed to allow a more natural transition from print to cursive. The transition is based on joins between letters rather than on the changes in letter formation which characterize more conventional handwriting programs.
- | The Portland Public School District recommends that 40 percent of primary grade instructional time and 35 percent of intermediate grade instructional time be devoted to language arts.<sup>2</sup> Within these recommendations, there are no specific grade-level standards for duration of handwriting instruction. Handwriting instruction is very important at the K-3 level, where daily practice is encouraged. At the intermediate level, when its practical im-

portance increases, handwriting instruction is typically provided for correction, adjustment or enrichment. The italic implementation is supported by the Curriculum Department (specifically by the District Language Arts specialist), by building-level instructional specialists and by teachers who strongly believe in the merits of the italic form of handwriting.

#### **Implementation of the Handwriting Program**

- | During 1983-84 (the first year of implementation at K-4), the italic handwriting curricular scope and sequence was somewhat compressed. Basic italic was introduced at kindergarten, first and second grades and practiced all year at those levels, as prescribed by the program developers. Basic italic was also presented in grades three and four from the beginning of the school year, and children at those levels were also introduced to cursive italic at later periods during the school year. It is reasonable to assume that third and fourth graders had previously received instruction in, and had practiced, other forms of handwriting before receiving either form of italic. Therefore, the first year's instructional experiences for the third and fourth grade required a transition from non-italic handwriting to italic, and within italic, from basic to cursive forms.
- | Instruction in italic during the second and third years of implementation more closely followed the curricular scope and sequence recommended by the program developers. During 1984-85, italic handwriting was implemented district-wide at K-5, and at K-6 during 1985-86. For grade levels K-4, 1985-86 was the third year of program implementation.
- | The Portland Public Schools Teacher Support Services provided continuing teacher in-service training in the *Italic Handwriting Series* during all three years. Six hours of training were offered in two-day workshops held during the summers; a four-part session provided eight hours of instruction in italic during the fall of each year. A series of instructional videotapes was available in the central audio-visual library for teacher use; and the program authors, upon request, conducted training workshops at grade-level meetings within various clusters.



Figure 1.

**Letterforms of Noble &****Noble Handwriting****Program. Copyright**

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**Evaluation**

**The Purpose of the Study** The principal reason for conducting an evaluation of a program of instruction is to help make an educational decision by providing information; the selection of the evaluation model properly follows upon the nature of the information needed. The purpose of this evaluation in the Portland Public Schools was to assess in general terms the merit of the handwriting produced by a randomly selected group of students in order to evaluate the impact of a new instructional program, the *Italic Handwriting Series*.

BASIC ITALIC ALPHABET

All letters written in one stroke unless otherwise indicated

Aa Bb Cc Dd Ee Ff Gg

Hh Ii Jj Kk Ll Mm

Nn Oo Pp Qq Rr Ss Tt

Uu Vv Ww Xx Yy Zz

0 1 2 3 4 5 6 7 8 9

CURSIVE ITALIC ALPHABET

All letters written in one stroke unless otherwise indicated

Aa Bb Cc Dd Ee Ff Gg  
nan nbm ncn ndn nen nfn ngn

Hh Ii Jj Kk Ll Mm  
nhn nin njn nkn nln nmn

Nn Oo Pp Qq Rr Ss Tt  
nnn non npn nqn nrm nsn ntn  
or nsn

Uu Vv Ww Xx Yy Zz  
nun nvn nwn nxn nyn nzn

Lift before f and z. Lift after g, j, q and y

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Figure 2.  
Letterforms of Italic  
Handwriting Series.  
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- | **Description of the Holistic Rating Process**<sup>3</sup> The procedure selected to evaluate the handwriting of students was adapted from an evaluation model used in the subject of written composition. The distinctive element of the process is the use of what is commonly called holistic (i.e. whole) judgments, in which trained raters review a sample of handwriting for an overall or “whole” impression.
- | While untrained raters approach the task of handwriting evaluation with some specific traits in mind, they usually have only a general, undefined notion of standards; in a holistic evaluation, specific traits such as slope, size and letter shapes are not addressed directly although they certainly affect a judge’s opinion. In the training sessions conducted before the work of evaluation, raters are presented a rationale of handwriting and specific definitions of standards for each trait. The purpose is to provide an intellectual framework for the ratings of each kind of letter model they are expected to evaluate. Ratings are made in rapid reactions to each paper, with separate traits kept in the background of the thought process. Through practicing with a variety of samples, the raters internalize and rapidly use the various criteria in one comprehensive judgment about each sample. Raters typically form judgments in approximately fifteen seconds and then mark the paper.
- | The process of handwriting is expressive movement in various manifestations possessing symbolic power and significance in addition to the verbalized message. It is complicated by emotional states and subliminal mental activity. However, the act of writing is also closely prescribed in meaningful graphic patterns of letter design. Limited to the minimum number of strokes for each letter, thus distinguishing it from lettering which uses additional finishing strokes, the act of handwriting is best defined as a system of movement involving touch and non-touch. The late Professor Lloyd Reynolds called it “a dialectic of inked movement and designed letterforms.” The visible writing is a vestige of the movement that made it; traditional characteristics of the system of movement-made-visible include sloping letter angle, compressed spacing and fusion of strokes (joins, ligatures and branching strokes). To see writing is to feel again the movement that

made it—a phenomenon called synesthesia. The ultimate goal of handwriting is not limited to the reproduction of designed letter-shapes. The goal of handwriting, the ideal, is the performance of the lettershapes with disciplined freedom of movement that is expressive of the intellectual and emotional life of the writer.

| Because of these human complexities, objective analysis based on quantitative analysis cannot in itself report the expressive visual value of a given piece of writing. This can be done only through a system of holistic judgment. Time-honored methods of handwriting evaluation involve the construction of a scale of samples.

Comparing a student's handwriting to a sample on a scale is a search for a matchup on the basis of specific structural characteristics (e.g., slope, space, size, shape) and as such, as scoring of well-defined, fixed values with carefully delineated criteria which are exemplified in a matrix of composite samples—in short, an analytical evaluation that may also address some undefined element called “general merit” but entirely misses the point: *writing must be judged according to its rhythmic nature as patterned movement*. By observing the patterns of the writing, the rater can draw inferences about the system of movement used to make them as well as the competence of the particular piece of writing.

| The holistic model of evaluation was selected for the italic project in Portland Public Schools because, first, it served the intent of the project: a general evaluation of merit. The general evaluation is reported in ranking student performances according to four levels of quality.

| Secondly, through careful preparation of raters, the holistic approach was able to accommodate a variety of letter models in the student writing. At the time of the first and second assessments which are reported in this paper, students produced handwriting for the samples in manuscript, commercial cursive or italic models, depending on the instructional program and handwriting requirements at their school; it was the first year of the phase-in process designed to implement italic handwriting in all schools in Portland.

| Lastly, the holistic approach provided the integrated judgment that is suited to the nature of handwriting, a virtually indivisible “system of movement.”

| **Student Handwriting: Baseline Data** After determining that the evaluation would follow a holistic process, the assessment strategy was to obtain a sample of writing from each student and to submit this to raters. Instead of using a fixed sample sentence for all students to copy to create the handwriting samples, the students were assigned the task of writing a short composition in response to a prompt. The topic prompts were: fall 1983, “A Visit to the Zoo”; spring 1984, “Reasons I Would Give for Wanting a Pet”; fall/spring 1984-85 and 1985-86, “The Person I would Most Like to Meet.”

| Papers were gathered for baseline data through a scientific random sampling process from students in eight selected schools. The baseline data served for the three years of the study. It is important to remember that a methodological disadvantage of the evaluation study was that specific differences between students’ handwriting learning experiences, both before and during the italic implementation, were unknown.

| Third-, fourth- and fifth-grade classes in the sample schools were given a prompt for the pre-treatment handwriting exercise and directed to write on a specific subject in the handwriting style most comfortable for them at that time. For both ratings, fall and spring, there was no distinction made regarding student handwriting in terms of print or cursive letter forms. The raters formed a general impression of excellence based on sensitivity to specifications prescribed for each of three major handwriting styles: manuscript, commercial cursive and italic. Students did not gain or lose points because of printing instead of cursive. The pre-treatment handwriting was produced in October 1983. The same classes were sampled in May 1984, near the end of the school year. For all except the fifth graders, the post-treatment handwriting was produced after several months of instruction in italic handwriting. Fifth-grade students were instructed in the conventional handwriting program rather than the new italic program.

Even though they did not receive instruction in italic, a sample of their writing was collected in order to provide a baseline of quality against which to compare the handwriting of future fifth graders.

Table 1 displays the numbers of handwriting sample papers by grade level which were included in the fall and spring legibility ratings.

**Table 1.**

Pre- and Post-Treatment Handwriting Sample Papers by Grade

| <b>Grade</b> | <b>Fall sample</b> | <b>Spring sample</b> | <b>Total</b> |
|--------------|--------------------|----------------------|--------------|
| 3            | 369                | 274                  | 643          |
| 4            | 348                | 303                  | 651          |
| 5            | 311                | 293                  | 604          |

The entire set of papers was delivered to the evaluation referee, Charles Lehman, a handwriting specialist and Coordinator for Tigard Schools. The referee sorted the papers according to the three grades sampled. Each of the papers from each grade was then considered in an effort to select multiple samples representing four quality levels within each grade. After representative samples were selected to use in training the raters, all four stacks were reunited into one by weaving together approximately ten papers from each stack. The samples selected in this way were coded and copied to use for practice with raters. The first grade to be rated in the training exercise, grade three, had six sample sets of four papers each to be used for practice. Each page of each set was marked with a code letter to facilitate handling, and the score assigned to the paper was entered on a key for release to the raters after they had made judgments about each set of practice papers.

The first two sets of practice papers for the third grade start simply by challenging the raters to distinguish, in each set, two papers of high quality from two papers of low quality. The second two sets require that the raters distinguish four levels of quality, with only one paper to be graded for each level in each set. The final two sets require that the rater distinguish four levels of

quality, with more than one paper per level in each set. After completing each sample grading set and on several other occasions during the practice sessions, the raters discussed reasons why the papers deserved the marks they gave them and were asked to identify the specific criteria of production that separate the levels of quality. Then they were told the scores, which had been determined in advance by the referee.

Before they began practicing the rating of papers, the raters were given the following general guidelines: The quality of handwriting movement is a personal reflection of the whole human being—personality, physique, emotional state, energy level—and all these factors must be considered in reading the papers. The writing ranges from small and shy to large and bold, and from well made to poorly made, depending on the development of the student as a person and as a learner. The quality is also dependent on the characteristics of the tools and materials used to perform a given design of writing; some tools (e.g., a soft pencil) can detract from the quality of an alphabet originally designed with a fine-line tool. The raters must focus only on the quality of the writing, not on spelling or literary merit, and form a general impression of excellence based on sensitivity to specific qualities and individual designs prescribed for each of the major handwriting styles under consideration.

Figure 3 displays four samples of third-grade student writing used in training raters to evaluate the work of that particular group of students. The samples, known as “range finders,” are ranked from one (lowest) to four (highest), representing four levels in the range of competence for that particular group of students. The raters were trained to focus only on the quality of writing by forming a *general impression* of excellence based on specific qualities and individual designs prescribed for the handwriting style under consideration. The specific traits of the handwriting style refer to the letter slope, space, size and shape required by the design as well as format details, quality of line and cleanliness. Handwriting here includes what some might call “printing.” The act of printing is, by design, an assembling of multiple strokes to form letterforms and, while not a rhythmic activity,

A Visit to the Zoo

When I go to the Zoo  
I'm going to see a  
bear in after I see a  
bear in I'm going to ride  
a train

Figure 3. One

A Visit To The Zoo

I like the zoo It's fun

I like the animals I like

the zebras and tigers and  
bears. It's fun there.

I like to go there again.

Figure 3. Two

Figure 3.

Sample of third grade  
"rangefinders" ranked  
from one (lowest) to  
four (highest).

## A Visit to the Zoo

When I went to the zoo I saw great big elephants with great big tusks.

And I saw the lions growling at me.

I liked the giraffes they look funny with their long necks.

I liked the polar bears too. I liked their white coats.

When we left we went out for lunch.

Figure 3. Three

## A Visit to the zoo.

I saw a panda bear. The zoo is a fun place to visit. The monkeys are very funny and silly. You can eat there. The lions are pretty and has cute babies.

Figure 3. Four

should be judged by its own criteria of excellence. However, the requirements of prescribed designs, like any other specific trait of a handwriting system, are subordinate to the holistic judgment of worth, which is made generally and immediately; while founded on familiarity with specific traits that serve as a point of reference, the holistic judgment is not analytical in nature.

The raters were also given certain specific traits to be used as points of reference with any style of writing.

- a. **Letter slope:** The letter slope prescribed in each of the various systems varies from vertical to approximately 30 degrees to the right. No system prescribes a back slope.
- b. **Space:** All systems desire the appearance of even spacing between letters, words and lines.
- c. **Size:** All systems desire regularly sized letters at a scale that is convenient for the reader to read.
- d. **Shape:** All systems prescribe specific forms for each letter of the alphabet and for each number. Not only are the forms prescribed, but the number, sequence and direction of strokes are prescribed. Letterform becomes illegible when minimum essentials are missing from forms.
- e. **Format:** Alignment of lines, length of lines and space of margins are all integral elements in the act of handwriting. They are as real as the strokes of the letterforms.
- f. **Quality of line:** All systems promote smooth-flowing, rhythmic writing based on confident control of shape-making gestures.
- g. **Cleanliness:** The readability of any writing depends on clarity of form. Incomplete erasing, writing over, and smudging or marking are discouraged.

- | All the criteria together make up a network. No one aspect of it can be violated without violating the entire network.
- | In summary, the raters were instructed to keep in mind the *person* who created the writing (the development and vitality of the student writer), the *prescription* (the design and instruments that the writer must use to create the letterforms) and the *performance* of the writing (the correspondence of form with the models).
- | After the eight raters (who were recruited from the community and school district) were trained so that a high degree of consensus among ratings was achieved, the sample papers were put away and the members of the group divided into two teams for rating. The student papers were divided equally between them and the rating began. As each paper was judged, the rater marked a single score to represent an overall or “whole” impression of the merit of the paper—either a 1 (lowest), 2, 3 or 4 (highest) in the top left corner of the paper—folded the corner down and slipped on a paper clip to keep the score hidden. Each rating took less than thirty seconds. After completing the rating of its stack of papers, the team handed the papers over to the other team for a second reading. The second team rated each paper and marked a second score on the outside of the folded corner, removed the paper clip and returned the paper to the referee.
- | The referee examined the scores given each paper and reconciled by independent judgment any score that was more than one number apart on the range of 1-4. For example, if one rater gave the paper a score of 2 and the second rater gave it a 4, the referee made a judgment to determine what the paper deserved and then changed the one score in error.
- | As the scoring proceeded through a grade level, the referee took the raters through a new practice exercise with sample papers taken from the upcoming grade to be rated. In the same way, the referee from time to time stopped the rating of papers for a refresher exercise if it was evident that the raters were not making appropriate judgments.
- | **Teacher Survey of Italic Handwriting** Representatives of the Departments of Curriculum and of Research and Evaluation cooperated in the design of a teacher survey to assess teacher opinions of the ease and legibility of their students’ italic handwriting.

Additional items asked teachers how much time they spent on italic handwriting instruction each week, what their italic training experiences had been and whether they would participate in future italic training sessions.

### Findings

- | Because the italic evaluation was a three-year study, it was important to compare legibility ratings and gains across all three years of the implementation. During each evaluation, differences between the fall and spring ratings were compared for each grade level and from year to year for the whole group. A high degree of consensus among raters was achieved during all three years of evaluation. Differences of two points or more occurred in 3.6 percent of the 1983-84 papers, in 2.8 percent of the 1984-85 papers and in fewer than 1 percent of the 1985-86 papers. To ensure reliability between ratings across all three years, approximately a hundred 1983-84 papers from all three grade levels were rescored during the spring 1985 rating session, and 346 of the 1984-85 papers were rescored during the spring 1986 rating session. Fewer than 5 percent of the rescored papers were refereed.
  
- | **Handwriting Legibility Over Time** Table 2 displays total grade-level group means for each sampling period and presents the duration of participation in the italic handwriting program. While the grade-level groups were selected from the same set of schools each year, the student sample was not necessarily the same across all three years.
  
- | Three ways to examine these data are as grade-level ratings from fall to spring within years, as total group ratings across years, and in terms of a cohort group of 1983-84 third graders who are represented as fourth and fifth graders in 1984-85 and 1985-86.
  
- | During 1983-84 from fall to spring, legibility ratings declined in all three grade levels. One explanation for the decline in third and fourth grades is that during the first implementation year, students were required not only to transition from non-italic handwriting, but also to learn both basic and cursive italic.

**Table 2.**

Grade-Level Group Means and Standard Deviations, 1983-84, 1984-85, 1985-86 and Number of Years of Italic Instruction

| Grade Level           | Fall 1983   | Spring 1984   | Fall 1984   | Spring 1985    | Fall 1985   | Spring 1986    |
|-----------------------|-------------|---------------|-------------|----------------|-------------|----------------|
|                       | Mean (S.D.) | Mean (S.D.)   | Mean (S.D.) | Mean (S.D.)    | Mean (S.D.) | Mean (S.D.)    |
| 3                     | 5.17 (1.49) | 5.02 (1.58)   | 4.85 (1.63) | 5.12 (1.48)    | 4.30 (1.27) | 4.24 (1.33)    |
| 4                     | 5.09 (1.57) | 4.85 (1.51)   | 4.54 (1.48) | 5.09 (1.40)    | 4.18 (1.24) | 4.21 (1.20)    |
| 5                     | 5.19 (1.32) | 5.12 (1.52)   | 4.56 (1.46) | 4.63 (1.46)    | 4.21 (1.32) | 4.27 (1.22)    |
| Whole Group           |             |               |             |                |             |                |
| Total                 | 5.15 (1.47) | 5.00 (1.55)   | 4.56 (1.53) | 4.99 (1.46)    | 4.23 (1.28) | 4.25 (1.25)    |
| No Italic Instruction |             | 1 Year Italic |             | 2 Years Italic |             | 3 Years Italic |

The fifth-grade ratings (both fall and spring) were made on non-italic handwriting forms because grade five was not part of the first year implementation. During the second and third years, grade-level ratings typically increased from fall to spring; 1984-85 increases were greater than those of 1985-86. The only exception to the general increase was at third grade during 1985-86, where ratings declined from fall to spring. The total group ratings present the same pattern: a decline during the first year, large fall to spring increases during the second year and a small increase during the third year.

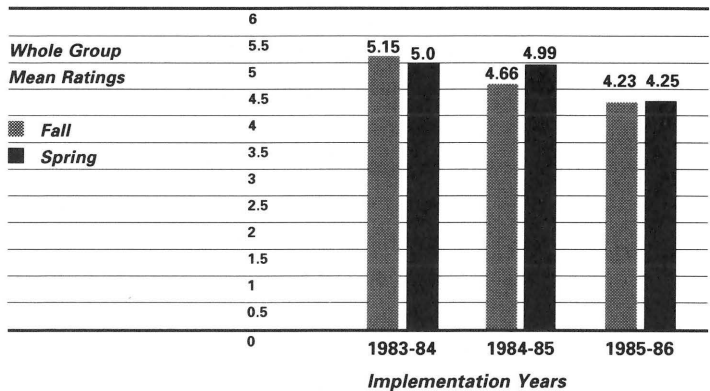
If the fall 1983 figures could be interpreted as a rating based on the previous three (for grade three) or four (for grade four) years of traditional handwriting instruction and practice, and if one purpose of the italic adoption was to improve handwriting legibility, one would reasonably expect that the 1985-86 ratings for third and fourth graders would be higher than those of fall 1983 and spring 1984. A similar expectation may be less reasonable for the fifth-grade group because, though they had three years of italic instruction by the end of 1985-86, they began italic after

having developed other forms of handwriting. Figure 4 shows that the group ratings overall have declined since the 1983-84 baseline year.

In order to determine whether the difference between the whole group means was statistically significant, a T-test was conducted for 1983-84, 1984-85 and 1985-86. The results indicated that the difference between the fall 1983 and spring 1984 means was statistically significant; that is, it is a difference unlikely to be produced merely by chance ( $t=2.89$ ,  $df=631$ ,  $p=.004$ ). Similarly, the difference between the fall 1984 and spring 1985 means was statistically significant ( $t=4.88$ ,  $df=769$ ,  $p=.000$ ). For 1985-86 there was no statistically significant difference between the fall and spring means.

**Figure 4.**

Whole Group Italic Ratings, Fall and Spring 1983-84 through 1985-86



A separate analysis was conducted for those students who submitted handwriting samples as third, fourth and fifth graders. Table 3 displays three years of mean ratings and standard deviations for the clear group whose papers were rated as third graders in 1983-84, as fourth graders in 1984-85 and as fifth graders in 1985-86. The fall to spring pattern for this group is similar to

those presented earlier; fall to spring ratings declined during the first year of implementation, a large increase occurred from fall to spring during the second year and a slight increase occurred from fall to spring during the second year and a slight increase occurred between fall and spring in 1985-86. The 1985-86 ratings are lower overall when compared with those of the previous two years. T-tests were conducted to determine the statistical significance of the means. Fall 1984 to spring 1985 means were statistically significant ( $t=4.75$ ,  $df=88$ ,  $p=.000$ ).

**Table 3.**

Mean Ratings for Clear Group in Grades 3, 4, 5  
from 1983-84 to 1985-86

| Year    | Grade | N  | Fall Mean (S.D.) | Spring Mean (S.D.) |
|---------|-------|----|------------------|--------------------|
| 1983-84 | 3     | 89 | 5.66 (1.65)      | 5.44 (1.60)        |
| 1984-85 | 4     | 89 | 4.47 (1.60)      | 5.26 (1.28)        |
| 1985-86 | 5     | 89 | 4.24 (1.15)      | 4.30 (1.18)        |

#### Comparison of Italic and Non-Italic Ratings

- During all three evaluation years, there was evidence that italic handwriting was not universally taught. Each year, some of the rated papers were written in standard cursive forms instead of italic. Scores did not reflect which handwriting model was used by the student—manuscript, commercial cursive or italic—and, therefore, a further analysis was made to find out if there were differences in ratings between italic and non-italic handwriting samples.
- A panel of expert judges was assembled to separate each year's sample into italic and non-italic categories. Judges included representatives of the italic handwriting community, teachers and administrators. Group grade-level means were calculated for italic and non-italic categories for students who had both fall and spring ratings in a single year. Table 4, displays the data.

**Table 4.**

Comparison of Italic and Non-Italic Clear Group Means  
 Within Years 1983-84, 1984-85, 1985-86

| Year    | Italic Means and Standard Deviations |                  |                    | Non-Italic Means and Standard Deviations |                  |                    |
|---------|--------------------------------------|------------------|--------------------|--|------------------|--------------------|
|         | N                                    | Fall Mean (S.D.) | Spring Mean (S.D.) | N  | Fall Mean (S.D.) | Spring Mean (S.D.) |
| 1983-84 | 323                                  | 5.39 (1.51)      | 5.14 (1.54)        | 320                                      | 5.12 (1.48)      | 4.98 (1.48)        |
| 1984-85 | 574                                  | 4.65 (1.62)      | 5.06 (1.46)        | 185                                      | 4.36 (1.68)      | 4.66 (1.48)        |
| 1985-86 | 414                                  | 4.37 (1.24)      | 4.48 (1.31)        | 292                                      | 4.09 (1.22)      | 3.99 (1.17)        |

| T-tests were conducted to determine the significance of the differences between italic and non-italic means, and between the italic and non-italic fall to spring gains. Italic means were significantly higher than non-italic means during the second and third years of implementation, and italic gains were significantly higher than non-italic gains in 1985-86; statistical significance was at the .05 level.

| But even though italic papers were rated higher than non-italic papers, legibility ratings of italic papers declined in the same way non-italic legibility ratings declined over the three years of the *Italic Handwriting Series* implementation.

| The italic/non-italic analysis provided information from which to make inferences about the extent of the implementation for the sample students; during the first year of data collection, approximately half the papers were judged to be italic; the proportion increased to 75 percent in the second year but declined to just 60 percent in the third year. One might reasonably conclude that some of the sample students did not receive italic instruction. It is noteworthy that about half of the papers were categorized as italic in fall 1983. One explanation is that the first sample was collected late in the fall after the implementation had begun.

#### **Teacher Survey of Italic Handwriting**

| All Portland Public School teachers K-5 and language arts teachers in grade six were surveyed in May 1986. Approximately a thousand copies of the "Teacher Survey of Italic Handwriting"

were distributed and 63 percent were returned. Table 5 displays the number of respondents by grade level. Teachers who did not identify their grade were described as “other.”

Table 6 presents total teacher responses to the survey items. (Respondents did not necessarily answer all survey items; therefore, the response totals in Table 6 are not equal to the total in Table 5.)

**Table 5.**

Teacher Survey of Italic Handwriting: Grade Level  
of Responding Teachers

| K     | 1     | 2     | 3     | 4     | 5     | 6    | Other | Total  |
|-------|-------|-------|-------|-------|-------|------|-------|--------|
| 65    | 127   | 103   | 104   | 89    | 82    | 39   | 23    | 632    |
| (10%) | (20%) | (16%) | (16%) | (14%) | (13%) | (6%) | (4%)  | (100%) |

Overall, responding teachers more often agreed that their students were able to write the italic letter forms easily. Sixty-seven percent of all responses to question one (N=380) fell in the “Strongly Agree” or “Generally Agree” categories. Twenty-three percent disagreed (N=129) and 10 percent (N=57) were undecided. Teachers overall similarly agreed that their students’ handwriting was easy to read; 72 percent of all responses (N=403) to question two fell in the “Strongly” to “Generally Agree” categories while 10 percent (N=56) were undecided and 18 percent (N=103) disagreed.

When responses were considered in terms of grade levels, K-5 teachers were more positive than grade-six teachers about the ease of student writing, and teachers’ ease in reading their students’ italic. For ease of student writing, K-5 responses ranged from 56 percent positive at grade five to 82 percent positive at grade one; for ease of teacher reading, responses ranged from 64 percent positive at grade three to 87 percent positive at grade one. Forty-nine percent of the sixth-grade teachers (n=19) disagreed that their students were able to write italic letter forms easily; 31 percent (n=12) agreed and 21 percent (n=8) were undecided. Forty-one percent of the sixth-grade teacher respondents (n=16) agreed that their students’ handwriting was easy to read; 39 percent (n=15) disagreed and 21 percent (n=8) were undecided.

**Table 6.**

Responses to Teacher Survey of Italic Handwriting. Number of respondents with percentage in parenthesis

**Question / Response**

|  | <b>Strongly Agree</b> | <b>Generally Agree</b> | <b>Undecided</b> | <b>Generally Disagree</b> | <b>Strongly Disagree</b> | <b>TOTAL</b> |
|--|-----------------------|------------------------|------------------|---------------------------|--------------------------|--------------|
| <i>1. My students are able to write the italic letterforms easily.</i> |                       |                        |                  |                           |                          |              |
| N  | 59                    | 321                    | 57               | 91                        | 38                       | 566          |
| %  | (10)                  | (57)                   | (10)             | (16)                      | (7)                      | (100)        |
| <i>2. My students' handwriting is easy to read.</i>                    |                       |                        |                  |                           |                          |              |
| N  | 60                    | 343                    | 56               | 75                        | 28                       | 562          |
| %  | (11)                  | (61)                   | (10)             | (13)                      | (5)                      | (100)        |

**Minutes for Italic Instruction**

|   | <b>20</b> | <b>30</b> | <b>40</b> | <b>50</b> | <b>60</b> | <b>TOTAL</b> |
|---|-----------|-----------|-----------|-----------|-----------|--------------|
| <i>3. How many minutes per week do you spend on italic instruction?</i> |           |           |           |           |           |              |
| N   | 92        | 123       | 130       | 87        | 122       | 554          |
| %   | (17)      | (22)      | (23)      | (16)      | (22)      | (100)        |

**Respondents' Italic Training**

|  | <b>Self-taught</b> | <b>District Workshop</b> | <b>College Classes</b> | <b>TOTAL</b> |
|--|--------------------|--------------------------|------------------------|--------------|
| <i>4. Which category best describes your italic training experience?</i> |                    |                          |                        |              |
| N  | 201                | 240                      | 78                     | 519          |
| %  | (39)               | (46)                     | (15)                   | (100)        |

**Respondents' Interest in Future Italic Training**

|   | <b>Yes</b> | <b>No</b> | <b>TOTAL</b> |
|---|------------|-----------|--------------|
| <i>5. If future training classes were offered, would you participate?</i> |            |           |              |
| N   | 160        | 384       | 544          |
| %   | (29)       | (71)      | (100)        |

- | While the percentage of teacher responses in the instructional time categories was similar, K-4 teachers reported more time spent on italic instruction than fifth- and sixth-grade teachers. Second- and third-grade teachers reported a high of 60 minutes per week; kindergarten, first- and fourth-grade teachers reported spending 30-40 minutes per week on italic instruction. Fifth- and sixth-grade teachers reported spending 20 minutes per week on handwriting instruction.
- | Forty-six percent of all respondents reported that they learned italic in district-sponsored workshops; 15 percent studied italic handwriting in college or university classes and 39 percent were self-taught. A larger percentage of teachers at grades five and six reported that they were self-taught. Seventy percent of the respondents overall indicated that they would not participate in future italic training if it were offered; the largest number of teachers who responded positively about participation in future training were 22 kindergarten teachers and 14 sixth-grade teachers.
- | **Teacher Comments** Two hundred eighty-nine responding teachers (46 percent of the total number of respondents) included comments which were summarized and tallied in order to determine trends among responses. Comments pertained to specific curriculum and instructional concerns. K-3 teachers more often noted that learning certain letters was difficult for young students; 12 teachers across all grade levels mentioned problems with transitioning from italic handwriting instruction to the world of work-books and other curricular materials which use models of standard cursive writing; 15 teachers across all grades mentioned that children already practiced in traditional cursive had difficulty changing to italic handwriting. K-2 teachers expressed a need for additional support materials. Some comments dealt with teachers' personal like or dislike of the adoption; 77 comments were positive statements in favor of the italic handwriting, and 41 comments were negative statements reporting dislike of italic.

| All three years of teacher comments were reviewed, and the evaluator sorted the comments into four categories: those reflecting personal feelings about italic, specific instructional concerns, materials shortage and "other." Table 7 presents the percentage of comments organized by topic under categories related to feelings, instructional concerns and materials. "Other" comments were excluded from the summary and are not reflected in the percentage calculations.

| Each year, the largest percentage of comments were positive statements about italic, but over time, the percentage of teachers desiring a change has increased. Comments about instructional concerns are declining; the 1985-86 percentages are not surprising given the number of positive responses to survey items one and two. "My students are able to write the italic letter forms easily," and "My students' handwriting is easy to read." Concerns about materials have similarly declined over the three years of the italic implementation. One explanation for the decline in instructional concerns is that the Curriculum Department has responded to meet specific needs reported in earlier evaluations.

#### **Conclusions**

| In 1985-86, the whole group mean legibility ratings for fourth- and fifth-grade students increased from fall to spring; third-grade ratings declined. During the first three years of italic implementation, the general legibility of sample students' handwriting declined. Though there were fall to spring gains during the second two years of the italic implementation, the ratings have never equaled those of the baseline year. The same pattern of decline was noted for clear groups; the third graders who were sampled during 1983-84 received lower legibility ratings as fourth and fifth graders. When each year's sample was separated into categories judged as italic and non-italic, the same decline was noted, though the set of papers judged to be italic typically received higher mean ratings than the non-italic set.

| In general, teacher responses to the Italic Handwriting Survey indicated that the adoption was favorably received. Teachers over-

Table 7.

Percentage of Teacher Responses by Topic and Year

| Topics   | 1983-84<br>n=217 | 1984-85<br>n=244 | 1985-86<br>n=223 |
|--|------------------|------------------|------------------|
| <b>Personal Feelings</b>   |                  |                  |                  |
| Positive statements, e.g. "I like italic."   | 40%              | 39%              | 35%              |
| Negative statements, e.g.,<br>"I don't like the italic adoption."                              | 2%               | 15%              | 18%              |
| Desire for change from italic  | —                | 3%               | 11%              |
| <b>Instructional Concerns</b>  |                  |                  |                  |
| Difficult for students to write some<br>letters, e.g., "e"                                     | 3%               | 17%              | 13%              |
| Mismatch between italic and traditional<br>handwriting models in other curriculum<br>materials | 16%              | 11%              | 10%              |
| Transition from traditional<br>handwriting difficult   | 12%              | 9%               | 8%               |
| <b>Materials</b>   |                  |                  |                  |
| Supplementary materials are needed   | 27%              | 7%               | 5%               |

all reported that students were able to write italic letter forms easily, and teachers typically found student handwriting easy to read.

Instructional and materials concerns were commented upon less frequently as the implementation continued. The percentage of negative statements about the adoption and the percentage of comments indicating desire for a change increased over time. Instructional time for handwriting was found to vary; primary teachers spent two to three times longer on handwriting instruction (averaging 40 to 60 minutes per week) than did intermediate

grade teachers. Though the majority of teacher respondents received formal italic training in either district or university classes, 70 percent indicated they were not interested in participating in future training.

The adoption did not appear to harm children's handwriting development; it did consistently produce better legibility than more traditional handwriting forms, and it enjoyed substantial teacher support. In the absence of other compelling reasons not addressed by this study, it was recommended that the *Italic Handwriting Series* be maintained.

#### Notes

- 1 Getty and Dubay. 1986. *The Italic Handwriting Series*, Second Edition: K-8. Continuing Education. Portland State University. Portland, Oregon.
- 2 This recommendation reflects state guidelines as presented in "Suggested K-8 Curriculum Balance," page 5 of the *Elementary/Secondary Guide for Oregon Schools*. Oregon Department of Education, 1980.
- 3 Lehman, Charles L., ed. 1976. *Handwriting Models for Schools*. Portland, Oregon: The Alcuin Press.