

Handwriting at Elementary Level in Santa Fe Public Schools

A Field Project

Submitted to the Graduate Division

School of Education

New Mexico Highlands University

In Partial Fulfillment

Of the Requirements for the Degree

Master of Arts, Curriculum and Instruction

Sarah J. Lescht

December 2007

ACKNOWLEDGMENT

I thank all teachers and administrators who participated in this study. Dr. Linda Lippitt, Dr. Barbara Reider, and Barbara Piper gave me the finest support, as did David, Petra, Tobias, and Theona Lescht, Jean Williams, and Paul Warrington, all of whom I thank very much.

Handwriting at Elementary Level in Santa Fe Public Schools
Sarah J. Lescht
Bachelor of Arts, European History
Master of Arts, Curriculum and Instruction

ABSTRACT

This study examined the status of handwriting instruction in Santa Fe Public School District at elementary level. Handwriting is a fundamental tool to communication that integrates cognitive and motor skills and is key to children's development. The study sought information as to school and teacher policy on the adoption of handwriting programs, instructional methods, materials, and time allotments. The study had a particular concern with how handwriting instruction impacts students served by the special education program. The instrument used in the study was a survey consisting of two separate, written, self-report questionnaires, one to the twenty-one elementary school principals in the district and the other to classroom teachers, kindergarten through fourth grade, to find information on overall policy and individual practice.

The results revealed that there was great variance both between elementary schools and within schools as to programs, methods, and time allotment assigned to handwriting. Handwriting develops over time in layers of understanding and skill as students pass through the grades, as with other subjects, and yet half the schools did not have a program consistently aligned through grades in a school, so children might be learning one style one year and another the next. Some teachers gave no direct instruction of handwriting, while others at the same grade level gave five hours or more per week; one school taught handwriting only in kindergarten, others to fourth grade. There was an understandable variance in attitude among teachers, with some feeling that the demands

of standardized tests precluded handwriting instruction, and others feeling satisfied with instruction.

The lack of handwriting instruction in classrooms impacts all students but is often of greater significance to students who have been identified with disabilities that qualify them for special education services, and who need direct and consistent instruction to acquire a skill. Nineteen percent of students with IEPs were in classes in which the teacher gave no direct instruction in handwriting and 75% were in classes with an hour or less of handwriting instruction a week. A clear and consistent policy in the district and within schools would benefit all students.

Table of Contents

	Page
List of Figures	vi
Chapter One	1
Chapter Two	12
Chapter Three	25
Chapter Four	35
Chapter Five	46
Figures	58
References	71
Appendix A	74
Appendix B	75
Appendix C	76
Appendix D	77

List of Figures

	Page
<i>Figure 1.</i> Number of teachers who responded to the survey by grade.	58
<i>Figure 2.</i> Percentage of teachers by grade who directly teach handwriting.	58
<i>Figure 3.</i> Handwriting programs used by teachers.	59
<i>Figure 4.</i> Amount of time teachers give direct instruction in handwriting in class per week.	59
<i>Figure 5.</i> Amount of time teachers give direct instruction in handwriting in class per week (kindergarten).	60
<i>Figure 6.</i> Amount of time teachers give direct instruction in handwriting in class per week (grade I).	60
<i>Figure 7.</i> Amount of time teachers give direct instruction in handwriting in class per week (grade II).	61
<i>Figure 8.</i> Amount of time teachers give direct instruction in handwriting in class per week (grade III).	61
<i>Figure 9.</i> Amount of time teachers give direct instruction in handwriting in class per week (grade IV).	62
<i>Figure 10.</i> Percentage of teachers giving handwriting for homework by grade.	63
<i>Figure 11.</i> Percentage of teachers who encourage students to hold a pencil in a particular way.	64
<i>Figure 12.</i> Percentage of teachers who direct students how to form	

individual letters.	64
<i>Figure 13.</i> Amount of time students with IEPs receive direct instruction in class per week (kindergarten).	65
<i>Figure 14.</i> Amount of time students with IEP's practice handwriting in class per week (kindergarten).	65
<i>Figure 15.</i> Amount of time students with IEPs receive direct instruction in handwriting in class per week (grade I).	66
<i>Figure 16.</i> Amount of time students with IEPs practice handwriting in class per week (grade I).	66
<i>Figure 17.</i> Amount of time students with IEPs receive direct instruction in class per week (grade II).	67
<i>Figure 18.</i> Amount of time students with IEP's practice handwriting in class per week (grade II).	67
<i>Figure 19.</i> Amount of time students with IEPs receive direct instruction in class per week (grade III).	68
<i>Figure 20.</i> Amount of time students with IEP's practice handwriting in class per week (grade III).	68
<i>Figure 21.</i> Amount of time students with IEPs receive direct instruction in class per week (grade IV).	69
<i>Figure 22.</i> Amount of time students with IEP's practice handwriting in class per week (grade IV).	69
<i>Figure 23.</i> Percentage of teachers who would spend more time on handwriting instruction if more time were available.	70

Handwriting at Elementary Level in Santa Fe Public Schools

Handwriting has traditionally been an important component in the elementary curriculum and a necessary proficiency to be acquired by students. Yet, in today's world of technological alternatives, handwriting is no longer considered as essential as previously. I am a special education teacher and find that many of my students, all of whom are in regular classrooms part of the day, have difficulty with handwriting. There are also many children who are not served by the special education program who struggle to communicate in handwriting. My interest is to what extent handwriting is taught in regular education classrooms, kindergarten through fourth grade, in the school district in which I work. In regard to students served by the special education program, I am interested to know whether schools are following an inclusion program that exposes them to handwriting instruction in the regular education setting.

The significance of handwriting and its instruction has a long history in mankind's heritage. Handwriting developed independently in ancient civilizations and was a mark of culture, education, and communication, indispensable to the evolution of each culture and to the individual (Gaur, 1987). In modern history, handwriting remained a signifier of a person's education and development (Thornton, 1996). It is a sensory experience that develops fine motor skills and connects cognitive and physiological activity (Levine, 2002).

Children are naturally drawn to pick up writing implements and enjoy pre-writing activities, yet, instruction is required to acquire the refinement of legible handwriting that reflects the accepted norm of letter formation and spacing. As children learn to write, handwriting becomes a tool for each child to communicate ideas from the brain to paper

and to others; it is a form of self-expression, creativity, and communication. The role of handwriting is important in cognitive and motor development and, therefore, the advantages of a good hand, and the impediments caused by handwriting difficulties, should not be ignored.

I have taught handwriting in different settings over the past five years and, while I have not documented a positive correlation between handwriting instruction and improvements in reading and writing, I have found that handwriting instruction leads to confidence and positive self image, an enjoyment of the written word, and writing fluency. Informal assessments of students' handwriting in schools show that many students do not write with ease, facility, and readability. This concerns me, and I suspect that handwriting is not being given the amount of time in the classroom that has traditionally been devoted to it, in a modern world that demands a familiarity with a wide range of material beyond the traditional school curriculum.

The intent of this field project was to look at the current status of handwriting instruction in Santa Fe Public Schools in regular education classes, kindergarten to fourth grade, to seek information as to whether handwriting is being taught directly and consistently in elementary classrooms. The focus on special education students was to learn whether children identified by the special education program are receiving handwriting instruction in inclusion settings.

Problem

Lack of instruction is a possible and likely cause of difficulties with handwriting. For children who write slowly, unevenly, and illegibly, their handwriting can be a burden and an embarrassment. As with reading, some students learn handwriting without

difficulty and have a clear and serviceable hand that allows them to communicate efficiently and aesthetically, while other children, a group that includes many served by the special education program, need direct and explicit instruction to master the skill; direct instruction is needed for skill acquisition in handwriting as in other subjects. Remedial handwriting may be seen as the domain of occupational therapy, yet most of our students in the special education program are in inclusion settings and need instruction in the regular classroom. Without direct instruction, students pass through the early grades forming letters with a lack of confidence and incorrect directionality, which makes a transition to cursive and mature writing difficult.

A lack of instruction at elementary level leaves a legacy of bad handwriting that usually lasts a lifetime. In my experience teaching at the high school level, many students' handwriting is unclear and hard to decipher, capitals and lower case letters are mixed, and the hand is slow to write. Students have not mastered the fundamentals of handwriting well enough to find it a helpful tool that flows from their fingertips. This is typical, I understand, of student handwriting and is indicative of a lack of instruction. On the other hand, I have taught explicit handwriting instruction in regular and remedial settings at elementary and secondary level and have seen children who previously struggled take pride and delight in their handwriting.

For students who either have not received sufficient instruction, or have an impediment that is reflected in their handwriting, communication becomes slow and frustrating and inhibits the flow of ideas. There is evidence that difficulties with handwriting can affect actual written content and that handwriting speed is an important variable in written composition (Graham, Berninger, Weintraub, Schafer, 1998).

Handwriting that is untidy is often difficult for the writer and others to read, can lead to low self-esteem, and inhibit communication.

Purpose

The purpose of the handwriting study was to find the extent to which handwriting is part of the curriculum in classrooms in Santa Fe District's elementary schools and what is the overall policy towards handwriting. As with mathematics, or spelling, or other disciplines, it is easier for students passing through the grades to be taught the same program progressively year by year as they build upon skills in an upward spiral of skill acquisition. Because of this, I am interested in whether schools have adopted a handwriting course to be taught in the grades that teach handwriting. There are various styles of handwriting instruction available which vary to a lesser or greater extent from one another. The question as to whether one course is better than another is beyond the scope of this project.

As a special education teacher, I am particularly interested in how much handwriting instruction students served by the special education program receive in their regular education inclusion settings. Preliminary and fundamental instruction, as part of daily routine, provides a foundation in skill acquisition that may mitigate the need for later remedial referrals to occupational therapy for students with poor handwriting. To gain information in relation to special education students, regular education students, and school policy in general, the study collected data from teachers and administrators to provide a full and balanced picture of handwriting instruction in the school district. This is of interest for policy decisions, for administrators, for teachers, and for those working in the special education sphere. The data reflected the importance or otherwise of

handwriting instruction in the district's schools and classrooms and the parameters of instruction that students currently receive.

The study was a two-fold inquiry, firstly, with school principals and, secondly, with classroom teachers. I was interested in whether school principals consider handwriting an important part of the curriculum, for which grades, and whether their schools have a handwriting program adopted throughout the school. I was also interested in whether an inclusion program was practiced at the school, and whether any change in handwriting instruction was planned in the near future. From classroom teachers I wanted to find out whether handwriting was taught directly in their classrooms, how much time was spent in handwriting instruction and practice, whether direct instruction included pencil grip and directionality of letter construction, and how many students in classes had an IEP. To gain an understanding of teachers' evaluation of handwriting instruction in the curriculum, I also asked if they had more time in the day, would teachers give more time to handwriting instruction. The purpose was to gain a general understanding of handwriting instruction in the district and in the classroom.

Assumptions

A major assumption of this study was that educators understood handwriting as a discipline that is traditionally part of the curriculum, that both teachers and principals understood the terminology of the questionnaires, and that they considered the topic of sufficient weight to warrant completing and returning the questionnaires. Handwriting has traditionally had a primary role in the curriculum and, therefore, I considered these assumptions valid.

I confined this study to regular education settings, many of which are inclusion settings, serving special education students together with students in regular education. The study did not include special education students who were not served in an inclusion setting, nor was it a study of the practices of occupational therapists within the public schools. Rather, the focus was on the mainstream setting and the extent and parameters of handwriting instruction that students received in the regular education classroom.

I have practiced calligraphy and taught handwriting to children for fifteen years. From a philosophical standpoint, and through proven experience, I know the benefits of handwriting instruction for children as an aesthetic practice developing sensory and cognitive integration, as well as communication and writing skills. This is my bias, the reason that I care about handwriting instruction, and the motivation that drove me to carry out this project.

Justification / Significance of the Study

Handwriting is an important subject to study, both to gain an understanding of historic and contemporary trends in research and practice through the literature review, and to gain information as to attitudes and policies towards handwriting in the school district in which I work. Handwriting is important historically and contemporaneously; it is an essential element of culture and cognitive development, yet its value seems threatened in the modern curriculum. As a special education teacher of students in inclusion programs, it is helpful to know to what extent my students receive handwriting instruction in the regular education classroom in order to perceive and serve their needs.

The topic of handwriting is of current significant interest as the use of computers and keyboarding skills in elementary grades is becoming more prevalent at the same time

as the demands of the No Child Left Behind legislation put pressure on the curriculum. The importance of handwriting comes into question in the electronic age when students can often communicate without writing by hand. In our local schools, students, and especially those for whom handwriting is slow and the product undecipherable, are often encouraged to word process finished work, particularly in the higher grades. Computers and keyboarding are a phenomenally effective tool to help students communicate using the written word. On the other hand, there are arguments that there will be occasions when students in school and in their working lives will have to write by hand and that it is a necessary skill for the work force. The new Scholastic Aptitude Test (SAT) writing component, first used in March, 2005, requires twenty-five minutes of hand written work to be graded by humans (O'Neill, 2005), which puts at a disadvantage those students who cannot write legibly and quickly. The computer/handwriting discussion is clearly a vital issue; research into the current status of handwriting is important, especially if students are going to be required to exhibit their handwriting in a test which affects college admission.

As stated, handwriting is an important current issue. Information as to attitudes and policies towards handwriting in the school district I work in will give helpful information to the district, principals, educators, and parents.

Research Questions

The research questions addressed in this study are:

- 1) What is the current status of handwriting instruction in Santa Fe Public Schools?
- 2) What instructional methods, materials, and time allotment are used by teachers in Santa Fe Public Schools to teach handwriting?

3) What are the implications for students served by special education of the handwriting programs in Santa Fe schools?

Definition of Terms

- The constitutive definition of handwriting is “writing done by hand using a pen or pencil” (Rooney, 1999). The operational definition of the term “handwriting” refers to writing by hand including all types of alphabetic practice, pre-writing exercises, print, manuscript, cursive, and any form of paper and pencil or pen exercises to strengthen and improve skills towards communication by hand-written word.
- Santa Fe Public Schools is the local school district in Santa Fe, New Mexico. There are twenty elementary schools within the district and one elementary charter school. I am including the district’s mission and vision statements as background information.

✧ OUR MISSION

The Santa Fe Public Schools exist to ensure that every student graduates prepared to be a productive citizen of our local and global community.

✧ OUR VISION

Our vision is to provide every student with a high quality education in a system devoted to equality, diversity and social justice. Every student will have multiple learning opportunities to meet challenging standards in a safe, caring, and respectful environment. Every student is expected to graduate prepared to take advantage of lifelong learning opportunities.

- The constitutive definition of “principal” is “the head administrator of a school (Rooney, 1999). The operational use of the term “principal” in this study refers to an administrator at an elementary school in Santa Fe School District during the semester of the survey.
- “Elementary classroom teacher” in this study has the operational meaning of a full time teacher (not substitute) who teaches a regular education grade level kindergarten through fourth grade in an elementary school in Santa Fe Public Schools.
- “Special education” refers in this study to the service provided to students who are identified to receive services through the special education program and have an IEP.
- “IEP” is an individualized education program for a child who qualifies for special education services.
- “Inclusion” refers to the education of students who receive special education services in a regular education setting.

Limitations

The study was limited to twenty one elementary schools in Santa Fe Public Schools. Data from both questionnaires was limited to the response elicited by the survey. In all likelihood principals and teachers who considered handwriting more important were the more likely to reply. I was not, within this study, trying to assess the effectiveness of any particular method of handwriting instruction. The study did not try to explore a possible correlation between classroom time spent on handwriting and any other aspect of school or academic work. The study did not investigate the work of

occupational therapists within the school system, handwriting instruction by special education teachers, or instruction in non-inclusive settings.

Overview of Study

The study is on the current status of handwriting instruction in Santa Fe Public Schools in regular education classrooms, kindergarten through fourth grade, with a specific emphasis on how handwriting instruction impacts students served by the special education program. Data was collected by a survey consisting of two written, self-report, cross-sectional questionnaires, one to elementary school principals and one to elementary classroom teachers. The study used mixed methods, both qualitative and quantitative, to gain data from the questionnaires by asking both closed-ended and open-ended questions. The survey to each of the principals of the twenty elementary schools and one charter school in the Santa Fe School District sought information about overall school policy towards handwriting instruction, whether a handwriting program had been adopted by the school, and whether the school followed an inclusion program for special education students. The questionnaire to elementary teachers sought information about individual teacher practice of handwriting instruction in each classroom, the program used, if any, and how much time was given to specific and direct instruction as well as to time for student practice of handwriting. To help give an understanding of how students served by the special education program received handwriting instruction in the regular education setting, teachers were also asked how many students with IEPs were in the class.

Information on regular education classroom instruction of handwriting is significant to special education teachers, regular education teachers, administrators, and policy makers at the district level. Students benefit from direct instruction and early

intervention in handwriting instruction in the early grades, enabling them to pass through school, and into adulthood, communicating in legible handwriting. This has been historically supported by sound instruction in the classroom. The significance of the subject of handwriting is evident in the range of literature relevant to the topic.

The literature reviewed for this study is explored in Chapter 2 and includes (a) historical perspectives on handwriting in civilization and in education. This framework places handwriting firmly in a central role on the stage of world civilizations and more recent educational practice. The reasons for this primacy are further examined in the literature review of (b) research into the relationship between sensory motor skills and cognitive development, and handwriting as a tool for written communication. The contemporary dilemma that has put handwriting instruction in jeopardy is reviewed in (c) research on the debate over technology and handwriting and whether the tools of the former make redundant the skills of the latter.

Chapter 3 explains the methodology used for this study. The research question is restated, operational definitions are restated, the population is discussed, and research methodology is explained. Instrumentation is discussed in relation to measurement scales, validity, and reliability. Data analysis is discussed as part of the methodology.

The results of the data collected is presented and analyzed in Chapter 4.

In Chapter 5 the results in relation to the research questions are discussed, conclusions drawn, and recommendations made for further study as well as ramifications affecting Santa Fe School District and elementary education.

Literature Review

The study on the status of handwriting instruction in Santa Fe Public Schools, as has been covered in the previous chapter, was a survey gathering data from two written self-report questionnaires to principals and teachers of kindergarten to grade four in the elementary schools in Santa Fe Public Schools. The purpose was to research the policy towards handwriting instruction, the range and methods used, and how many special education students receive handwriting instruction within the regular education setting. The difficulties many students have with handwriting, some of whom receive special education services, and the possible reduction in handwriting instruction contemporarily given in schools, comprise the problems that lead me to this study.

Theoretical Framework

The literature review for this study encompassed three main spheres:

- the historical context of handwriting instruction and its traditional central position in elementary curriculum
- research on handwriting as an instrument of cognitive and motor development and as a tool for written expression
- current trends in schools and in research on the importance of handwriting instruction and keyboarding

Historical precedent places handwriting in a strong position in education as an instrument to advance cognitive and motor development and as a communication tool. Modern research supplies evidence that motor skills aid cognitive development, though there has been less research on the direct correlation between handwriting and cognitive development. In 2000, a study was carried out by the Institute of Education, University of

London on the standing of handwriting instruction in the U.K., the results of which were published in 2006 (Barnett, 2006) but I have found no other studies that review the current status of handwriting instruction in the manner of this study. Currently there is a discussion as to the value of keyboarding and computer use as a viable alternative, not just an adjunct, to handwriting skills. It provides an interesting debate which I have explored in the third section of the literature review. Initially, we look at the historical background to handwriting.

Historical Context.

The historical context for handwriting originates in the first needs of mankind to record information in early civilizations (Gaur, 1987). Script developed as a result of social and economic advancement in societies that led to the need to store and represent data. As such it is emblematic of cultural and economic advance. Early writing systems were pictorial (thought writing), or phonetic (sound writing), the latter of which became dominant in alphabetic scripts (Gaur). Gaur dates the origins of writing in broadest terms to 20,000 years ago, and 6,000 years ago for codified systems (p. 35) which gives us a perspective on its central place in our heritage. The European system on which our writings are based was a purely phonetic system and dates from 3,000 years ago (p. 118). In the modern world, handwriting, similar to the handwriting we use today, came to America through a tradition of script passed on through the European heritage (Thornton, 1996).

Handwriting crossed the Atlantic and various styles were taught and practiced in American society in the seventeenth and eighteenth centuries, depending on the social position and sex of the writer (Thornton, 1996). In the seventeenth and eighteenth

centuries a greater number of people, both men and women, became literate as readers and writers. There was a strong tradition that the writer's personality was evident in the writer's script, which interestingly draws the connection between self and handwriting; handwriting is an exemplar of the self and children can be encouraged to see it as a form of self-expression. Thornton argues that script was differentiated from the increasingly common printing by being personalized: "Where print was defined by disassociation from the hand, script took its definition from its relation to the hand. Where print was impersonal, script emanated from the person in as intimate a manner as possible" (Thornton, p. 41). In this tradition, handwriting was still a skill of the professions and gentlemen.

From a somewhat select position, handwriting moved to the domain of education and schools. In 1791 *The Art of Handwriting* by John Jenkins was the first writing manual to be published in America (Ediger, 2002). By the 1830s, the introduction of the easily available metal nib and printed copybooks made handwriting instruction more accessible to a wider number of people and not dependent on a writing instructor (Thornton, 1996). Manuals had stressed "both a physical and a mental component" but in the nineteenth-century "the achievement of a beautiful hand was no longer represented as a passive process of mental imitation. Instead, it was regarded as an active process in which the soul was uplifted and the body disciplined" (Thornton, p. 47). This connection between cognition and motor skills remains central to the handwriting discussion today. The premise that writing improves both culturally and mentally was universally accepted.

In the American Victorian era, the influential New Englander whose name characterizes Victorian writing, Platt Rogers Spencer, elaborated upon the moral traits of

writing. He published a handwriting system in the 1840s, connecting writing with a moral and aesthetic philosophy (Thornton, 1996). In the nineteenth century “Victorian penmen represented the mental component of penmanship as a means of self-elevation” (Thornton, p. 50). In a time of easily available print, handwriting became the portrayer of individuality and character through which true temperament could shine.

In the early twentieth century the emphasis in handwriting instruction turned to automatism and the training of the body to write automatically, characterized by A. N. Palmer, a businessman who promoted a “whole-arm movement” writing system based on drills. Palmer’s methods were challenged by academics and educators, such as Freeman, who argued that handwriting instruction should take place at a later age and be less exacting, that it was not biologically normal for children to produce such exact replica scripts, but rather to develop as individual writers. The competition between Palmer and his adversaries, proponents of “finger movement writing,” went on through the 1920s in an educational world where standardized testing was gaining acceptance. By 1929 there were some four hundred standardized tests in existence (Thornton, 1996). Legible handwriting was a requisite for good test scores, so handwriting remained important and a part of the wider debate in psychology and education circles.

Academic and psychological advances in the late nineteenth and early twentieth century influenced the concept of handwriting. Due to the concept of evolution, the individual was seen as an organism, and due to thermodynamics, as a human motor. Consciousness became subservient to the unconscious, as exemplified in the rise of behaviorism in psychology (Thornton, 1996). Penmanship was considered a motor skill to be learned in drills, particularly by the less academic students as a physical activity and

as a means to train the body and the mind. It was advocated for the reform of delinquent children (Thornton). A California supervisor of penmanship, Letta Severance Hiles, explained “Many are the pupils who have great difficulty in gaining book lore, but who find the manual arts attractive” (Thornton, p. 158). Success in penmanship was said to increase self-respect in troublesome children and provide an example of order.

A counter movement in the nineteen twenties rejected commercial writing programs and agreed with Freeman that handwriting should be age-appropriate for children. The manuscript movement was initiated in the United States by Marjorie Wise, an English woman who taught at Columbia University and found wide acceptance for handwriting as the tool of the individual to communicate ideas and express the self. The letter forms were simple and easy to learn and related to print, which helped reading. Today, handwriting is still recommended as a means to develop reading (Institute of Education, Zaner-Bloser). Drills were superseded by writing for its own sake. Early advocates argued that cursive was unnecessary and that students would naturally develop their own writing characteristics.

In the later twentieth century the debate continued to focus on the style of handwriting taught and, more recently, whether cursive should be taught. There has been discussion over the advantages of the D’Nealian approach of slanted manuscript alphabets over traditional manuscript alphabet. I will cover the contemporary discussion in part three of this literature review.

Motor skills, cognitive development, and writing.

As has been shown in the historical review, there has been a long tradition in America of associating cognition and handwriting, which has to be seen in the larger

context of cognition and motor development. The purpose of writing is to communicate, and children use handwriting both for self-expression and to communicate with others. The argument for handwriting builds on a holistic understanding of children.

Mind and body are interconnected in one organism and children learn through doing, a foundation of modern education. Sensory integration is important in cognitive development (Ayres, 1979; Hannaford, 1995). The human organism is an interrelated whole in which mind and body integrate, as explained by Hannaford, “The neural connections between the motor cortex and the formal reasoning area of the frontal lobe underscore the importance of movement to thought processing” (Hannaford, p. 89). The “inputs” that receive sensory information are the auditory, vestibular, proprioceptive, tactile, olfactory, gustatory and visual sensory systems that work together (Ayres). The “end products” result in physical manifestations of competence. Concentration, coordination, cognitive skills, and self esteem are dependent on sensory integration. In the words of Mel Levine, “Much of our motor output is guided by information from one or another form of input, such as language, objects moving in space, touch sensations. The challenge is to plug the input into the proper output” (Levine, 2003, p.21). Levine goes on to explain the process of linking input and output, and that children have motor problems from visual-motor or visual-perceptual dysfunctions. In writing terms, this would be evident in a child not being able to copy off the chalk board. In cases where children can only vaguely visualize the letter, writing is “painfully labored, and inconsistent” (Levine, p. 22).

Handwriting can be used as a helpful practice to further sensory integration. Success in handwriting helped the self-esteem of students identified as having learning

disabilities after an intervention using sensory integration strategies (Keller, 2001).

Handwriting is a sensory process involving hand-eye coordination and an aesthetic sense (Sassoon, 1999). These assertions mirror the arguments of proponents of handwriting instruction through the history of America. Modern scientific advances further confirm the connections between mind and body.

Levine explains the complex skills involved in writing: “Students have to remember spelling, punctuation, capitalization, grammar, prior knowledge, and their own ideas all at once” (Levine, 2002 p.116). If handwriting skills are not fluent, this is yet another struggle. Writing involves “some of the most complex muscular manipulations” (Levine, p.171). For some children who suffer graphomotor disorders, letter shapes and the muscular movements needed to execute them are difficult to remember. In Levine’s words, “Students vary in how rapidly and accurately they can receive from memory these elusive motor sequences. As one second-grade boy told me, ‘A lot of times when I want to make a ‘d,’ my brain tells my fingers to make a ‘b.’ Then I notice it later and have to fix it.’” (Levine, p.180).

The fundamental reason we write is not for aesthetics but to communicate; the earliest script marks in ancient civilizations were to record information for later retrieval. Handwriting developed as a tool to communicate and that is a standard by which to judge its efficacy today. Children themselves considered that for good writing the most important factor was handwriting, followed by spelling, and other production requisites of writing (Kos & Maslowski, 2001). For the children it was important to be able to write clearly and quickly, whereas their teachers valued expression and creativity.

A study on handwriting speed and legibility found that children wrote more legibly while copying than creating, and that legibility declined when children were encouraged to write quickly (Graham, Berninger, Weintraub, Schafer, 1998). This emphasizes that handwriting skills need to be automatic so as not to impede the creative process. Handwriting speed is cited as a strong variable in students' compositional ability in writing. The researchers also found that girls' legibility was greater than boys'. There was little improvement in legibility in the first four grades, though improvements in upper elementary grades were maintained in middle school.

Supplemental handwriting instruction helps fluency in writing (Graham, Harris, Larsen, 2001). In Berninger et al's study in 1997 (as cited in Graham et al.) of five varying handwriting interventions lasting a total of eight hours, all groups had improved handwriting compared to the control, and the group showing most improvement (writing from memory having looked at an example with numbered arrows) had higher scores of compositional fluency in a norm-referenced measure. A further study by Jones & Christensen (as cited in Graham et al.) showed that students with poor penmanship who were given supplemental handwriting instruction for ten minutes a day improved to reach the handwriting and story writing levels of their regular peers. The study was for eight weeks and instruction included how to form lower-case letters of the alphabet, correction of letter formation, and writing letters fluently. The contrary lack of instruction in handwriting causes handwriting difficulties that impede student success. Lower grades are given to students whose writing is poor regardless of content (Keller, 2001).

Current trends.

The main current debate focuses on computer skills versus handwriting, yet there is still a debate over the benefits of one handwriting style over another. One discussion is over the relative merits of straight and slanted manuscript. Sassoon favors the latter: “The whole basis of teaching writing from the beginning with static print, which requires retraining to a different writing movement later on, is against children’s interest. Flowing, separate letters ... lead naturally into cursive as the child matures” (1983, p. 11). It has been said that slanted manuscript eases the transition to cursive, but a study by Steve Graham found there was no significant difference (1993).

Another discussion takes place over the merits of manuscript and cursive. A study explored the relationship between handwriting style and speed and concluded that the quickest student writers wrote a combination of manuscript and cursive (Graham, 1998). Advocates of manuscript argue that “Learning the manuscript alphabet is valuable because it supports young children's reading development with its simple letterforms that closely resemble print” (Zaner- Bloser). The repeated practicing of letters, particularly when they look like print, helps gain a familiarity with letters and their sounds, and so learning to write helps reading. Adams as cited in a Zaner-Bloser article wrote, “First, it has been shown that learning about letters frequently turns easily into interest in their sounds and in the spellings of words. Second, familiarity with letters is strongly related to the ability to remember the forms of written words and with the tendency to treat print as an ordered sequence of letters rather than a holistic pattern” (Zaner-Bloser).

There is an argument, as was first advocated by the supporters of manuscript in the nineteen twenties, that cursive should not be taught. Today children usually learn

manuscript and then three years or so later learn cursive. Against this it is argued “their attention is diverted away from the content of their writing and redirected back to learning a new writing form (cursive)” (Wallace, Schomer, 1994). Points made by Wallace and Schomer in criticism of cursive are: (a) if children are thinking about writing, they cannot think about content; (b) adults prefer manuscript to cursive; (c) secondary teachers do not insist on cursive so it is learned but not used; (d) teaching only one style increases speed and automation.

The purpose of this study was not to weigh the particular value of one style of handwriting over another, so I just include this information on current discussions as background to the various styles that are practiced in schools. However, computers versus handwriting provide a greater debate than any particular handwriting style.

The more fundamental debate on keyboarding and the computer versus handwriting is a debate that has strong arguments on both sides. An example of the arguments for and against were laid out in an article from the British Broadcasting Corporation (BBC) on eighteen elementary schools in Bergen, Norway where writing is taught first on the keyboard rather than by hand until cursive is taught at age eight (“Learning to write”, 2003). The director of the pilot project, Prof. Trageton, calls it “a splendid example of playing by learning”; children publish their written work and improve writing and critical skills. Trageton points out that the children are using all ten fingers to key board rather than three to write and can express themselves through drawing when they cannot write by hand. The project has been criticized by Lennart Winnberg from the University of Goteborg who says that “handwriting ‘results from the maturing of personality,’ and that depriving children of it was developmentally wrong”

(“Learning to write”). The children on computer were apparently better compositional writers at the end of the pilot project than a control group.

Technology is a vibrant field and there are a plethora of word recognition software and keyboarding aids. One tool is voice recognition software that has become increasingly usable and is particularly helpful for those who cannot type for whatever reason (Smith 2006). A study by Barrera, Rule, and Diemart (2001) compared writing achievement of first grade students writing by hand and on the computer. They found that students wrote more on the computer but that there was no difference in on-task behavior, and they did not assess creativity. I have not found any studies that take a longitudinal view of children using the computer at an early age; the long term outcome has to be the most interesting information.

Leonard Sax argues that children need to experience the real world and that computers may be taking them away from essential learning experiences, that children learn through experiences, not through facts (Sax, 2007). Sax writes quoting Richard Louv: “The end result of a childhood with more time spent in front of computer screens than outdoors is what Louv calls ‘cultural autism, The symptoms? Tunneled senses, and feelings of isolation and containment...That which cannot be Googled does not count ’” (p. 30). The touch of paper and pencil or pen and the tactile sense of writing are multi-sensory sensations that connect mind and body.

The most major study of handwriting across different schools, and the one to most closely resemble this present study, was done by researchers from the Institute of Education, London University. Concerned by handwriting in schools in the UK, the researchers undertook a survey of handwriting instruction in 2000 (Barnett, Stainthorp,

Henderson, and Scheib, 2006). The study looked at handwriting instruction in thirty-nine primary schools in the UK. Most of the schools had someone designated as responsible for handwriting and a written handwriting policy, but a quarter had one without the other. Most schools taught handwriting as a separate subject but less than half put time aside for practice and only a fifth of those with a handwriting policy taught speed skills: slow handwriting is an impediment in written exams (Barnett et al.). They found that only one third of teachers had been shown how to teach handwriting in teacher training courses and half of all teachers felt they had not been given sufficient training. One of the researchers, Rhona Stainthorp, is quoted, “Unless children learn to write legibly and at speed, their educational achievements may be reduced and their self-esteem affected. Handwriting is an essential skill for everyone, even in this age of computer technology” (Institute of Education).

The authors of the U.K. study clearly felt the need for students to write clearly and quickly. Reasons for writing well were listed by Wallace and Schomer: a) quickly write short notes to friends, (b) take notes at business meetings, (c) complete application forms, (d) write responses to school assignments, (e) jot down reminders to themselves (1994). The need to write clearly is underscored in the case of doctors who illegibly write prescriptions (Hughes, 2003, Ediger 2002). Ediger writes that the Medical Defense Union has as the first commandment “Thou shalt write legibly” and considers that poor handwriting also developed from doctors always being in a hurry and writing quick notes in medical school. Hughes argued that university students cannot read their notes. It could be argued that a word processing should be used in these cases but often a computer is not handy and often it is quicker to write a note by hand.

Whether we think that students should be writing by hand or computer, in 2005 the new, revised SAT test introduced a twenty-five minute element that has to be handwritten (O'Neill, 2005). This seems an enormous disadvantage to students who have difficulty with handwriting and puts an even greater emphasis on training rather than natural intelligence. It seems favorable that the test involves writing rather than multiple choice, yet, for many students today, who have not consistently been asked to write well by hand, it will be difficult. If this is the way testing is going, then we need to teach our students the requisite skill.

The current trends in education that affect the handwriting debate have been discussed in this chapter along with the evidence of handwriting's role in cognitive and motor development; the chapter began with a review of the historical context in which handwriting gained such an important role in our culture. Handwriting has held a prominent position, not only in the historical United States culture, but in the culture of civilization. The challenge both from computer technology and contemporary demands upon the curriculum have brought into question the importance of handwriting in elementary education. The present study sought to gauge contemporary approach and attitude to handwriting instruction in the classroom using a survey.

Methodology

Handwriting in Santa Fe Public Schools was a mixed methods study using quantitative and qualitative methods to gain data from principals and teachers within the school district as to handwriting instruction. The instrument used was two self-report questionnaires. The questions in the survey asked for information that was (i) quantitative in nature: the amount and type of handwriting instruction and (ii) qualitative in nature: the attitude and perceptions of teachers and principals to handwriting. The methodology used in the study is explained in this chapter.

Restatement of Research Questions

The research questions for this study addressed the current standing of handwriting in elementary education in Santa Fe, handwriting instructional methods, and special education students. The research questions for this study of handwriting were:

- 1) What is the current status of handwriting instruction in Santa Fe Public Schools?
- 2) What instructional methods, materials, and time allotment are used by teachers in Santa Fe Public Schools to teach handwriting?
- 3) What are the implications for students served by special education of the handwriting programs in Santa Fe schools?

Definition of Terms

- The constitutive definition of handwriting is “writing done by hand using a pen or pencil” (Rooney, 1999). The operational definition of the term “handwriting” refers to writing by hand including all types of alphabetic practice, pre-writing exercises, print, manuscript, cursive, and any form of paper and pencil or pen

exercises to strengthen and improve skills towards communication by hand-written word.

- Santa Fe Public Schools is the local school district in Santa Fe, New Mexico. There are twenty elementary schools within the district and one elementary charter school. I am including the district’s mission and vision statements as background information.

✧ OUR MISSION

The Santa Fe Public Schools exist to ensure that every student graduates prepared to be a productive citizen of our local and global community.

✧ OUR VISION

Our vision is to provide every student with a high quality education in a system devoted to equality, diversity and social justice. Every student will have multiple learning opportunities to meet challenging standards in a safe, caring, and respectful environment. Every student is expected to graduate prepared to take advantage of lifelong learning opportunities.

- The constitutive definition of “principal” is “the head administrator of a school” (Rooney, 1999). The operational use of the term “principal” in this study refers to an administrator at an elementary school in Santa Fe School District during the semester of the survey.
- “Elementary classroom teacher” in this study has the operational meaning of a full time teacher (not substitute) who teaches a regular education grade level kindergarten through fourth grade in an elementary school in Santa Fe Public Schools.

- “Special education” refers in this study to the education of students who are identified as having an exceptionality that qualifies them to receive services through the special education program and have an IEP.
- “IEP” is an individualized education program for a child who has been identified for special education services.
- “Inclusion” refers to the education of students who have been identified to receive special education services in a regular education setting.

Population and Sample

This field project was a survey in the form of two self-report questionnaires to principals and to teachers (Appendices A & B).

- The survey was sent to the entire population of both groups surveyed:
 - (i) Principals of the twenty elementary schools that are in Santa Fe School District and the one charter elementary school.
 - (ii) Teachers who are full time classroom teachers (not substitutes) in regular education, teaching grades kindergarten to fourth grade in Santa Fe School District and the one charter elementary school.
- In the case of both populations, principals and teachers, the units of analysis were the entire population of this survey.
- Each questionnaire was accompanied by a cover letter from the researcher assuring confidentiality and anonymity (Appendices C & D).
- The approval of Dr. Carpenter, Superintendent of Santa Fe Public Schools, was given before any research was carried out.

Research Methodology and Design

Data for the study was gathered through a written survey using two questionnaires. Both instruments were self-report questionnaires with open and closed-ended questions. Each was short and designed to be answered in less than fifteen minutes. The principal of each school received a packet in the school district mail containing a letter and copy of the questionnaire for principals and sufficient copies of the letter to teachers and the questionnaire for teachers for all the regular education teachers in the school grades kindergarten through fourth grade. Teachers and principals were asked to return the completed questionnaires through the district mail to the researcher at the school she worked at. This incurred no cost to those responding to the survey.

Instrumentation

Measurement Scales.

In the questionnaire to principals (Appendix A), there were five questions designed to obtain information on the policy within each school on the instruction of handwriting and the opinion of the principal as to its importance and relation to cognitive development.

The survey item “Has your school adopted a handwriting program to be used in the school?” had a “yes” or “no” answer and a supplementary question, dependent on a positive answer, relating to the grades in which it was taught.

If a program had not been adopted the survey item option was “If the school has not adopted a school wide program of handwriting instruction, is the handwriting style taught in classrooms chosen by individual teachers?”, followed again by a supplementary answer: “If ‘yes’, in which grades is specific handwriting instruction taught?”

The opinion of principals on the relationship between handwriting and cognitive development was asked in the question “How important do you consider the practice of handwriting is as a component of cognitive development? Please comment if you wish.”

The fourth survey item question asked whether a full inclusion program was followed, to give information on whether students served by special education received handwriting instruction in the regular education classroom. Space was given for commentary if the principal wished to comment.

Principals were asked “Are you planning any changes in the handwriting program at the school?” and again there was room for comment.

The questionnaire was a combination of closed-ended and open-ended questions designed to gain information on the type of handwriting instruction used in the school and the attitude of each principal to handwriting.

The questionnaire to teachers (Appendix B) was a short self-report questionnaire containing nine questions. Survey items asked what grade was taught, if handwriting was directly taught, and whether a handwriting program was used in the classroom; if the answer was “yes,” a subsidiary question asked which handwriting program.

Survey items asked questions relating to how much time was spent in direct instruction of handwriting, how much time the students had for practice of handwriting skills, and whether handwriting practice was given for homework.

Survey item seven asked teachers if they taught a specific pencil grip and whether they directed students to form letters in a particular direction.

The survey item relating to special education asked how many students in the class had an IEP.

As with the principal survey, the last survey item was intended to get a sense of future developments or desires and asked if the teacher would spend more time on handwriting if time allowed it. Again, there was room for comment if the teacher so wished. The questionnaire was a combination of closed-ended and open-ended questions designed to elicit the opinion of teachers as well as to collect data as to practice within elementary schools in the school district.

Before carrying out the survey I acknowledged that I would receive more response from those principals and teachers who felt positively about handwriting and the teaching of it than from those who were neutral or negative. The instruments were designed to provide information as to whether elementary schools have adopted a handwriting curriculum, which handwriting styles and methods were taught, approximately how much classroom time was given to handwriting instruction and practice in varying grades, and, through open-ended questions, principal and teacher attitude and opinion relating to handwriting. I was not, within this study, trying to assess the effectiveness of any particular method, nor whether time in the classroom spent on handwriting had a positive correlation with any aspect of academic work.

Validity.

The instruments used in this study were designed to elicit responses and build data to answer the questions that provided a framework for this study.

- The central question of the study “What is the current status of handwriting instruction in Santa Fe Public Schools?” required answers that were both quantitative and qualitative, relating both to actualities of instruction and to attitude.

- Questions in both instruments, (to principals and to teachers), requested information that directly responded to the second question of the study “What instructional methods, materials, and time allotment are used by teachers in Santa Fe Public Schools to teach handwriting?”
- The third question of the study, “What are the implications for students served by special education of the handwriting programs in Santa Fe schools? ” was addressed in both question 4 of the questionnaire to principals: “Is an inclusion program followed in your school for children who receive special education services? Please comment if you feel explanation is necessary.” and in question 8 of the questionnaire to teachers: “How many of your students have an IEP?”
- The instruments were designed to provide data that relates to the purposes of the study.
- I juried the instruments with teachers for content-related validity in relation to this study.
- Each questionnaire had questions to elicit responses both qualitative and quantitative in nature to allow comparison and confirmation of results.
- The intention of using two questionnaires, one to principals and one to teachers, was to provide further comparison and ensure the validity of inferences that could be made from the data by having two different sources of data.
- Both target populations of the survey, teachers and principals in Santa Fe School District, were surveyed in entirety allowing no error in sampling.
- A Likert scale is used in question 3 of the principal questionnaire, giving the choices “Very important, Important, and Not important” in answer to the question

“How important do you consider the practice of handwriting is a component of cognitive development?” There is also room for comment if necessary. The intention was to give few choices so that the interpretation of scores would be straight forward and allow for explanation. All other questions have “yes” or “no”, answers or were open-ended questions designed to give respondents a chance to explain the circumstances.

Reliability.

- The survey used in this study was sent on the same day through inner district mail to the schools involved in the study.
- The questionnaires were self-report and were returned in district mail to the researcher.
- As far as possible all participants were presented with similar circumstances to respond to the survey.
- The researcher alone was responsible for scoring the data to further consistency.
- Each school site received a principal and teacher instruments, comparison of which provided evidence of reliability.
- Data were collected anonymously from both instruments. Data were collected and analyzed without any reference to individual names of employees of the Santa Fe School District.

Statistical Analysis

The data collected by the two instruments were quantitative and qualitative and analyzed accordingly.

The quantitative data were analyzed for:

- schools that have adopted a handwriting program and in which grades in the school the handwriting program is used
- schools that have not adopted a program and whether the handwriting style is chosen by individual teachers and in which grades handwriting is taught when no school program is in place
- types of handwriting program used in classrooms
- time spent in direct instruction of handwriting
- classrooms in which handwriting is given as homework
- direction to students for pencil grip
- direction to students for letter formation
- inclusion programs followed in schools
- numbers of students with IEPs
- changes planned by principals in handwriting instruction
- whether teachers would teach more handwriting if there were more instructional time in the day

The qualitative data were analyzed for:

- how important principals considered handwriting as a component of cognitive development
- principal commentary on whether an inclusion program was followed in the school
- principal intentions regarding future changes in handwriting programs in the school

- teacher response as to whether they would teach more handwriting if there were more instructional time in the day

In the following chapter, I explain the results of the analyses I have made from the data collected by the two questionnaires comprising the survey on handwriting in Santa Fe Public Schools. I look at the results from the principal questionnaire, quantitative and qualitative, and then the results from the teacher questionnaire, quantitative and qualitative.

Results

The study on the status of handwriting instruction in Santa Fe Public Schools in elementary education classrooms, kindergarten through fourth grade, with a specific emphasis on students served by the special education program, collected data with a survey instrument consisting of two written, self-report, cross-sectional questionnaires, one to elementary school principals and one to elementary classroom teachers. The study was a mixed method study, both qualitative and quantitative, asking closed-ended and open-ended questions, designed to produce data to answer the research questions of the study. The survey to the principals sought information about overall school policy towards handwriting instruction and whether the school followed an inclusion program for special education students. The survey to elementary teachers sought information about individual handwriting instruction in each classroom, materials used, (if any), and how much time was given to direct instruction, student practice, and homework. Teachers also gave the number of students with IEPs in the class.

The first question of the research questions “What is the current status of handwriting instruction in Santa Fe Public Schools?” was answered specifically in data collected from questions 1, 2, 3, and 5 of the questionnaire to principals and by inference from questions 1, 2, 3, 4, 5, 6, and 9 of the questionnaire to teachers. The second research question of the study “What instructional methods, materials, and time allotment are used by teachers in Santa Fe Public Schools to teach handwriting?” was answered in data collected in questions 1 and 2 of the questionnaire to principals and by questions 3, 4, 5, 6, and 7 of the questionnaire to teachers. The third research question “What are the implications for students served by special education of the handwriting programs in

Santa Fe schools?” was answered in data collected in question 4 to principals and question 8 to teachers, in conjunction with information gathered in other questions. As there is some overlap in data collected by the instrument in answering the research questions, it will be clearer to present the data as it was collected from the instrument. Firstly, I will analyze the data collected in the questionnaire to principals and, secondly, I will analyze the data collected in the questionnaire to teachers.

The questionnaire to principals was sent to each of the principals of the twenty elementary schools and one charter school in the Santa Fe School District. Six of those surveyed responded, a response rate of 29%.

The first question addressed whether the school had adopted a handwriting program. Fifty percent of schools had adopted a program and fifty percent had not. Out of the three that had adopted a handwriting program, two used the program in grades K to 4 and one in K to 3.

Question 2, “If the school has not adopted a school wide program of handwriting instruction, is the handwriting style taught in classrooms chosen by individual teachers?” applied only to the three schools that reported that they had not adopted a handwriting program. All responded that individual teachers chose the handwriting style to be taught in their classrooms. In one school, handwriting was taught in grades K to 3, one only in K, and the other did not specify. From this, it seems probable that handwriting is taught less consistently through the grades in schools that have not adopted a program to be used in the school.

Question 3 asked “How important do you consider the practice of handwriting is as a component of cognitive development?” Answer choices were on a Likert scale: Very

important, Important, or Not important and respondents were asked to comment if they wished. Of the six respondents, four considered handwriting “Very important,” and two “Important;” therefore, all principals consider handwriting important or very important. Of those whose schools had adopted a handwriting program, two thought it “Important” and one “Very important.” The latter amplified on the answer with the comment, “It is key to eye hand coordination, fine motor development, and human communication.” This was the only extended answer to this question. The three who had not adopted a handwriting program each considered handwriting “Very important.”

The fourth question addressed special education concerns, asking if an inclusion program was followed in the school. Fifty percent said an inclusion program was followed, 20% said it was not, and 40% (two respondents) answered yes/no. Each commented; one said, “Not fully, however a few circumstances of inclusion occur. I would like more opportunities for inclusive services.” The other explained, “We have enrichment inclusion for all classrooms with identified students and resource room inclusion on a small scale.”

To question 5 “Are you planning any changes in the handwriting program at the school?” four principals replied “Yes.” They were asked to explain if they wished and each who replied “yes” wrote an extended answer. Of the four that planned changes, three were the schools that had not adopted a handwriting program; two of these implied they were considering a program for the upcoming year. The third, who said that handwriting was taught only in Kindergarten in the school, was thinking of ordering a “Kinder handwriting book.” The following are their extended answers:

- ◆ “Basically, I would like the staff to consciously look at handwriting instruction currently used. Next, I would like to focus on a schoolwide program to deliver instruction consistently.”
- ◆ “We are looking at some programs and will adopt one for next SY.”
- ◆ “Ordering a Kinder handwriting book- (consumable).”

One school that had adopted a program planned changes:

- ◆ “We will add 4th grade to the program next year. We have conducted a survey to address a writing program for 2007 -2008 SY.”

Of the two that replied “No,” neither gave an explanation. As already said, each had already adopted a handwriting program.

Sixty classroom teachers responded to the survey. This was a response rate of 26% from the approximately two hundred thirty kindergarten through fourth grade teachers in the district, including the charter elementary school, a slightly lower response rate than from principals. Question 1 asked which grade the respondent taught. The greater number of responses was from teachers of first through third grade (see Figure 1). Only five responses were returned from kindergarten teachers, compared to an average of 13 from first, second, and third grade teachers.

To question 2, “Do you directly teach handwriting in your classroom?” 83% responded positively. These results are shown by grade in Figure 2. The highest percentage by grade of teachers teaching handwriting was kindergarten (100%), third grade (93%) and 1/2 and 3/4 multiage (100%) – though it should be mentioned that one 1/2 respondent said that handwriting was only taught the first two months and there were only two responses in the 5/6 group.

Question 3 asked whether the teacher used a handwriting program. Seventy-four percent, representing forty-two respondents, said that they used a handwriting program and forty-two respondents named a handwriting program that they used (though these were not exactly the same forty-two who said they used a handwriting program). Thirteen percent of respondents answered positively that they directly taught handwriting and yet did not use a handwriting program. Of the handwriting programs used, by far the most popular was “Handwriting Without Tears” followed by D’Nealian and then seven other programs which each had less than four users each (see Figure 3).

Questions 4 and 5 asked how much time was spent in, firstly, direct instruction of handwriting and, secondly, class time for handwriting practice. Question 6 asked if students had handwriting practice for homework. These were important questions as handwriting for all students, and particularly for those for whom it does not come easily, need direct instruction and extensive practice time for handwriting to become fluent, comfortable, and an efficient means of communication. The data for the amount of time spent in direct instruction of handwriting are represented in Figures 4 – 9. The percentage of teachers that give handwriting as part of homework is shown in Figure 10.

Overall, 20% of teachers gave no time to instruction in handwriting, 65% gave half an hour to one hour, 10% gave one to two hours and 2% gave two to three, four to five, and more than five (see Figure 4).

All kindergarten teachers that responded to the survey gave direct instruction in handwriting. Of the five kindergarten responses, four said they directly taught handwriting half an hour to one hour a week, which is the equivalent of six to twelve minutes a day. Two of these gave half an hour to one hour of class time a week for

practice, one gave one to two hours and one gave two to three hours. The fifth kindergarten teacher said she taught for four to five hours a week, the equivalent of an hour a day (see Figure 5). The same teacher said the students had five or more hours to practice handwriting in class time a week. This teacher also gave handwriting as homework; only one other of the kindergarten teachers gave handwriting as homework.

Of the thirteen first grade teacher respondents, three said they gave no time to direct instruction of handwriting, eight gave half to one hour, one gave one to two hours, and one gave five hours or more (see Figure 6). This teacher, as with the kindergarten teacher, gave five or more hours of class time to practice and gave handwriting for homework. Each of the three teachers who did not directly teach handwriting gave half to one hour a week for practice. None of these three had a handwriting program they used. Of those who taught half to one hour a week, 50% gave half to one hour of class time for practice, and the other 50% gave between two and five hours. Eleven out of the thirteen first grade respondents, that is 85%, did not give handwriting homework.

Twelve grade two teachers responded to the questionnaire of which 33% said they did not directly teach handwriting in their classrooms. Fifty percent of grade two teachers gave no class time to direct instruction of handwriting. Of those that did give time to direct instruction of handwriting, 83% gave half to one hour a week and 17% gave one to two hours a week (see figure 7). The amount of class time for practice varied from no time to five hours or more. Sixty-six percent of second grade teachers did not give handwriting for homework, which included 83% of those who gave no time to direct instruction of handwriting. One respondent wrote, "I think letter formation should be

emphasized more in K – 1.” Another wrote, “I don’t like teaching handwriting out of context, so any writing assignment kids should try to be forming letters correctly.”

The data showed a greater focus on handwriting in third grade, probably due to the introduction of cursive, with all fourteen respondents giving time to direct instruction: 64% gave half to one hour of instruction, 21% gave one to two hours, and 14% gave two to three hours (see Figure 8). Almost all teachers of third grade gave the same amount of class time to practice as they did to direct instruction. Thirty-six percent gave handwriting for homework.

Nine fourth grade teachers answered the questionnaire. Only one indicated no time spent on direct instruction and most indicated half to one hour with a similar amount of time for practice (see Figure 9). The teacher who indicated no time did give class time to practice and gave homework in handwriting. Fifty-five percent of teachers gave homework.

I received seven responses from teachers of multiage classes, three teaching a 1/2, and two each 3/4 and 4/5. One 1/2 teacher indicated two to three hours instruction for the first two months and otherwise no time for practice or homework. Another wrote, “Students write and comment on how to form letters during Interactive Writing. Students practice with practice sheets, journal, story writing, math and during other subject areas.” One of the 3/4 teachers taught half to one hour and allowed the same for practice and gave homework. The other elaborated, “The handwriting usually takes place for 3rd graders during 4th grade band time (twice a week for 30 min). Now that we have switched over to cursive for most handwriting tasks I’m doing ‘on the fly’ handwriting instruction and the students have handwriting embedded into their other work.” One 4/5 class was

devoting no time to handwriting and the other 15 minutes “as per school wide program.” The teacher commented, “They should start in Kindergarten or 1st Grade! Cursive should start in 3rd Grade!” (underlined twice). Multi-age classes were shown to give more handwriting homework than other classes (see figure 10), though the few multi-age responses may make the results less reliable.

Question 7 asked if the teacher encouraged students to hold the pencil in any particular way (see Figure 11) and if the teacher directed children in how to form individual letters (see Figure 12). These directives lead to correct letterform, legible writing, and writing fluency. Seventy percent of teachers indicated they did encourage certain pencil grips and all but two teachers indicated they gave direction in how to form letters. One of those that did not give letter form direction taught first grade and the other a 4/5 multiage class. This respondent commented, “Too old to change.” A third grade teacher commented, “The students are not learning proper pencil grasp in Kindergarten. Penmanship is not emphasized in Grades 1 and 2. Many students enter 3rd grade not knowing how to form their letters.” This view was echoed in other comments.

Special education students were addressed in question 8, which asked teachers how many students in their class had IEPs. The purpose of this question was to find the hours of handwriting instruction that children who have been identified with exceptionalities and are served by special education receive in the regular education classroom. The results are shown in figures 13- 22 which show hours of direct instruction or practice of handwriting in the classroom by the percentage of students with IEPs in each grade. One third grade class had fourteen children with IEPs but the average was 3.4 per class. One of the five kindergarten teachers that had four students with IEPs (half the

total IEPs for kindergarten), gave 4 to 5 hours in direct instruction and practiced handwriting more than five hours a week. The other four kindergarten teachers returned very different responses as already discussed, directly teaching handwriting half an hour to one hour a week and giving varying amounts of class time to practice. Because of the low number of results from multiage classes, I did not chart the data as it could be misleading.

In all grades except kindergarten (as explained above), 75% of children in classrooms serving children who receive special education services in inclusion settings, receive none or half to one hour of handwriting instruction and practice a week, that is six to twelve minutes of each a day. Nineteen % of students with IEPs are in classes in which the teacher gives no direct instruction in handwriting and 56% are in classrooms that receive half to one hour of direct instruction.

The final question in the questionnaire to teachers, question 9, asked, “If there were more instructional time in the day, would you spend more time on handwriting instruction?” The teachers were asked to comment if they wished (see Figure 22). Twenty-eight of the sixty teachers responded that they would spend more time on handwriting if there were more time in the day. The longer responses to this question were interesting and I will report them grade by grade.

Four of the five kindergarten teachers would spend more time if it were available. One wrote, “If I had a program which was effective and appropriate for Kinders I would spend more time. We may try “Handwriting Without Tears” if there is money available.” Six out of the thirteen first grade teachers said they would spend more time if it were available; seven said not. Of those who said not, one said, “I integrate with journal

writing and interactive writing.” Of those who would like to give more time, one said, “Last year I supplemented HWT/Interactive Writing with ‘Alphabet 8s’ which I think is a ‘Brain Gym’ strategy. I would like to do this again next year and will hopefully make time for it early in the day.” Another wrote, “I enjoy teaching handwriting but it is a low priority – esp 2nd semester in first grade.” Another answered, “I don’t know.” The only teacher in the study who gave five hours or more to both instruction and practice wrote, “I believe my students get an adequate amount of time to improve their penmanship.”

An equivalent number of second grade teachers said they would or would not spend more time on handwriting. One teacher wrote, “I think letter formation should be emphasized more in K – 1.” This teacher had also put in a note by the question on direction of how to form individual letters “by 2nd grade, they revert back to old habits after the lesson.” Another teacher wrote, “I don’t teach handwriting the way I used to years ago – I just have too many other things to teach within the school day – I feel bad, but that is the reality of it today.” One teacher wrote at length and concluded “Handwriting can seem ‘quaint’ and somewhat ‘old school’ except when their handwriting is atrocious! Then everyone wants it to improve without effort! Handwriting is one of those annoying things because we have this weird attitude towards it or maybe it’s me.”

Among third grade teachers, six of the fourteen would spend more time on handwriting if there were more time in the day. The most outspoken wrote, “The students are not learning proper pencil grasp in Kindergarten. Penmanship is not emphasized in Grades 1 and 2. Many students enter 3rd grade not knowing how to form their letters.” Another wrote, “There is not a consistent model or clear expectations.” Others wrote that

they were trying to, “incorporate it into other curriculum areas of my classroom” and “Via CELL interactive writing, we review printing, letter information and spacing.”

Two out of the nine fourth grade respondents said they would spend more time on handwriting if there were more time. Fourth grade teachers felt pressed by the amount there is to cover; one commented, “Every minute of my day would have to be spent on math, reading, language + science – because those are the things that our President believes are important.” Three others referred to the standards that have to be covered. A sense came from some of the teachers’ responses that they expected handwriting to be covered in the lower elementary grades and that they were not satisfied that this was being done.

I have analyzed the data collected by the two questionnaires comprising a study of handwriting in Santa Fe Elementary Schools, examining the data question by question, both quantitative and qualitative. The response rates of 29% and 26%, though not high, gave enough data to provide meaningful information about the status of handwriting instruction in the district. The study done for London University by Barnett et al. on handwriting in schools in the U.K. (2006) was based on responses from thirty-nine schools, a response rate of 28%, similar to the current study. In many regards the U.K. study had similar findings, which I will discuss in Chapter 5. In this chapter, I will reflect on the current study in relation to the research questions that guided this study, draw conclusions, and discuss questions raised by the subject and propose recommendations for further study.

Discussion and Conclusions

The intent of this research on handwriting in elementary schools in Santa Fe was to examine the status of handwriting instruction in Santa Fe Public Schools, note the instructional methods, materials, and time allotment used by teachers to teach handwriting, and consider the implications for students served by special education of the handwriting programs in Santa Fe schools. These questions were well answered by the data collected, as has been discussed in the results represented in Chapter 4. The mixed method study, both qualitative and quantitative, including closed-ended and open-ended questions in the survey, provided numerical and descriptive information that gave statistical and narrative answers to the research questions. The participation of teachers and principals in responding to the questionnaires shows an interest and commitment to the subject, and all participation in this study was very much appreciated.

First research question

The first question in the questionnaire to principals was a pivotal question, revealing the extent of a school policy on handwriting, pertinent to the first research question on the current status of handwriting instruction. This was a key concern of Barnett et al., who completed a handwriting study for London University. They cite Tiburtius and Henderson (2005): “The deliberations leading to a school policy and the effect of a well-founded policy on practice seem to be a basic requirement for the teaching of handwriting, or indeed, any classroom skill” (2006). While Barnett et al. found that 72% of schools had a “designated person with special responsibility for handwriting and a written policy (on handwriting)” (p.6) they still found “considerable variation between schools in both the depth and breadth of their policies. Even more

variation existed in how these were implemented. For example few schools explicitly recognized the importance of ensuring that all children could write fast enough to cope with the demands of a busy secondary school, and even fewer made provision for practicing and consolidating the skill on a day-to-day basis” (2006). A lack of policy in schools was evident in the current study on Santa Fe schools and, while it is not beneficial to compare studies made in two different cultural locations, it is interesting to note that in Santa Fe no local school reported a policy that included a supervising teacher or had a policy beyond the adoption of a handwriting program. The U.K. study reported handwriting policies in schools that included the amount of time given to handwriting tuition, styles, transition to cursive, furniture size, pencil grasp, paper and when to introduce the use of a pen.

One of the main concerns that arose from the present study was that only half of the principals responded that their schools had adopted a handwriting program to be used in the school; the others left it up to individual teachers to choose what handwriting style they taught. This might easily result in a child’s being taught one style in kindergarten, another in first grade, and even a third in second grade, making the task of acquiring a fluent and serviceable hand difficult and frustrating, besides time consuming. In keeping with designing a spiral curriculum that builds upon skills through the grades, it would seem constructive to vertically align handwriting instruction, one of the basic skills our students need for academic success and communication.

In some countries, for example France, a national handwriting style has been adopted. That is not the case in the United States, and there does not seem to be a movement in favor of this; however, it might be helpful to students if locally there could

be greater cohesion. Penmanship is a basic skill that, if taught correctly, is acquired at an early age and built upon. It can become confused if a different method or style is taught or demanded each year. Ideally students could move from one school to another in a school district and receive the same instruction in handwriting. Second to this, it would be beneficial to students if, at least within each school, handwriting were taught consistently using the same program. Some teachers reported that they used to have a program that was no longer available to them. It would seem beneficial if a cost effective program were available at each school to be used in a range of grades. Good handwriting is not quickly acquired and requires consistent and regular practice to become a practical tool.

The questions to principals in this study relating to grades in which handwriting was taught in their schools revealed a variance between schools, with one reporting that handwriting was only taught in kindergarten. The variation between schools in the number of years that handwriting is part of the curriculum is concerning in light of the fundamental nature of handwriting and the requisite time taken for the development of a serviceable hand. All participating principals responded that handwriting was “Very important” or “Important,” yet clearly there was great variance as to what that meant in practice. The place of handwriting in the curriculum is undefined, as is its role in teacher education.

One point brought up in the U.K. study was that respondents felt that most teachers had not received sufficient training in handwriting in teacher training courses. I myself went through an Alternative Licensure program in Santa Fe and heard no mention

of handwriting at all. How important handwriting is and how much attention should be given to it are not well defined in teacher education or in school policy.

The final question to principals as to whether they were planning changes to the education program at their schools indicated that principals, besides the one adopting a book only for kindergarten, were intending to continue with an already adopted school wide program or move towards adopting a program for the school. From the data collected from principals it appears that half the elementary schools in Santa Fe have adopted handwriting programs and the others intend to consider so doing or make other changes. It is possible that a concern with handwriting, reflected in responding to the survey, would indicate that their schools were more likely to have adopted a handwriting program or be looking to make changes. Equally, participating teachers are likely to be those with a greater rather than a lesser interest in handwriting instruction. It is possible that those principals who were already thinking on these lines were lead to respond to the survey, so it may be that these results are not truly indicative of the ratio of elementary schools that have adopted a consistent program. The benefits of a consistent program are clearly delineated in the study by Barnett et al. Although the study in Santa Fe Public Schools was approved by the superintendent of the school district, principal response rate was 29%. A greater response rate would clearly have given more information and a further study might ask what programs have been adopted in school wide policies. This study would have been improved by asking principals which handwriting program their schools used and why.

The first two questions to teachers established the grade taught and the fundamental question as to whether the teacher taught handwriting, important in

assessing the status of handwriting instruction in the district. In the past, this would have been an unnecessary question, as handwriting was an essential part of the curriculum in the lower grades. Seventeen percent of respondents who taught grades kindergarten to fourth said that they did not teach handwriting. It would have been interesting to know the reasons for the choice not to teach it, and I would include this qualitative question if I were to repeat the study. Perhaps the students already had the skills and did not need time spent on it.

The final question to teachers asking if there were more time in the day, would they spend more time on handwriting, brought interesting responses reflective of the status of handwriting instruction in the district. The responses varied from those who felt they taught handwriting adequately and gave it enough time, to those that felt that curriculum was driven by standardized tests of which handwriting was not a part; the demands of standards and tests made it impossible to spend more time on penmanship, particularly in the higher grades. Almost half indicated that they would spend more time on handwriting if there were more time. The question intended, and was successful, in provoking qualitative answers that reflected teacher attitude. To some teachers handwriting presents another demand on instructional time, but not one that today is reflected directly in test scores at the elementary level.

Second research question

The intent of this study was not to make comparisons between the available handwriting programs but to discover the instructional methods, materials and time allotment used by teachers in Santa Fe Public Schools. Teachers were asked for the name or style of the handwriting program used in their classrooms. The responses are shown in

Figure 3. In this district “Handwriting Without Tears” is clearly the most favored. The work book for each child costs \$6. The style of writing is distinct and I cannot see it as a viable choice unless used consistently through the grades. It uses an upright cursive, which is not normally used, as the custom has been to write slanting forward to enhance speed. The intent of this study was to examine neither whether cursive is taught in the schools nor whether it is favorable or unfavorable for cursive to be taught, as has been argued (Wallace, Schomer, 1994). A further study into the use of cursive in the schools and the research on the benefits or detriments of a cursive hand would be helpful for policy decisions.

On October 1, 2007, Leslie Carpenter, Superintendent of Santa Fe Public Schools sent this message to the district:

PENMANSHIP – As I observe student writing (It IS GREAT) in classrooms and on bulletin boards District-wide, I have noticed that many, if not most students, are still using manuscript writing (printing) instead of cursive writing even in the upper grades. I am now asking that we add an additional common commitment – that of making sure our kids are learning cursive from the third grade onward and that there is a heavy emphasis in our elementary schools on this important skill. Students who are not prepared to write skillfully and fluently in cursive by the end of sixth grade are at a disadvantage throughout their years of schooling. Staff at all elementary schools are asked to meet and discuss this issue and implement an aligned penmanship program. If resources or training are necessary, principals should contact your Associate Superintendent to let us know what is needed. Thank you for your assistance in this important matter.

This indicates concern from the district leadership about handwriting, and is interesting in the light of the present study, the aim of which was to assess the status of handwriting instruction in Santa Fe. The superintendent calls for “an aligned penmanship program,” as advocated by the U.K. study and by the present writer. From the current research, it did seem that handwriting was given greater emphasis in third grade, traditionally the

grade in which cursive is taught. However, observation in the schools, as reported by the Superintendent, suggest that students are not using it in their daily writing.

The variance we have seen in responses to all questions was reflected in the great variance in time spent on handwriting both in direct instruction, practice, and homework time. The most striking variations were in kindergarten and first grade where most students were receiving half to one hour of instruction and practice and others were receiving more than five hours. It is clearly difficult to be precise about the amount of time given to a subject, and some teachers said they gave a certain amount only for the first month or first two months. Often it seems that more handwriting is done at the end of the school year, after standardized tests have been administered in some grades. The question remains as to whether students are receiving enough instructional and practice time, particularly in the early grades, to develop strong and utilitarian handwriting skills.

The greatest consistency across the district was indicated in teacher attention to pencil hold and letter formation. This was encouraging as these are fundamentally helpful to students in acquiring basic handwriting skills. The questionnaires to both principals and teachers were intentionally made brief so as not to burden the respondents and to encourage response. However, if a longer questionnaire had seemed appropriate, it would be interesting to know in greater detail how teachers guide letter formation and what to them are acceptable pencil grips.

Third research question

The third research question addressed the implication for students served by special education of handwriting instruction. Principals gave information implying that students were to some extent in inclusion settings. (A question to principals asking

whether an inclusion program for children who receive special education services was followed drew varied answers from “yes” to “no” to “yes and no”). The question to teachers asking for the numbers of students with IEPs indicated an average of 3.4 students with IEPs in the classes of teachers who responded. Some students were receiving services in an inclusion setting in the regular education setting (which is currently thought to be beneficial) as indicated by survey answers. From the data, it was calculated how much time children with IEPs received instruction and practice of handwriting in class. The data from kindergarten was weighted by few responses and by having half the children with IEPs in one class where the teacher gave five hours or more to handwriting instruction. More returned questionnaires from kindergarten teachers might have given more sound results. Overall, 75 % of children with IEPs were in classes where they received an hour or less of handwriting instruction a week. Perhaps the most significant figure was that 19% of students with IEPs were in classes in which the teacher gave no direct instruction in handwriting. Many of these were in second grade classrooms.

Many children with IEPs have difficulties with fine motor skills and sensory integration, as do many unidentified children, particularly in the lower grades of elementary school. Young children take time to develop skills and require time spent in direct instruction and practice of the wide range of integrated skills needed to write by hand.

Handwriting is a skill that has traditionally and primarily been the domain of the regular education classroom. One third grade teacher wrote on the questionnaire “Our O.T. teaches handwriting,” implying that the teacher did not, and two others mentioned

that the O.T. provided handwriting instruction. Occupational therapists in the public school system work as support staff for special education students and inclusion can benefit all students. However, it does seem that consistent and adequate instruction and practice of pre-writing and writing skills in the early grades provided in the regular class room setting would allow greater acquirement of skills by all students. To give the requisite time for skill acquirement, handwriting needs to remain an important part of regular education curriculum, obviously with support from special education staff when required.

Conclusions

First research question.

What is the current status of handwriting instruction in Santa Fe Public Schools?

Principals consider handwriting “Very Important” or “Important,” yet there is great variation among schools and teachers in what that means for students. The district does not have a handwriting policy and at least half of the elementary schools have not adopted a handwriting program to be used in the school. A wide variety of handwriting programs are used, and are not necessarily consistently aligned through grades in a school. Teachers equally vary in attitude to handwriting from feeling it is adequately covered in their classrooms, to feeling that the current educational agenda leaves little time for handwriting instruction.

Second research question.

What instructional methods, materials, and time allotment are used by teachers in Santa Fe Public Schools to teach handwriting?

There is a wide variance in the district over instruction as there is over policy. Methods vary considerably from school to school and teacher to teacher as stated above. Some schools provide materials and others do not. Time allotment reflects the inconsistency across the district: some teachers (17%) reported that they did not directly teach handwriting in the classroom, whereas some teachers reported that they directly taught for five hours or more a week.

Third research question.

What are the implications for students served by special education of the handwriting programs in Santa Fe schools?

The lack of handwriting instruction in classrooms directly impacts all students but is often of greater significance to students who have been identified with a disability that qualifies them for special education services. Nineteen percent of students with IEPs were in classes in which the teacher gave no direct instruction in handwriting and 75% were in classes with an hour or less of handwriting instruction. For students in inclusion settings to receive the requisite practice and instruction to develop serviceable handwriting (both clear and reasonably fast), a consistent and methodically taught handwriting program needs to be in place in the regular education classroom.

Recommendations / Implications for Further Study

Teachers involved in this study felt that time restraints driven by standardized tests in which handwriting is not included made it difficult to include sufficient handwriting instruction in the classroom. The SAT now demands a hand written essay response making handwriting a pertinent topic for those at the high school level preparing students for college entrance tests. It will be interesting to see whether and when these

demands are reflected at the elementary level, and whether handwriting will become a tested component of the elementary curriculum.

To include handwriting on the SAT may seem a step backwards in the contemporary age when keyboarding and computer skills are becoming more widespread and widely available; does this reflect a conservative trend or does it reflect an understanding of the value of fundamental non technological skills? Leonard Sax argues that experience with the real world is essential to cognitive development (Sax, 2007), and handwriting is an example of that contact with the real world, albeit one that for many has close connections with the classroom. Writing by hand is tactile, multi-sensory, and uses time honored methods, involving cognitive and motor skills, that connect students to their own psycho-motor integration and to an historical reality. Even if students are efficient at keyboarding, computers are not always available and do not provide the sensory and individual expression that can be found in writing by hand. As illustration, students enjoy and can excel at computer graphics, and yet, particularly at the elementary level, computer graphics cannot take the place of paint and clay and the tactile satisfaction and expression that comes from touching and interacting with the media. Writing by hand, particularly if students are encouraged to experiment with different tools, can provide a multi-sensory experience. One of the principals who participated in this study wrote of handwriting, “It is key to eye hand coordination, fine motor development, and human communication.” This states so well why handwriting has an integral, vital, and historical role in our cultural progress and in the current developmental processes of our students.

In conclusion, this study showed the need in schools and the district for alignment and policy in regards to handwriting. Results pointed to the variance both between elementary schools and within schools as to programs, methods, and time allotment assigned to handwriting. Handwriting develops over time in a spiral of learning, as with other subjects, and yet half the schools did not have a program consistently taught through the grades. At one school, children learned handwriting only in kindergarten, while in another school to fourth grade; in one first grade class children received no handwriting instruction, in another five hours of instruction a week. The lack of instruction particularly impacts children who have been identified for special education services, who require direct and consistent instruction for skill acquisition. Nineteen percent of students with IEPs were in a classroom where the teacher did not directly teach handwriting. Locally, handwriting was highlighted by the Superintendent of Santa Fe Public Schools, Dr. Leslie Carpenter, who emailed employees urging a focus on handwriting and cursive. Though touched on in the literature study, the fascinating comparison of the advantages of one handwriting program or style over another was outside the scope of this study, but it is a subject that deserves further research that might influence policy decisions. Handwriting is an important component of the elementary curriculum and consistent policies on handwriting would benefit administrators, teachers, parents, and, above all, students.

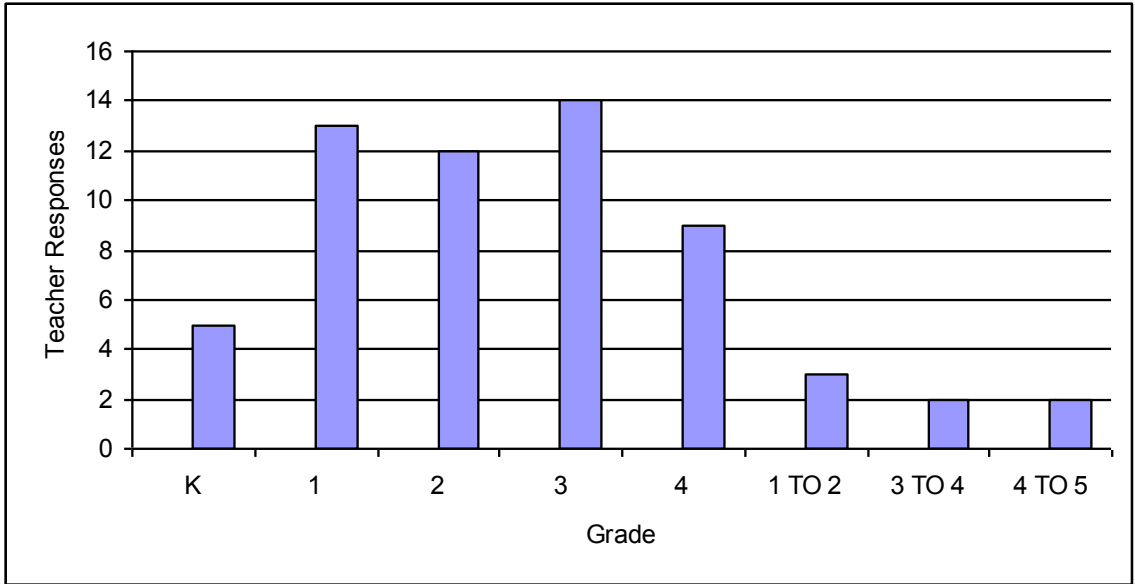


Figure 1. Number of teachers who responded to the survey by grade.

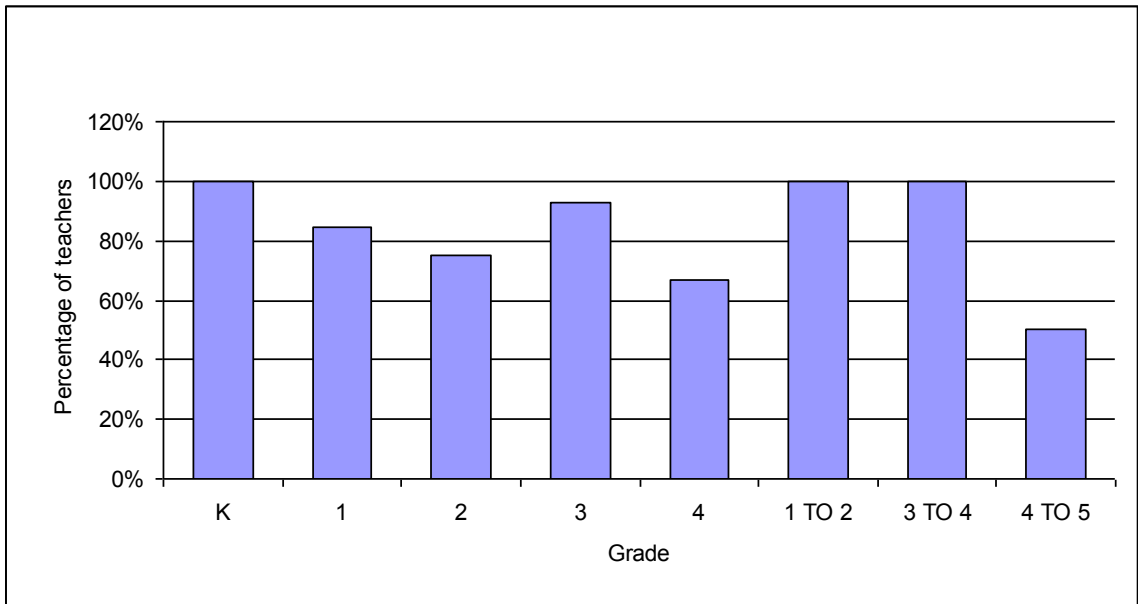


Figure 2. Percentage of teachers by grade who directly teach handwriting.

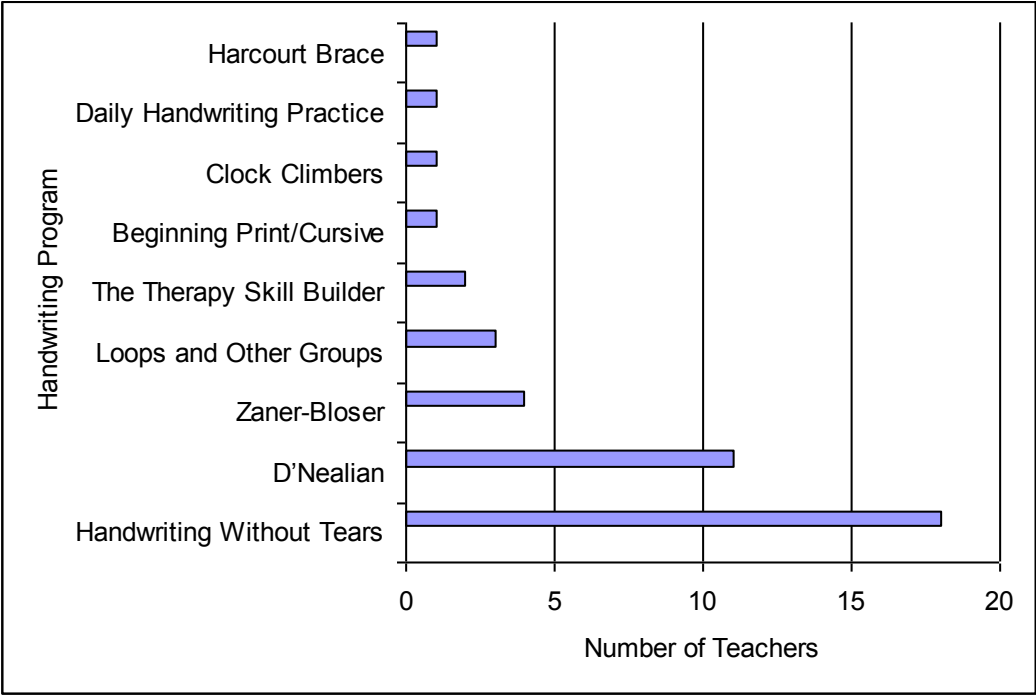


Figure 3. Handwriting programs used by teachers.

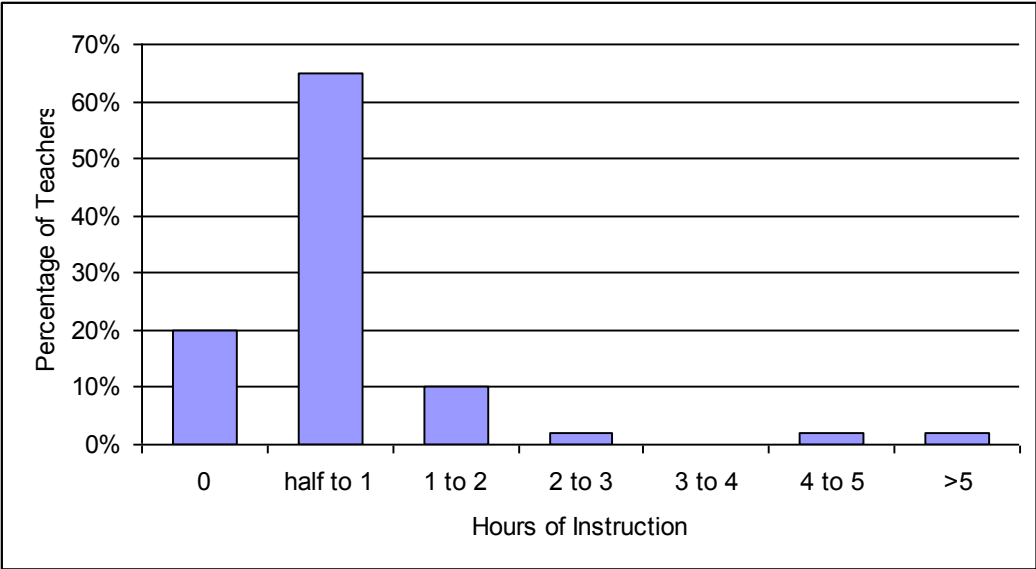


Figure 4. Amount of time teachers give direct instruction in handwriting in class per week.

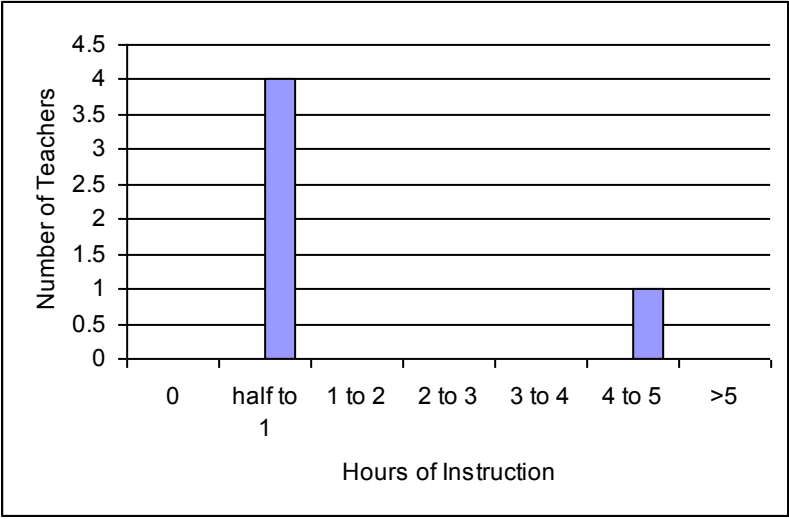


Figure 5. Amount of time teachers give direct instruction in handwriting in class per week (kindergarten).

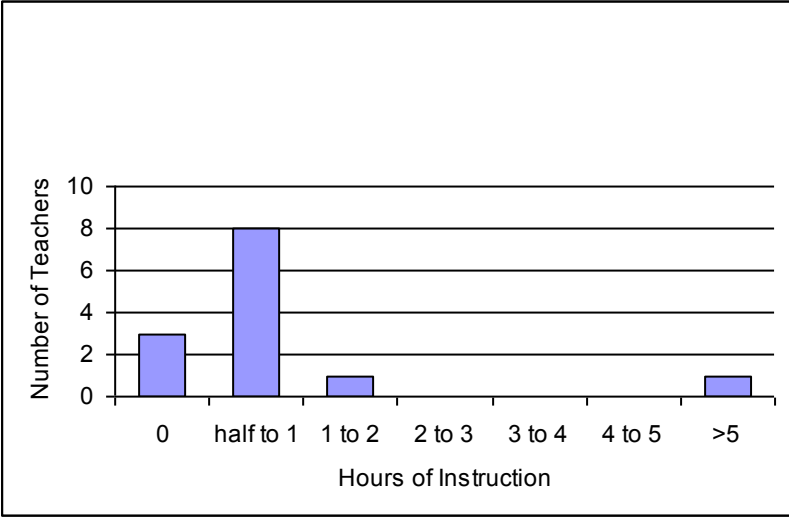


Figure 6. Amount of time teachers give direct instruction in handwriting in class per week (grade I).

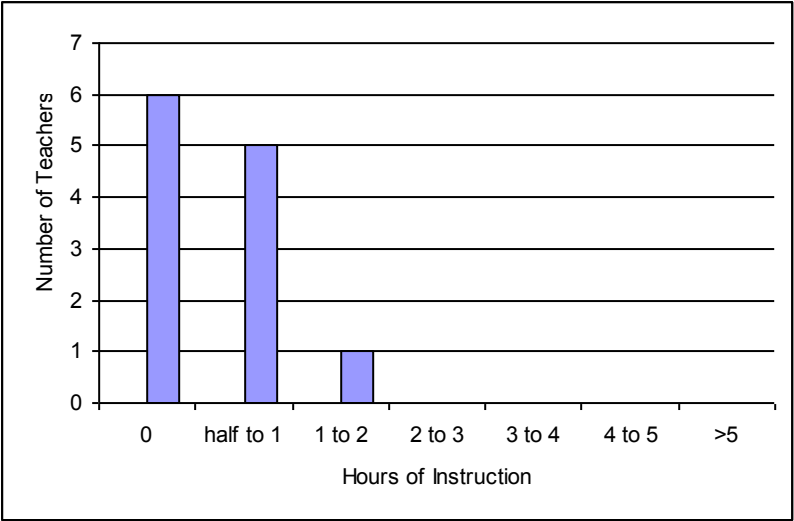


Figure 7. Amount of time teachers give direct instruction in handwriting in class per week (grade II).

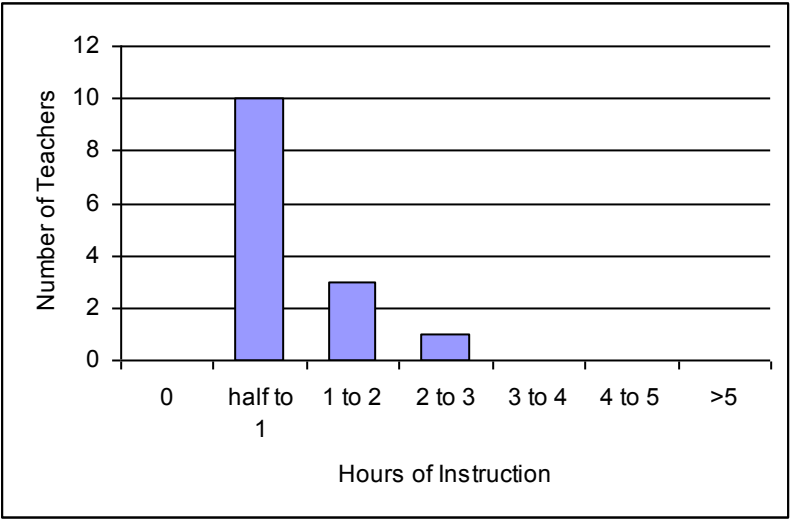


Figure 8. Amount of time teachers give direct instruction in handwriting in class per week (grade III).

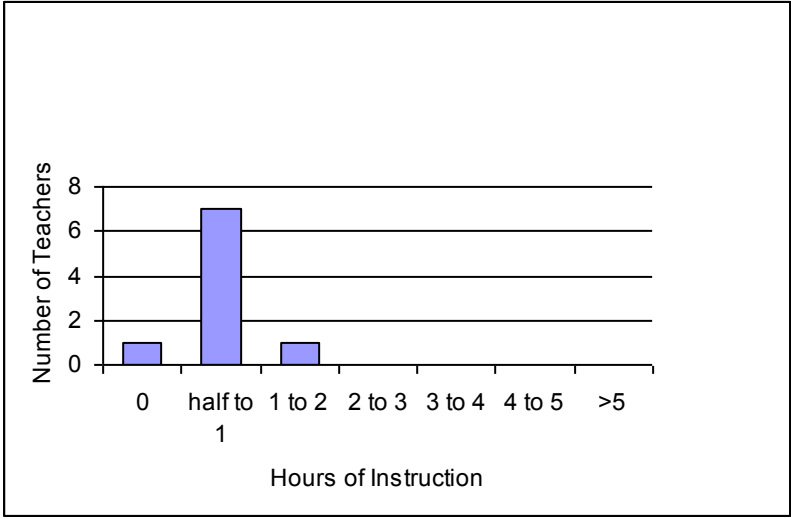


Figure 9. Amount of time teachers give direct instruction in handwriting in class per week (grade IV).

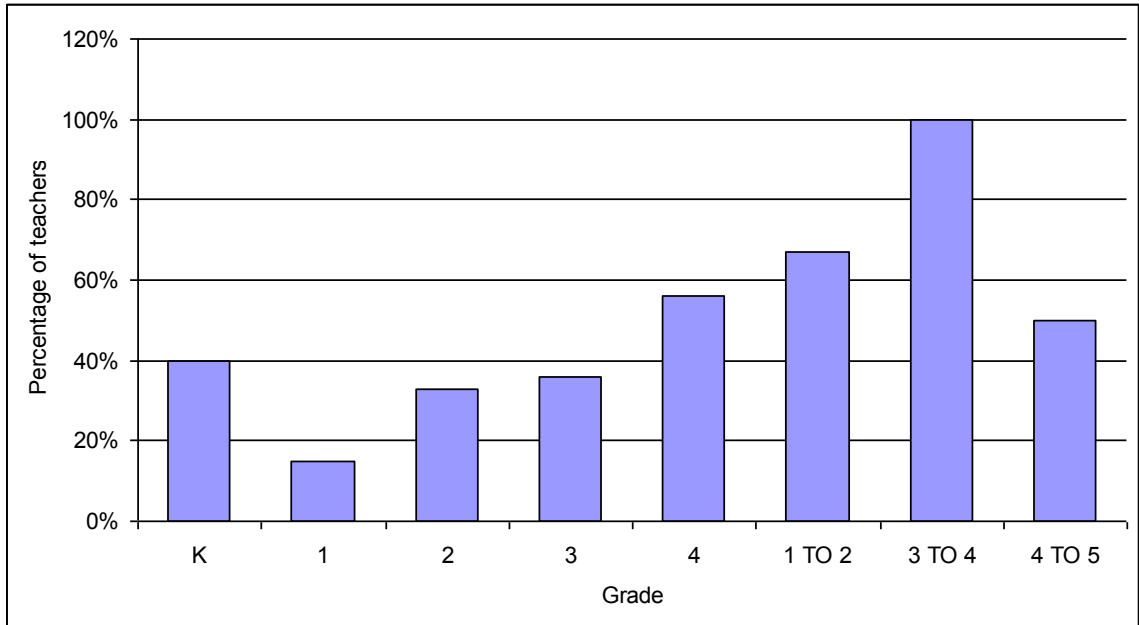


Figure 10. Percentage of teachers giving handwriting for homework by grade.

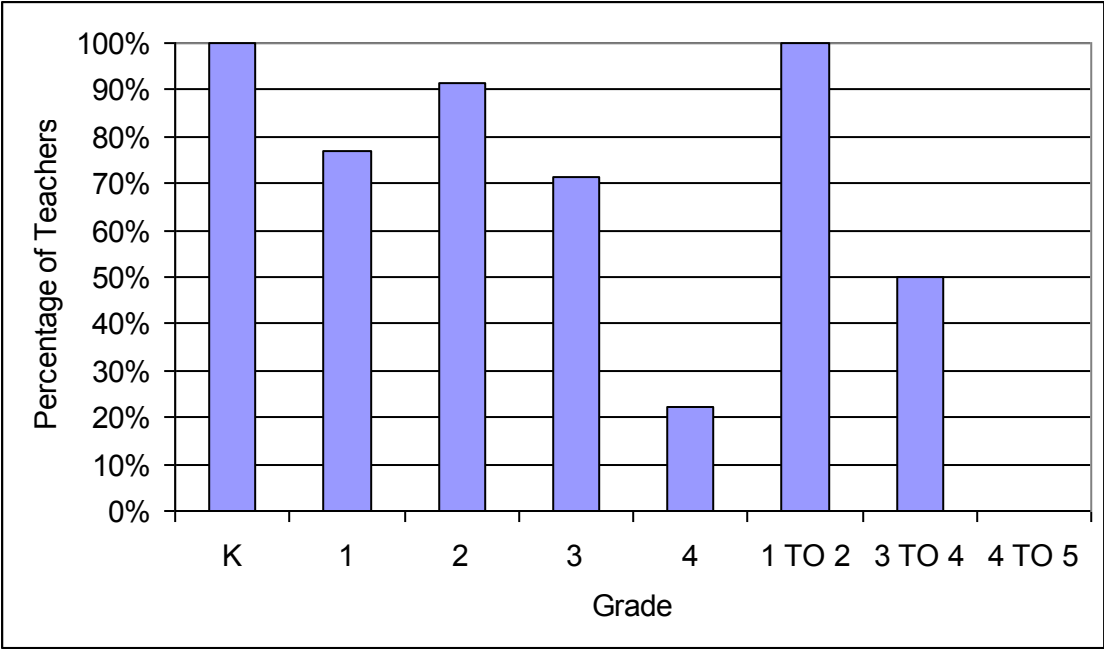


Figure 11. Percentage of teachers who encourage students to hold a pencil in a particular way.

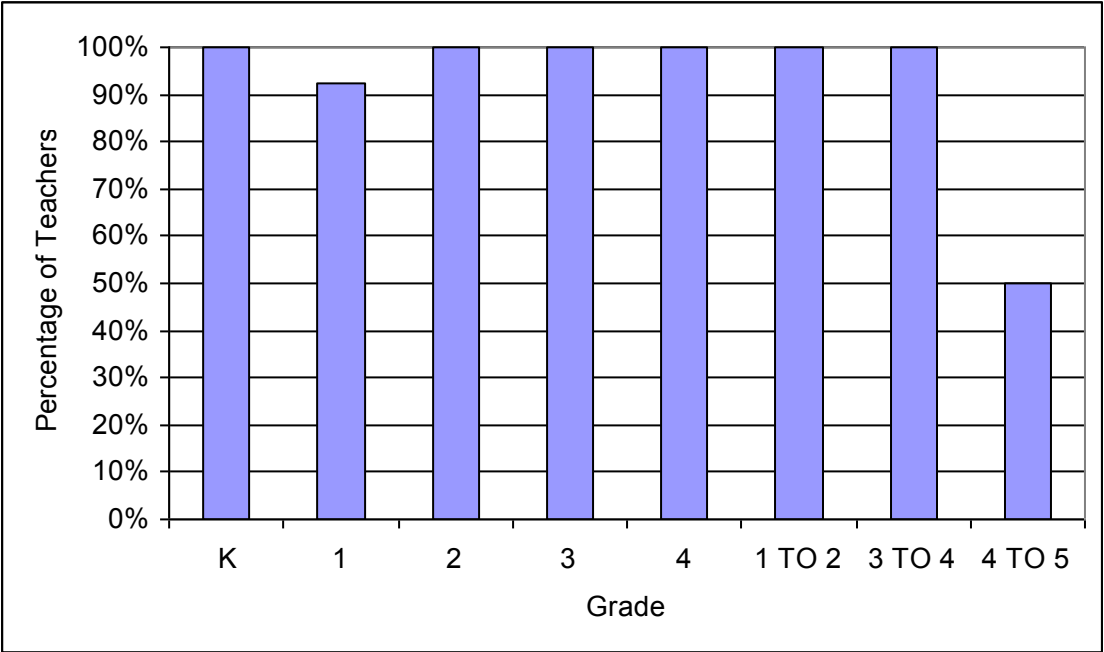


Figure 12. Percentage of teachers who direct students how to form individual letters.

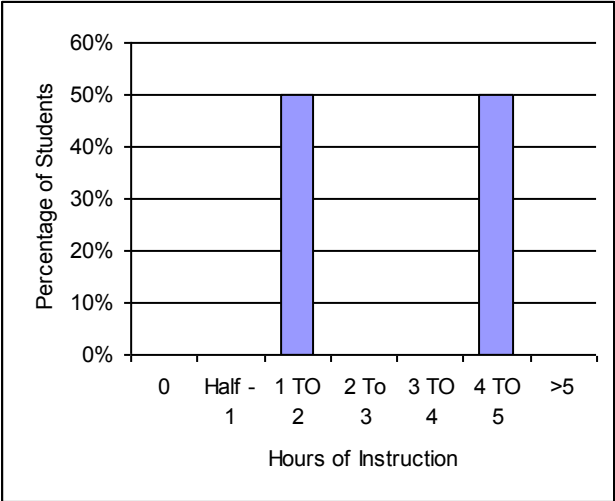


Figure 13. Amount of time students with IEPs receive direct instruction in class per week (kindergarten).

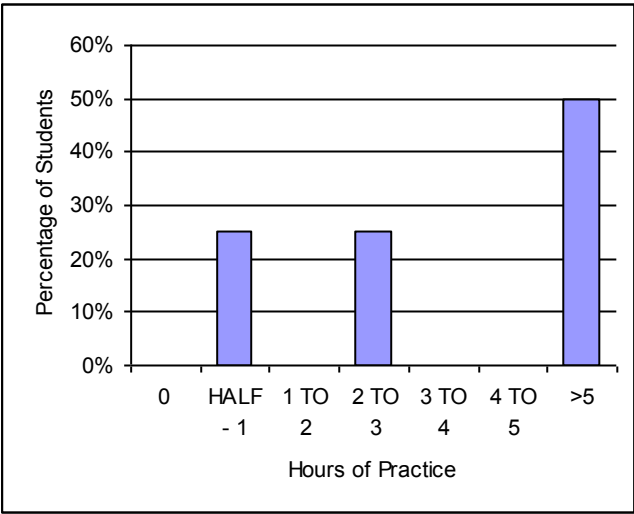


Figure 14. Amount of time students with IEP's practice handwriting in class per week (kindergarten).

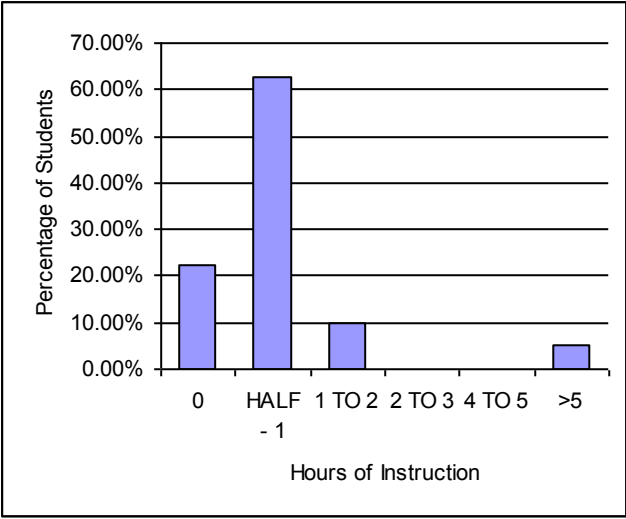


Figure 15. Amount of time students with IEPs receive direct instruction in handwriting in class per week (grade I).

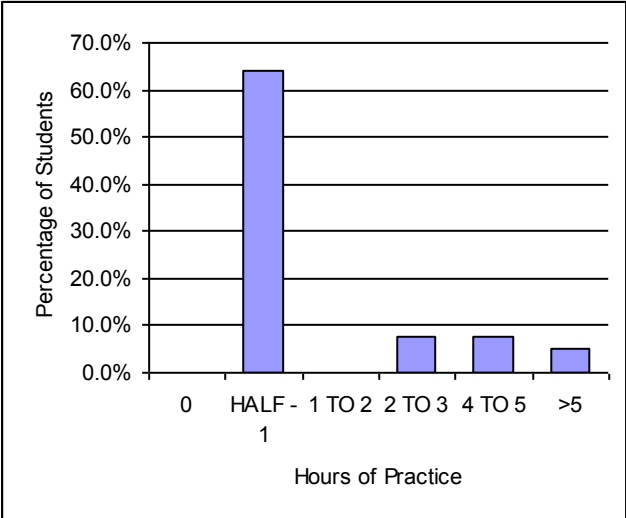


Figure 16. Amount of time students with IEPs practice handwriting in class per week (grade I).

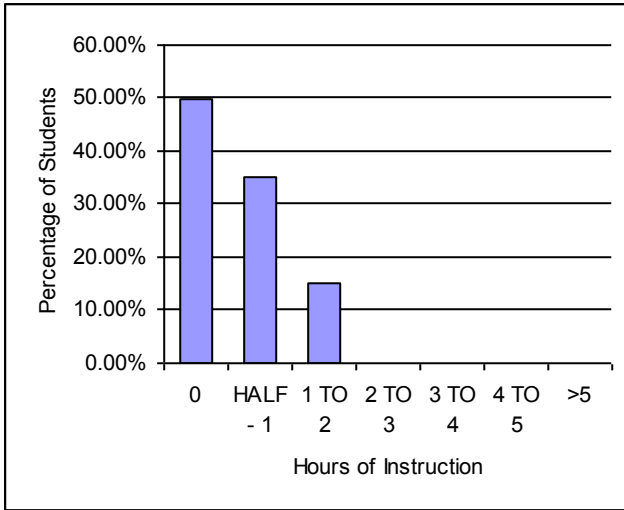


Figure 17. Amount of time students with IEPs receive direct instruction in class per week (grade II).

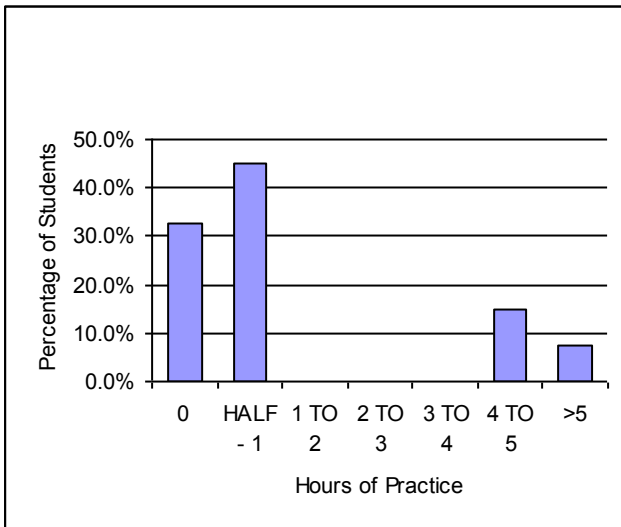


Figure 18. Amount of time students with IEP's practice handwriting in class per week (grade II).

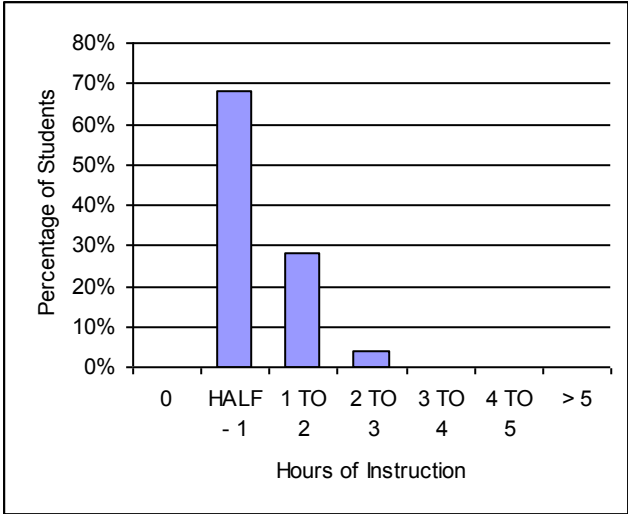


Figure 19. Amount of time students with IEPs receive direct instruction in class per week (grade III).

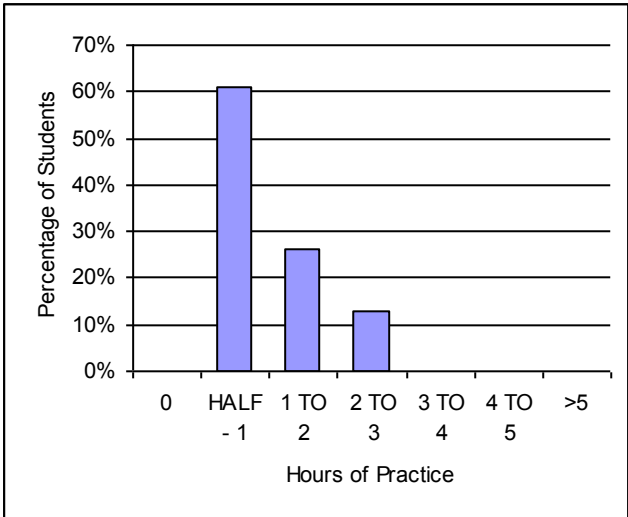


Figure 20. Amount of time students with IEP's practice handwriting in class per week (grade III).

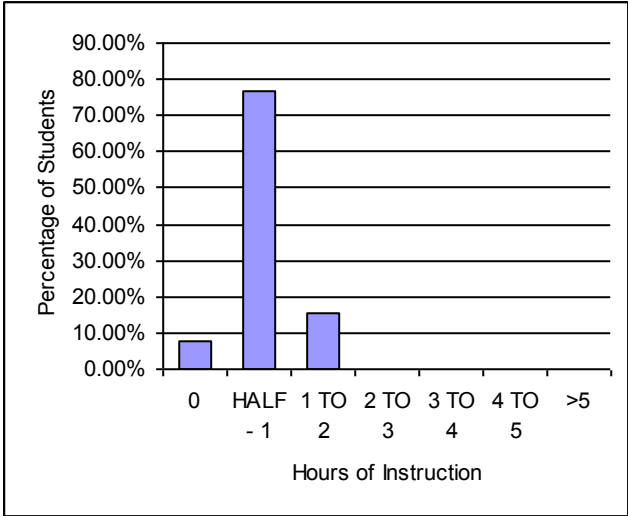


Figure 21. Amount of time students with IEPs receive direct instruction in class per week (grade IV).

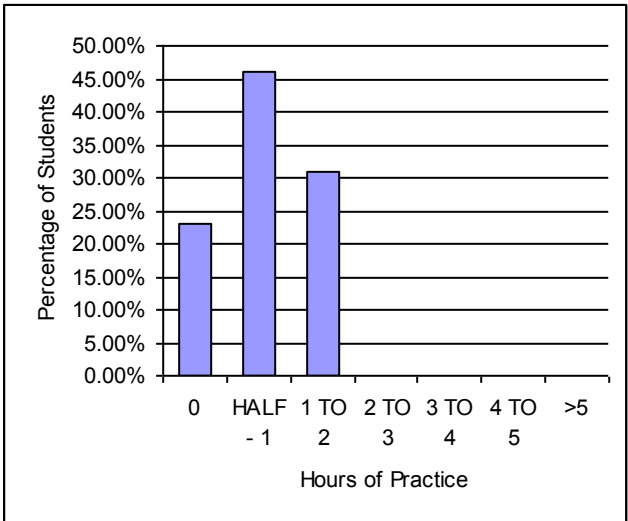


Figure 22. Amount of time students with IEP's practice handwriting in class per week (grade IV).

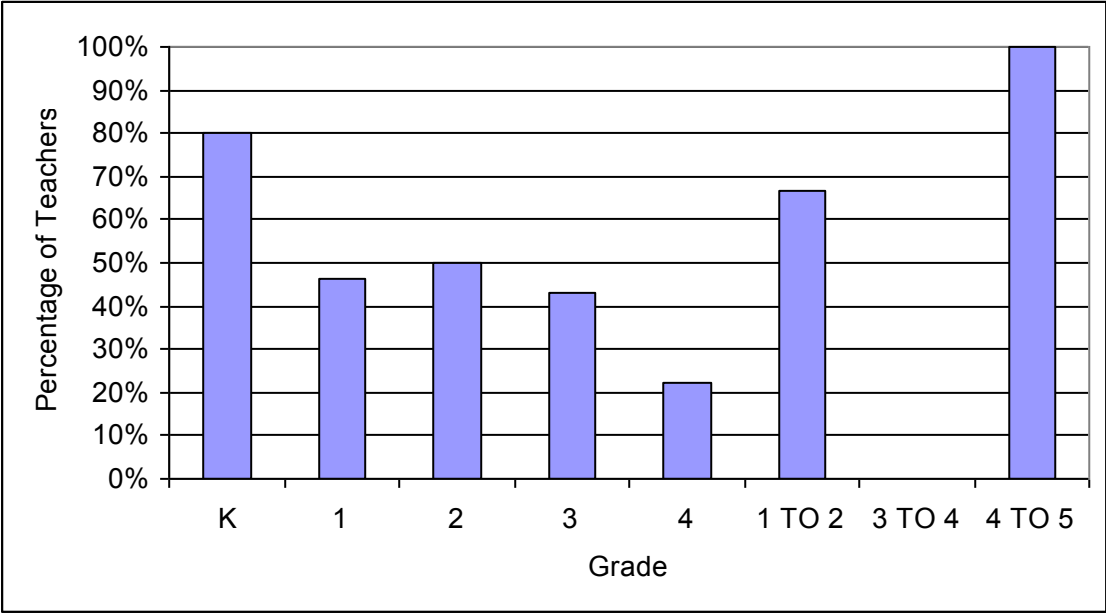


Figure 23. Percentage of teachers who would spend more time on handwriting instruction if more time were available.

List of References

- Ayres, A. J. (1979). *Sensory integration and the child*. Los Angeles, CA: Western Psychological Services.
- Barnett, S., Stainthorp, R., Henderson, S., & Scheib, B. (2006). *Handwriting policy and practice in english primary schools*. London: Institute of Education, University of London.
- Barrera, M. T., III, Rule, A. C., & Diemart, A. (2001). The effect of writing with computers versus handwriting on the writing achievement of first-graders. *Information Technology in Childhood Education Annual*, 215-228. Retrieved February 18, 2007, from Thomson Gale database.
- Ediger, M. (2002). Assessing handwriting achievement. *Reading Improvement*, 39.3, 103-111. Retrieved February 18, 2007, from Thomson Gale database.
- Gaur, A. (1987). *A history of writing*. London: The British Library.
- Graham, S. (1993). Are slanted manuscript alphabets superior to the traditional manuscript alphabet? *Childhood Education*, 70(2), 92-95. Retrieved February 18, 2007, from Thomson Gale database.
- Graham, S., Berninger, V., Weintraub, N., & Schafer, W. (1998). Development of handwriting speed and legibility in grades 1-9. *The Journal of Educational Research*, 92.1, 42-54. Retrieved February 18, 2007, from Thomson Gale database.
- Graham, S., Harris, K. R., Larsen, L. (2001). Prevention and intervention of writing difficulties for students with learning disabilities. *University of Maryland*

- Learning Disabilities Research & Practice*, 16.2, 74-84. Retrieved September 12, 2006, from <http://www.ldonline>
- Hannaford, C. (1995). *Smart Moves: Why learning is not all in your head*. New York: Midpoint Trade Books
- Hughes, C. (2003). Thou shalt write legibly. *Student BMJ*, 11, 324-326. Retrieved February 18, 2007, from Thomson Gale database.
- Institute of Education, University of London. (2006). Handwriting lessons important but ignored. finds survey. Retrieved February 11, 2007 from <http://ioewebobserver.ioe.ac.uk>
- Keller, M. (2001). Handwriting club: Using sensory integration strategies to improve handwriting. *Intervention in School and Clinic*, 37.1, 9-27. Retrieved February 18, 2007, from Thomson Gale database.
- Kos, R., & Maslowski, C. (2001). Second graders' perceptions of what is important in writing. *The Elementary School Journal*, 101.5, 567-589. Retrieved February 18, 2007, from Thomson Gale database.
- Learning to write without pencils. (2003, 07 September). *BBC News*. Retrieved December 3, 2006, from <http://newsvote.bbc.uk>
- Levine, M. D. (2002). *A mind at a time*. New York: Simon & Schuster.
- Levine, M. D. (2003). *The myth of laziness*. New York: Simon & Schuster.
- National Literacy Trust. (2007). Report on handwriting. Retrieved February 11, 2007 from <http://www.literacytrust.org.uk>

- O'Neill, T. (Feb 2005). Test scores do not predict happiness. *The Chronicle of Higher Education*, 51.25, pNA. Retrieved February 18, 2007, from Thomson Gale database.
- Rooney, K. (Ed.) (1999). *Encarta world English dictionary*. New York: St. Martin's Press.
- Sassoon, R. (1983). *The practical guide to children's handwriting*. London, U.K.: Thames and Hudson.
- Sassoon R. (1999). *Handwriting of the twentieth century*. London, U. K.: Routledge.
- Sax, L. (2007). *Boys adrift*. New York: Basic Books.
- Smith, M. (2006). (Almost) word for word: As voice recognition programs improve, students reap the benefits. *Technology & Learning*, 27.3, 40-41. Retrieved February 18, 2007, from Thomson Gale database.
- Thornton, P. T. (1996). *Handwriting in America*. New Haven, CT: Yale University Press.
- Wallace, R. R., & Schomer, J. H. (1994). Simplifying handwriting instruction for the 21st century. *Education*, 114.3, 413-418. Retrieved February 18, 2007, from Thomson Gale database.
- Zaner-Bloser. How learning to write the manuscript alphabet supports reading development. Retrieved February, 11, 2007 from <http://www.zaner-bloser.com>

Appendix A
Handwriting in Santa Fe Public Schools
Questionnaire to Principals

1. Has your school adopted a handwriting program to be used in the school?

Yes _____ No _____

If 'yes', in which grades is it used?

Grade _____ through _____

2. If the school has not adopted a school wide program of handwriting instruction, is the handwriting style taught in _____ classrooms chosen by individual teachers?

Yes _____ No _____

If 'yes', in which grades is specific handwriting instruction taught?

Grade _____ through _____

3. How important do you consider the practice of handwriting is as a component of cognitive development?
Please comment if you wish.

Very important _____ Important _____ Not important _____

4. Is an inclusion program followed in your school for children who receive special education services?
Please comment if you feel explanation is necessary.

Yes _____ No _____

5. Are you planning any changes in the handwriting program at the school? Please explain if you wish.

Yes _____ No _____

Appendix B
Handwriting in Santa Fe Public Schools
Questionnaire to Teachers

1. What grade do you teach? _____

2. Do you directly teach handwriting in your classroom?

Yes _____ No _____

3. Do you have a handwriting program that you use?

Yes _____ No _____

If 'yes', what is the handwriting program or style of handwriting that you teach?

4. How much class time in a week do you provide direct instruction in handwriting?

no time _____ half - 1 hr _____ 1-2 hr _____ 2-3 hr _____ 3-4 hr _____ 4-5 hr _____ 5 hr or more _____

5. How much class time in a week do students have to practice handwriting?

no time _____ half - 1 hr _____ 1-2 hr _____ 2-3 hr _____ 3-4 hr _____ 4-5 hr _____ 5 hr or more _____

6. Do the students have handwriting practice for homework?

Yes _____ No _____

7. Do you encourage students to hold the pencil in any particular way?

Yes _____ No _____

Do you direct children in how to form individual letters?

Yes _____ No _____

8. How many of your students have an IEP? _____

9. If there were more instructional time in the day, would you spend more time on handwriting instruction?
Please comment if you wish.

Yes _____ No _____

Appendix C

Sarah Lescht ~ Chaparral Elementary School ~ Sarahlescht@aol.com ~ 505 920 3000

Dear Principal,

I am doing a study on the teaching of handwriting in elementary schools in Santa Fe and would very much appreciate your participation. I am a teacher at Chaparral Elementary School and am working towards a Master's degree at NMHU.

The study is a survey in the form of separate written questionnaires to principals and teachers in Santa Fe Public Schools which ask questions about policy and practice in relation to handwriting instruction. I am very much hoping that as many teachers and principals as possible can help by providing input and contributing to the study.

Participation in the study will be entirely voluntary.

- The questionnaires should take no more than fifteen minutes at the most to complete.
- Each questionnaire is self-report and can be completed at the participant's chosen time and mailed back to the researcher in the district mail at no cost to the participant.
- There should be minimal discomfort and risks in answering the survey.
- This field project will provide information on the teaching of handwriting in elementary schools in Santa Fe Public Schools.

If you have any enquiries regarding the procedures or the study in general please contact me.

- My email is sarahlescht@aol.com
- My telephone # is 505 920 3000 or 505 988 7312.
- Adviser to the project is Dr. Linda Lippitt who can be reached at 505 428 1445.
- Approval has been given by the Superintendent of Santa Fe Public Schools, Dr. Leslie Carpenter.

Please know that participation can at any time be withdrawn and discontinued without any prejudice to the participant. There are no appropriate alternative procedures. Return of the survey will be taken as permission to participate in the study.

Data collected from the survey will be confidential and at no time will the participants' names or schools be used in relation to the data or the study or in the sharing of information.

Please be so kind as to complete the attached questionnaire and return it through the district mail to me at Chaparral Elementary School.

I am enclosing a copy of the questionnaire for teachers and hope it meets with your approval. I would very much appreciate you encouraging your teachers to complete their questionnaires and get them back to me through the district mail. Thank you so much for your time and attention and for your help with this project.

Sincerely

Sarah Lescht

Appendix D

Sarah Lescht ~ Chaparral Elementary School ~ Sarahlescht@aol.com ~ 505 920 3000

Dear Teacher,

I am doing a study on the teaching of handwriting in elementary schools in Santa Fe and would very much appreciate your participation. I am a teacher at Chaparral Elementary School and am working towards a Master's degree at NMHU.

The study is a survey in the form of separate written questionnaires to principals and teachers in Santa Fe Public Schools which ask questions about policy and practice in relation to handwriting instruction. I am very much hoping that as many teachers and principals as possible can help by providing input and contributing to the study.

Participation in the study will be entirely voluntary.

- The questionnaires should take no more than fifteen minutes at the very most to complete.
- Each questionnaire is self-report and can be completed at the participant's chosen time and mailed back to the researcher in the district mail at no cost to the participant.
- There should be minimal discomfort and risks in answering the survey.
- This field project will provide information on the teaching of handwriting in elementary schools in Santa Fe Public Schools.
- There are no appropriate alternative procedures.

If you have any enquiries regarding the procedures or the study in general please contact me.

- My email is sarahlescht@aol.com
- My telephone # is 505 920 3000 or 505 988 7312.
- Adviser to the project is Dr. Linda Lippitt who can be reached at 505 428 1445.
- Approval has been given by the Superintendent of Santa Fe Public Schools, Dr. Leslie Carpenter.

Please know that participation can at any time be withdrawn and discontinued without any prejudice to the participant. Return of the survey will be taken as permission to participate in the study.

Data collected from the survey will be confidential and at no time will the participants' names or schools be used in relation to the data or the study or in the sharing of information.

Please be so kind as to complete the attached questionnaire and return it through the district mail to me at Chaparral Elementary School.

Thank you so much for your time and attention and for your help with this project.

Sincerely,

Sarah Lescht