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## Examining the Current Perceptions of K-3 Elementary School Teachers, and their Students, in Regard to Handwriting Instruction in the Modern Day Classroom

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EXAMINING THE CURRENT PERCEPTIONS OF K-3 ELEMENTARY  
SCHOOL TEACHERS, AND THEIR STUDENTS, IN REGARD TO  
HANDWRITING INSTRUCTION IN THE MODERN DAY CLASSROOM

by

KIMBERLY L. KOLB

A thesis submitted in partial fulfillment of the requirements  
for the Honors in the Major Program in Elementary Education  
in the College of Education and Human Performance  
and in the Burnett Honors College  
at the University of Central Florida  
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Thesis Chair: Dr. Sherron Killingsworth Roberts

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## **ABSTRACT**

The intent of this thesis is to explore the current views and opinions that elementary school teachers, particularly Kindergarten through third grade teachers, have on the topic of handwriting instruction in their classrooms. Apart from the teachers, the views and opinions of selected Kindergarten through third grade students are also taken into consideration. Due to the advancement of technology and its prevalence in modern day classrooms, many consider handwriting, particularly cursive, a dying art, with keyboarding taking its place. However, research has proven that handwriting provides students with developmental benefits and helps to refine certain motor skills that keyboarding does not.

To better understand the views of both teachers and students alike, the research design consists of teacher surveys and student focus groups to provide a better scope of understanding as to how teachers and students view this change in writing. The data is presented in the form of graphs and charts, which are then examined in detail.

## DEDICATION

To my wonderful family, for teaching me the value of education and hard work, and for always pushing me to do my best, no matter the task at hand. Thank you from the bottom of my heart for your unconditional love and support. I finally finished!

To all my students, past, present, and future; your opinion matters and I sincerely hope that if you only take away one aspect from our time together, it is that you can do anything you put your mind to.

*“You have brains in your head. You have feet in your shoes. You can steer yourself, any direction you choose.” – Dr. Seuss*

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A special thank you to Jessica Kunkel, my best friend who has been there every step of the way throughout my college experience. I am so thankful that we went through this process together!

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## **CHAPTER ONE: INTRODUCTION**

When I reflect upon my time as a high school student taking the SATs, my mind automatically focuses on one incident in particular. Remarkably, this memory has nothing to do with study preparation or the exam itself, but an event that occurred right before the exam began. I was patiently sitting in the exam room with numerous other eager students listening to our proctor read through the customary instructions and list of rules while I was nonchalantly penciling in necessary information and bubbling required material; the usual prepping of an SAT answer sheet. One shaded section towards the end of the answer sheet had a three line statement about identity and confidentiality. Our proctor told us to carefully read the statement and copy it on the lines provided – in cursive handwriting. For me, this was not a problem. I was already well into copying the lines when a fellow examinee raised his hand and frantically expressed to the proctor that he could not copy the lines, as he did not know cursive handwriting. The proctor simply told him and anyone else struggling to try their very best.

I remember being completely taken back by this occurrence. How could someone preparing for college not know how to write using cursive handwriting? Was it not taught to them in elementary school? I learned how to write in cursive when I was in third grade, further strengthening my skills throughout fourth and fifth grade. Cursive handwriting was such an ordinary part of my elementary school days that I could not wrap my head around the fact that there were students in other schools who had never learned to write using cursive. Even when I was in eighth grade, I can recall my social studies teacher requiring every assignment and essay to be written in cursive handwriting or she would not accept them, as she felt cursive to be a

significant skill in the professional world that everyone should be familiar and comfortable with using; for her and her class, I am tremendously appreciative.

### **Relevance of Study**

In today's modern era, it seems as if more and more people are becoming completely enthralled by the prospect of owning the latest and greatest gadgets to hit the market. It can be argued that technology makes life much easier for many, as it has the potential to completely erase manual labor from the forefront of daily life. Unlike previous generations, the current generation of children is growing up side by side with this changing world. Digital natives, as they are referred to, are "individuals who have spent their entire lives surrounded by and using computers, videogames, digital music players, video cams, cell phones, and all the other toys and tools of the digital age" (Prensky, 2001, p. 1). Prensky goes on further to say that the rest of the individuals, the non-digital natives who have become fascinated by and adopted many or most aspects of the new technology, are known as 'digital immigrants' (2001).

Bearing this in mind it should come as no surprise that technology is not only affecting the personal lives of individuals, but their academic lives as well. Technology has reached the school systems and will continue to transform the methods in which children are taught. Today, it is not uncommon to see a switch from "traditional oral communication and written texts to screen-based media, including TV, computers, game consoles, and touch screens" (McPake, Plowman, & Stephen, 2013, p. 423) in the classroom. Educators are being challenged by the need to continually respond to developments in technology in a rapidly changing environment and to new ways of learning and communicating (Hyde, Edwards, & Jones, 2014).

### *Common Core State Standards*

Although innovative, embracing new technologies in the classroom can signify the reduction of more traditional education approaches. One of the most prominent cases of ‘out with the old, in with the new’ is that of handwriting instruction. In 2010, the Common Core State Standards (CCSS) were formally adopted by 45 states and the District of Columbia (Troia & Olinghouse, 2013). Implemented with the purpose of better preparing students for the future, the Common Core State Standards “will adequately prepare students for success in a college or career pathway” (Uecker, Kelly, & Napierala, 2014, p. 49).

Under the statement of advancing education, it came as quite a surprise when handwriting standards were all but missing from the CCSS. In fact, only two standards related directly to handwriting instruction can be found in the CCSS; one item in kindergarten and one item in first grade. The standards are “print many upper- and lowercase letters” and “print all upper- and lowercase letters”, respectively (Jones & Hall, 2013, p. 28). When examining all CCSS mentioning writing, it is evident that an emphasis is placed on what children need to write, not how to write.

The CCSS provided flexibility for states to add material to the Standards as approved by their governing boards. Thus handwriting standards have become a hot topic for state boards of education. To date, several states, including Alabama, California, Georgia, Kansas, Idaho, Indiana, Massachusetts, North Carolina, and Utah, have included additional handwriting standards as part of their State Core Standards (Jones & Hall, 2013, p. 29).

Knowing this, the important question of handwriting instruction's role and relevancy in children's education and development during a digital age is brought to light. Therefore, this study seeks to examine the current perceptions of K-3 elementary school teachers, and their students, in regard to handwriting instruction in the modern classroom, cursive in particular, via teacher surveys and focus groups of students.

### **Research Questions**

The two primary questions answered through this research project were:

1. What are the current K-3 teacher perceptions in regard to handwriting instruction in the modern elementary school classroom?
2. What are the current perceptions of K-3 students enrolled in the teacher participants' classrooms of handwriting versus keyboarding or other technology innovations?

## **CHAPTER TWO: LITERATURE REVIEW**

This section of the thesis focuses on the background knowledge related to handwriting. More specifically, it answers what handwriting is comprised of, the different styles that can be used, the benefits it yields for students, both academically and personally, and general concerns about its significance in the 21<sup>st</sup> century. Each of these topics is broken down into smaller sections for better organization and presentation. The goal of this literature review is to help determine the contemporary views and opinions of handwriting and to gain a more improved understanding as to why handwriting should or should not be taught and emphasized in elementary classrooms in the current digital age.

### **Overview of Handwriting**

“Handwriting refers to any cursive writing or printing by hand with pen, pencil, or other such implement” (Zubrzycki, 2001, p. 2). According to Feder and Majnemer, the development of handwriting begins with early scribbling, which becomes more intentional with time (2007). Feder and Majnemer go on further to say that letter shapes can often be seen in children’s drawings, which can be viewed as an apprenticeship for writing. As a child begins to grow and mature, so does his or her handwriting ability and skill.

A child learns to print letters by first imitating geometric shapes beginning with vertical strokes (age 2y), followed by horizontal strokes (age 2y 6mo) and circles (age 3y).

Imitation and then copying of a cross typically occurs at 4 years; copying a square occurs at 5, and a triangle at 5 years 6 months (Feder & Majnemer, 2007, p. 313).

Once children have mastered basic shapes, letter formations become clearer and more legible, as children have begun to develop the skills necessary to write letter formations. When children reach school age, the real importance of handwriting becomes evident. Starting in kindergarten, Children are expected to gain skill gradually in handwriting legibility as formal instruction is introduced in the kindergarten and first-grade curriculum (Vreeland, 1999). Moreover, according to Thurber, handwriting legibility “is established through achieving mastery of consistent letter formation by using proper and consistent size, shape, spacing, and slanting of all 26 lower case letters and capitals as they are learned” (Thurber, 1995, p. 6). Handwriting legibility can be broken down into two major contributors: speed and fluency. The following sub-heading of this literature review will take a closer look at these two elements.

### *Speed and Fluency*

The importance of speed and fluency in handwriting when related to handwriting legibility extends well beyond the thought that childrens’ handwriting simply needs to be easier to read. “There is a sound theoretical basis and mounting empirical evidence to suggest that the relationship between handwriting and quality of written text is strong and surprisingly robust” (Christensen, 2009, p. 162). Needless to say, research has shown that students who exemplify better handwriting legibility produce a higher quality of written work.

Christensen (2009) indicated in years past the focus of handwriting in the curriculum was on legibility, neatness, and strict motor control. In more recent years, however, there has been a switch of focus. In 2007, Schlagal stated that time spent on spelling, grammar, and handwriting has been replaced by an emphasis on personal communications (as cited by Christensen, 2009, p.



162), while handwriting is moved to the back burner. The irony found here is that when handwriting is addressed in present day documents and articles, its importance in a child's writing development is habitually discussed; this leaves readers and educators to wonder why handwriting is not being emphasized more in the first place. Therefore, it can be presumed that "current curriculum does not reflect recent research on the importance of handwriting or on the need for speed and fluency which underpins writers' ability to produce high quality written text" (Christensen, 2009, p. 163).

Graham and Weintraub (1996) argued that speed is an important aspect of handwriting. Speed in handwriting refers to the rate of letter production. This is important not because students will merely write faster, but because they will be able to get their thoughts onto paper more promptly; they do not have to think about how to form letters. "If handwriting is very slow, then students may not be able to record their thoughts in a way that keeps pace with their generation of ideas. Thus, they may forget their ideas before they get them on paper" (Christensen, 2009, p. 165). When this ensues, students may become so lost in their thoughts that they may become unsure of what they originally intended to write, resulting in a written piece of work that does not accurately reflect their fullest knowledge of the content or material. When students are able to produce handwriting that is competent, the quality of written work drastically improves.

In a 1999 research study conducted by Jones and Christensen, 38 first grade students were tested on the speed and accuracy of their handwriting and value of their written expression. First, students were asked to orally state the letters of the alphabet to ensure knowledge. Next, they were told to write all the letters lower-case, followed by upper-case; students who had

difficulties or scored low were selected for intervention. The intervention lasted eight weeks in which the students received supplemental handwriting instruction for approximately ten extra minutes every day. The results of the study found that “the lack of automaticity in writing resulted in students focusing on the orthographic-motor act of putting letters on the page rather than ideation, monitoring, and other cognitive aspects of text generation” (Jones & Christensen, 1999, p. 48).

Handwriting automaticity, or fluency, is one of the most vital skills a child can possess in context with writing proficiency; “[i]f it can have such an impact on writers’ abilities to generate complex text, it appears critical that children develop smooth and efficient handwriting” (Medwell & Wray, 2007, p. 12). In the year 2000, Graham, Harris, and Fink conducted a research study to determine if handwriting is casually linked with learning to write. To do this, the researchers provided supplemental handwriting instruction to first grade students lacking sufficient handwriting skills who were also experiencing writing difficulties. The immediate, as well as long-term, effects were assessed. The findings from the study suggest that there is indeed a link between handwriting and learning to write.

Students who received supplementary handwriting instruction outperformed their counterparts in the contact control condition (i.e., phonological awareness instruction) on measures assessing not only handwriting but writing skills as well. Immediately following instruction, students in the handwriting condition were more accurate in naming and writing the letters of the alphabet, and they were also able to produce the letters of the alphabet and copy connected text more fluently. With the exception of

copying text more fluently, these handwriting gains were maintained 6 months later (Graham, Harris, & Fink, 2000, p. 630).

This research study, along with countless others, articulately shows the sheer impact that handwriting can have on students' writing abilities. Students who receive adequate handwriting instruction will in turn improve their overall speed and fluency, thus resulting in a higher quality production of written work. Current educators who may not place much weight on handwriting instruction in the classroom should be made aware of the sheer benefits it can provide for students, especially those who struggle with writing composition.

### **Styles of Handwriting**

The next question that comes to mind is the style of handwriting that should be taught to students in the classroom. A few years back the most contested issue in handwriting instruction centered on the type of script children should learn to write, according to Graham and Weintraub (1998). While times have changed with the addition of technology in the school systems, three major styles of handwriting still exist: manuscript, D'Nealian, and cursive. Each has its own unique set of advantages and disadvantages when used by students learning to write, discussed more in-depth in the next section of this literature review.

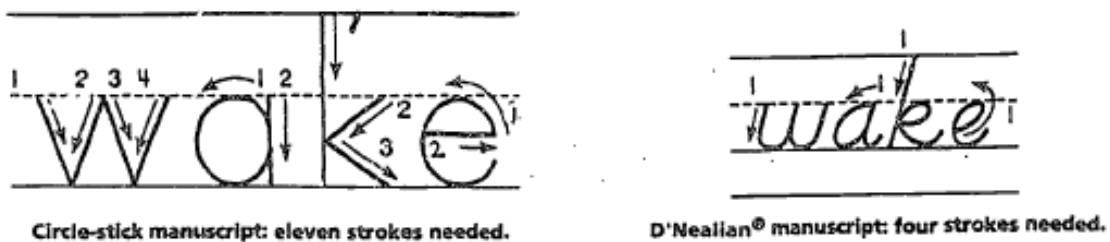
#### *Manuscript and D'Nealian*

Manuscript, also known as print, can be considered the most recognizable style of handwriting by children because it is the style that is constantly being seen in the real world; billboards, television guides, toy packages, cereal boxes, books, T-shirt graphics, etc., all feature

print writing. When children learn how to write, print manuscript is the style that is taught to them in kindergarten. In the past, this print manuscript would be used by children until they reached the end of second grade or third grade, where a switch to learning cursive was employed. One of the most prominent disadvantages with print manuscript, however, is “the matching together of arrow straight lines and circles requires continued pen/pencil lifts hindering rhythm or flow in the writing process” (Thurber, 1995, p. 3). With this style, Thurber goes on further to say that there is little carry over value into cursive writing as the two scripts are completely different in make-up (1995). See Appendix A for an alphabet written using manuscript.

To remedy this, a continuous-stroke style of handwriting, known as D’Nealian, was imparted. D’Nealian handwriting features a smooth and flowing style that requires little pencil lift and eliminates a staccato rhythm. “This technique helps develop a rhythm for writing which is so necessary for later cursive penmanship. The process is built on a solid continuum from the start to the finished cursive product” (Thurber, 1995, p. 3). To see the benefit in handwriting fluency that D’Nealian has over print manuscript, the following word ‘wake’ is expressed in both styles with the number of pencil strokes indicated; image from Thurber, 1995.

Figure 1: Handwriting Comparison



The print manuscript (left) shows that eleven strokes are needed to write the word ‘wake’ while the D’Nealian style (right) shows only four strokes are needed to write the same word. Using D’Nealian, students will be able to efficiently transition into cursive handwriting as the looping movement made by the wrist and hand is essentially the same. D’Nealian handwriting is not the norm, however, as the vast majority of students learn print manuscript.

When children learn to write for the first time, a great deal of time and effort is spent on making sure they first master lower case letters; if lower case letters are mastered, children can write faster. While developing the skills necessary to fulfill such a task, capital-letters are introduced afterward lower case letters. There are ten upper-case letters in the English alphabet that are simply enlargements of their lower-case counterparts: c, j, o, p, s, u, v, w, x, and z. Due to this, children are able to pick up these capital letters quickly while the rest of the letters are learned (Thurber, 1995). The print manuscript letters differ from the D’Nealian letters. Although the difference is slight, the impact it holds on an approximate group of children learning to write can be profound in some cases.

A main goal of teaching handwriting is to teach students to write with legibility. Unlike print manuscript which is essentially a combination of circles and sticks put together, D’Nealian showcases the use of ‘up’ ending strokes with letters. The following letters end with an upward stroke: a, d, e, h, i, k, l, m, n, t, u, and x; below-line letters: g, j, q, and y. “These serifs help establish proper spacing which is one of the main ingredients necessary for legible handwriting” (Thurber, 1995, p. 6). While print manuscript is more easily recognizable to students, giving them a sense of familiarity, D’Nealian possesses more benefits in terms of handwriting fluency

and transition into cursive handwriting. See Appendix B for an alphabet written using D'Nealian.

### *Cursive*

“Proponents of cursive cite mutual legibility, tradition, and speed as benefits of that writing style” (Zubrzycki, 2012, p. 3). Cursive handwriting is the style most likely to be taught to students in the latter part of second grade or while they are in the third grade. Cursive handwriting features the similar slant and curves found with D'Nealian handwriting, but instead of individual letters ending with an upward action, all letters are connected with a swift looping movement that is very natural for a child to replicate.

This style of handwriting has been around for generations and has an air of prestige to it. Supon states that “previous generations used cursive writing as an indicator of an educated individual. It was a form of communication” (2009, p. 357). Not only this, but cursive handwriting can be found on precious documents and artifacts all through out history. Even more so, cursive still holds its merits today; diplomas, formal invitations, and significant announcements, among many other forms, will usually be written in cursive script, or feature a part that is written in cursive script. According to one veteran elementary school teacher, elementary school students view writing in cursive as “a rite of passage – just as a teenager learning to drive” (Cravens, 2004, p. 4). For some children, cursive handwriting can often be associated with sophistication and pride. If students are confident in their handwriting ability,

they will be more adept with their writing composition. See Appendix C for an alphabet written in cursive.

Writing in cursive holds many benefits for students, especially those who struggle with handwriting coordination difficulties, also known as dysgraphia. In 2011, Nicolson and Fawcett defined dysgraphia as “a disorder of written expression that results in writing skills below those expected given a person's age, intelligence, and education” (as cited by Kushki, Schwellnus, Ilyas, & Chau, 2011, p. 1059). The overall composure of cursive handwriting can help aid students with dysgraphia, as well as students who simply need extra help with handwriting. Montgomery (2012, p. 134) noted that some of the positive traits cursive handwriting possesses are:

- aids left to right movement through words across the page
- stops reversals and inversions of letters
- induces greater fluency in writing so enables greater speed without loss of legibility
- more can be written in the time
- space between letters and between words is orderly and automatic
- a more efficient fluent and personal style can be developed
- pupils with handwriting coordination difficulties experience less pain and difficulty
- legibility of writing is improved
- reinforces multisensory learning linking spelling, writing and speaking

When examining all three styles of handwriting (manuscript, D’Nealian, and cursive), it is important to note that some students veer away from the standard way in which they are taught to write using a particular style; in essence, they modify the style to their own personal hand.

The results are usually a mix between two of the main styles of handwriting formally learned. Graham and Weintraub noticed that this concept of mixing handwriting styles was becoming a common trend that was not being exposed; “[o]ne issue not addressed in the debate on the relative merits of manuscript and cursive writing is that many children and adults do not limit themselves to using manuscript or cursive script exclusively when writing” (1998, p. 290).

Therefore, Graham and Weintraub investigated the relationship between handwriting style and handwriting speed and legibility. Three samples of writing (narrative, expository, and copying) were collected from 600 students from fourth grade up to ninth grade. “The copying task provided a measure of handwriting speed and all three writing samples were scored for handwriting style” (1998, p. 290). The styles of handwriting categorized were manuscript, cursive, and two blends of both: mixed-mostly manuscript, and mixed-mostly cursive. The latter two were defined by have 50% more of one style with the other style still present. The results of the research study showed “the handwriting of students who used a mixed style were faster than the handwriting of the students who used either manuscript or cursive exclusively. In addition, papers written in mixed-mostly cursive letters generally received higher ratings for legibility than papers written with the other three styles did” (Graham & Weintraub, 1998, p. 290).

For current educators, this is important to know because it shows that students who learn more than one style of handwriting, particularly cursive, have a greater advantage in regards to writing competency over students who only learn one style of handwriting. The most vital part of learning more than one style is practice and emphasis. Students must continue to receive handwriting instruction while they are still developing as writers and as humans; if not properly executed, the skills could be lost or become null. With the advancement of technology in the



classroom, finding time to devote solely to handwriting instruction can become increasingly difficult. Of course, when deciding how to fit handwriting instruction into a typical school day, it is imperative to consider the personal benefits handwriting has on elementary school students.

### **Personal Benefits of Handwriting**

Apart from helping to transform students into more sufficient writers on paper, handwriting also offers unique benefits for children on an even more personal level, both physically and cognitively. When children write words on paper, they have to think about the individual letters that form the word they are trying to write. To write the letters, children must know how to form the letters, as well as be physically able to write letters; “[m]otor skills are needed for reproduction of letter forms” (Berninger et al., 1997, p. 653). The next section of the literature review focuses on the development of motor skills as well as the motor skills associated with handwriting.

#### *Motor Skills*

In 1989, Exner said “handwriting involves complex motor learning, including the integration of visual-perception and fine motor skills with cognition” (as cited by Stevenson & Just, 2014, p. 50). When the body moves in response to a task, the brain perceives and integrates information in a non-linear fashion of self-organization, automatically resulting in the easiest motor movement for the task (Kamm et al., 1990). That being said, when children develop and grow, so do their motor skills. As time moves forward, children will refine their motor skills and

adapt in response to any objects utilized or situations they are placed in. With handwriting, the case remains the same. Children learning to write in the early years of their life will start to form the fine motor skills involved with being able to produce legible handwriting; the skills only strengthen and continue to develop as the children grow older. The three main stages of motor learning for handwriting occur, each beginning by using cognition and vision, progressing to developing motor performance, to finally developing fluency through kinesthesia/muscle memory and self-monitoring (Stevenson & Just, 2014).

According to Stevenson and Just (2014), the most important time period for children to learn handwriting skills occurs between the ages of five and seven years old, as this is when children will truly be able to strengthen their cognitive and motor skills. Children will first watch and imitate teachers modeling correct letter formation through strokes. Children will then trace letters with the aid of verbal cues; as children gain more mastery, the verbal cues fade. Next, meaningful practice is given and children improve until their handwriting is fluent and automatic; teachers provide feedback supporting children in self-monitoring. Finally, children develop the speed in their handwriting and continue to receive support on skill development (Stevenson & Just, 2014). Children who do not receive adequate handwriting instruction will not successfully reach the milestones therein associated, losing a significant amount of fine motor skill acquisition.

Graham (2009) indicated that in first through third grades, the recommended amount of time for handwriting instruction in the classroom is 50-100 minutes per week. Students need enough structured handwriting instruction so they can develop the kinesthesia/motor memory to remember the stroke sequence for letter formation from one lesson to the next (Asher, 2006).

Asher recommended, to help facilitate motor memory of forming letters, that “a school use consistent handwriting curriculum throughout the grades, as each curriculum uses unique descriptions for letter formation” (as cited by Stevenson & Just, 2014, p. 52). The key take away here is ‘throughout the grades’. Handwriting should be emphasized all throughout elementary school so students can gain the benefits that are associated with such a task.

### **Handwriting in the 21<sup>st</sup> Century**

Technology in the classroom has grown a tremendous amount in the past two to three decades, completely retooling the way students learn new information. It is not terribly uncommon to see televisions, interactive white boards, iPads, and other touch screen devices all together in one classroom. Countless students, especially those currently attending an elementary school, have grown up with technology and do not know a life before its takeover. In fact, a copious amount of students can be considered more proficient with technology use than their teachers. “Current students are more knowledgeable than their teachers when it comes to [information and communication technology]” (Xioqing et al., 2013, p. 392); it is a simple case of digital natives versus digital immigrants.

Due to the growth of technology in the classroom, several of the older methods of teaching are beginning to vanish, handwriting instruction included. In fact, keyboarding may be on the brink of replacing handwriting all together. The Common Core State Standards, implemented in 2010, only feature two standards regarding handwriting, while additional feature keyboarding. Is keyboarding more significant than handwriting? This next section of the literature review will expand upon the use of keyboarding versus traditional handwriting.

### *Keyboarding*

“Fluent transcription is an important component of the writing process that needs to be developed in children and is presently done so through handwriting instruction in the classroom. However, children are now expected to produce writing via keyboards” (Connelly et al., 2007, p. 481). The Common Core State Standards now require students to become proficient in keyboarding, a skill that is quite a bit different than handwriting in regard to how it is produced. “Keyboarding requires the writer to find and select the appropriate keys to produce a letter. Therefore, it is simpler than handwriting where letters are required to be formed by hand” (Connelly et al., 2007, p. 483). However, without fluency in keyboarding, students will still have to allocate time and resources to find the correct letters on the keyboard, much like students stopping and thinking about how to form letters by hand.

In a 1997 research study conducted by Berninger et al., second, fourth, and sixth grade students with dysgraphia were tested on speed and quantity of text produced through both handwriting and keyboarding to see if one had more of an advantage over the other. Berninger et al. hypothesized that children with dysgraphia would write more using keyboards because it was thought keyboards would relieve writers of the mechanical burden of writing letters, thus freeing up working memory space (Berninger et al., 1997); the study was broken into two physical tasks. The first task was an alphabet writing task that had the students write all 26 letters of the alphabet (lower case) by pen, followed by typing them all with a keyboard; the goal was to write and type as quickly and accurately as possible. The second task of the study had the students write a sentence and then an essay about specified topics, first by pen, then by keyboard; the

number of correct words produced in a given amount of time were recorded (Berninger et al., 1997).

The results of the study slanted slightly more in favor of handwriting, rather than keyboarding, as being the superior mode of composing text.

Second, fourth, and sixth graders wrote more letters automatically by keyboard than by pen, and fourth and sixth graders wrote the alphabet faster by keyboard than by pen.

Second graders wrote longer sentences, but fourth and sixth graders wrote shorter sentences by pen than by keyboard. The second, fourth, and sixth graders wrote sentences faster (seconds per word) by pen than by keyboard. Second, fourth, and sixth graders wrote longer essays (number of words) and wrote essays faster by pen than by keyboard (Berninger et al., 1997, p. 129-130).

At the text level, pens had a consistent advantage over keyboards across all grade levels tested for both length of text and rate of text produced. Although the students were faster on the keyboard while producing individual letters and sentences, students were both faster and lengthier with their work while composing an essay using a pen than a keyboard (Berninger et al., 1997).

Keyboarding does have its advantages, however. While keyboarding, students do not have to focus on legibility like they would otherwise while handwriting. In 2002, Rogers and Case-Smith compared sixth graders' handwriting speed and legibility with keyboarding speed and error rate, after the students had undergone 30 minute sessions of keyboarding instruction over the course of 12 weeks. The students who were identified as having below average handwriting speed and legibility achieved more text production with keyboarding. "This study

suggests students with poor handwriting could be more effective keyboarders, allowing them to concentrate on content, once they have gained some keyboarding proficiency” (Rogers & Smith, 2002, as cited by Stevenson & Just, 2014, p. 53).

When keyboarding has been shown to give an advantage over handwriting, the students affected tend to be in the upper elementary grades (4-6) or higher. When handwriting has an advantage, the students tend to be in the early elementary grades (K-3). This observation coincides with the research stating that handwriting instruction, especially in the early elementary grades, is extremely important for students to become more sufficient writers. While there is no doubt that keyboarding will continue to be taught, perhaps even emphasized, in the modern day classroom, handwriting should not be discarded and forgotten all together. When students are young and still very much developing, the focus should be placed on handwriting. As the students grow older, handwriting skills should continue to be refined first, then with the addition of keyboarding slowly. The research states that keyboarding should not be a substitute for handwriting in elementary school. What do the current K-3 teachers and their students say?

In short, this chapter of the thesis has been utilized to present the findings of extensive research that has been conducted to determine the benefits handwriting has on children's writing skills. These findings suggest that speed and fluency, both key contributors of handwriting legibility, are linked to writing success because students are able to get their thoughts onto paper more efficiently. The students who were more proficient in handwriting produced a higher quality of written work.

Apart from the affect handwriting had on quality of student work, the research also found that handwriting can strengthen fine-motor skills in children, as the movements required to

produce letters on a page come from the wrist, hand, and fingers. To cement these fine-motor skills in children, it has been stressed that handwriting instruction needs to be facilitated throughout the early grade levels to allow students ample amount of time to develop muscle memory and refine their skills. The next chapter of the thesis will explore the ways in which the research questions were answered.

## **CHAPTER THREE: METHODOLOGY**

In 1995, Benbow stated that handwriting is one of the first tasks learned in school, and is essentially one of the most prominent, as it is used throughout a person's entire life. In spite of this, in today's curriculum, little attention is paid to when, where, or how students develop these skills (Stevenson & Just, 2014). After reviewing extensive amounts of research, I have come to the realization that, decades ago, handwriting and handwriting instruction in the elementary school classroom were thought of as much more vital and held more of a sheer importance than those of the views expressed today. Previous research on the significance of handwriting and handwriting instruction in the classroom included thorough studies and lengthy discussions that detailed why exactly these functions are so important for children developmentally and academically. Current research on the same subject, however, tends to reflect back on the dated research with a sense of nostalgia, stating that handwriting instruction used to be emphasized more. Even though a large body of research exists to show the importance of handwriting and handwriting instruction, the emphasis of yesterday is unfortunately not in place today.

The advancement of technology and switch to the Common Core State Standards, which only features two handwriting standards, can definitely be viewed as contributing factors to the decline of handwriting instruction in the elementary school classroom in recent years. I wondered why something so previously praised, with clear benefits, could be lessened to the extent handwriting instruction has been lessened. I wanted to know what current elementary school teachers think and how they feel about this switch of focus. I was also interested in what the students think about this reduction in formal handwriting instruction, as more focus is placed on keyboarding. Therefore, the purpose of this research study was to determine the current



perceptions of elementary school teachers, particularly kindergarten through third grade, and their students in regard to handwriting instruction in the classroom.

This section of the thesis more closely examines exactly how I conducted my research with current kindergarten through third grade teachers and their students. This section also address the processes used to conduct the research, showcases the survey sent out to teachers, discusses the protocol used for the focus groups with students, and covers general demographics about the county and school in which all the research took place.

### **IRB Process**

In order to conduct the research necessary for the completion of this thesis, I was required to partake in the Institutional Review Board (IRB) process because my research dealt directly with human subjects. I sent out a survey to elementary school teachers (kindergarten-third grade) at a specified elementary school as well as held focus groups for students in the classroom of the teachers surveyed. To start the whole process I applied for the official IRB approval to move forward and conduct the research. After several needed revisions, the study was approved (see Appendix D for approval letter. After receiving approval, I asked the kindergarten through third grade teachers if they would be willing to participate in the study. Apart from the K-3 teachers, I also looked to gain consent from parents to allow their students to participate. Once I received consent to administer the teacher surveys and conduct the student focus groups from the K-3 teachers and parents of the students, I began the study.

## Teacher Survey

To administer the teacher surveys, I used the website titled Survey Monkey. Since handwriting instruction is most vital at the early elementary grades, I focused my attention on kindergarten through third grade teachers only. While handwriting instruction should be emphasized all throughout the elementary grades, I limited the control group for the sake of research relevancy.

From my survey, I hoped to gain insight into what the current perception of elementary school teachers is in regard to handwriting instruction in the classroom. More specifically, I hoped to better understand how current teachers are teaching handwriting to their students. I also wished to know how much time teachers spend on handwriting instruction during the day or week. I asked the teachers how long they have been teaching to see if there is any pattern between perception of handwriting instruction and length of time spent in the classroom.

I was also interested in seeing if any of the teachers have taught a grade higher than third to see if their views on handwriting instruction differ from teachers who have only taught early elementary students, since they have seen how handwriting instruction in earlier grades can affect the students in later grades. All teachers remain anonymous. To send the surveys to the K-3 teachers, I located their email addresses on their school's website and sent each of grades' team leaders an email with a brief synopsis of my study, asking if they would like to participate, and a direct link to my survey on Survey Monkey. The survey window was open for two weeks, providing the teachers ample time to complete the survey if they were interested in participating. See Appendix E for the teacher survey.

### **Student Focus Groups**

The second part of this research study addresses some of the students in the participating teachers' classrooms. After IRB approval was received, I held several focus groups consisting of four students at a time. I made the focus groups as fun and exciting for the students as possible so that they felt comfortable and confident answering the questions I asked. The goal of the focus groups was to see what current students think about handwriting in general, as much of the focus is always placed on the educators' aspects. All of the focus groups were held consecutively during one school day. Prior to each session, I arranged times with the classroom teachers that would work best with their schedules. Once I completed one focus group, I prepared and switched classrooms to the next.

Some of the questions I asked were to help uncover the students' opinions to see if they enjoy writing words by hand, or if they prefer keyboarding. I also asked if they were familiar with cursive handwriting, depending on their current grade level. If they were familiar with cursive handwriting, or were in the process of learning it, I asked for their opinion on whether or not they liked cursive and wanted to learn it or continue learning it. Briefly, I addressed touch keyboarding (touch screens) and other forms of technology innovations with the students.

During the focus group with each grade level, all four students and I sat at a table in the back of the classroom. The students were either randomly selected by myself or the teacher; I let the classroom teachers decide how they wanted to do this. While sitting at the back tables, I asked one question at a time, allowing each of the four students to reply one after another. Once each student gave an answer and I recorded it in a notebook, I would ask the next question and the process would continue. During each focus group, the questions and answers were presented

in this fashion, but as time progressed, they were less staccato. Eventually, the focus groups turned into my original intention of a discussion, with each student instilling their opinions naturally to the flow of the conversation. I spoke with the students for roughly 15-20 minutes per grade level, gaining as much insight as possible on their views and opinions in the small time frame. See Appendix F for the student focus group questions.

### **Demographics**

My research took place at one elementary school in Sarasota County in the state of Florida. I selected Sarasota County as my research site because I was a student of the county throughout my elementary, middle, and high school years. My earliest memories of elementary school come from the county; therefore, it holds a special place in my heart. This next section of the methodology chapter examines some of the important statistics and facts associated with Sarasota County and anticipated school of choice. The goal is to give the reader a better scope and understanding of the research site.

#### *Sarasota County Public Schools*

Of the 67 school districts in the state of Florida, Sarasota County is one of only five districts graded “A” by the Florida Department of Education in 2013. Furthermore, Sarasota County is ranked third in student achievement across all 67 districts. The county currently has 41,003 students enrolled, with 19,156 being elementary students. There are 50 schools in Sarasota County, 24 of which are elementary schools. 90 percent of elementary and middle

schools earned "A" or "B" grades in 2013. (All information from <http://www.sarasotacountyschools.net/>)

A 2012 independent study by MGT of America concluded that the district is one of the best-run school systems the company has reviewed, citing high performance and innovative practices. With regard to a 21st century classroom, Sarasota County provides interactive instruction supported by technology that emphasizes cooperative learning and problem solving at all grade levels. Knowing all of this, Sarasota County is an ideal district to select an elementary school to conduct research for this study, as there is an emphasis placed on technology.

### *ABC Elementary School*

The elementary school in which I administered my teacher surveys, as well as conducted the student focus groups, is ABC Elementary School. A pseudonym is used to help protect the identity of the participating teachers and students of this study. I chose this school, located in Sarasota County, because this is the elementary school I attended during grade school. ABC Elementary, as per the school website, is an award winning school; "[ABC] is proud to represent the schools in Sarasota County and across Florida as a "State Recognized Model School" as noted by the Florida School Report, as well as a 5 Star, 'A' rated school of Academic Excellence!".

According to the Florida Department of Education website, stretching back to the year 2000, ABC has received an 'A' school rating for 14 consecutive years. Currently, there are 834

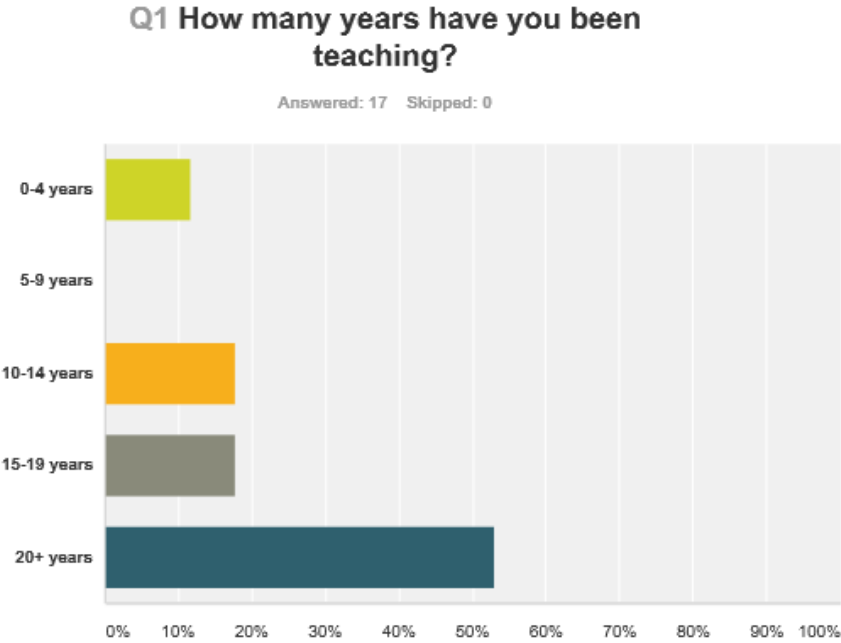
students enrolled in the school, with 27.4% being economically disadvantaged and 34% receiving a reduced lunch. In 2014, 81% of the students met high standards in writing.

## **CHAPTER FOUR: FINDINGS AND DISCUSSION**

This chapter of the thesis focuses on the results of the teacher surveys and results of the student focus groups. After all the data is presented for each instrument, the findings and implications are discussed.

### **Teacher Survey**

Due to the fact that my study focused on Kindergarten through third grade, I acquired the emails for only the K-3 team leaders through their school website. I sent the four team leaders each an individual email with a brief synopsis of the study and a direct link to the teacher survey on Survey Monkey, asking them all to share the email with the rest of their team. Of the 33 potential teacher participants, 17 responded by completing the survey. The exact results of the teacher surveys, from Survey Monkey, are depicted below through the use of graphs and tables, located on the next few pages.



Answer Choices	Responses
0-4 years	11.76% 2
5-9 years	0.00% 0
10-14 years	17.65% 3
15-19 years	17.65% 3
20+ years	52.94% 9
<b>Total</b>	<b>17</b>

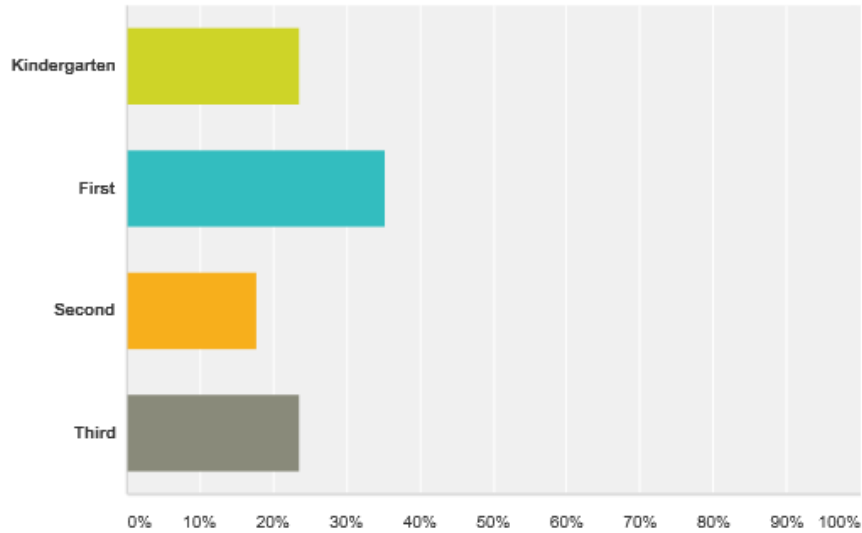
Figure 2: Teacher Survey Question 1 Results

Surprisingly, the majority of the teacher participants have been in the field for over twenty years. Before reviewing the results, I figured that many of the participants would have been teacher for around 0-4 years or 5-9 years, as education as already drastically changed from twenty years ago.



### Q2 Which grade level are you currently teaching?

Answered: 17 Skipped: 0



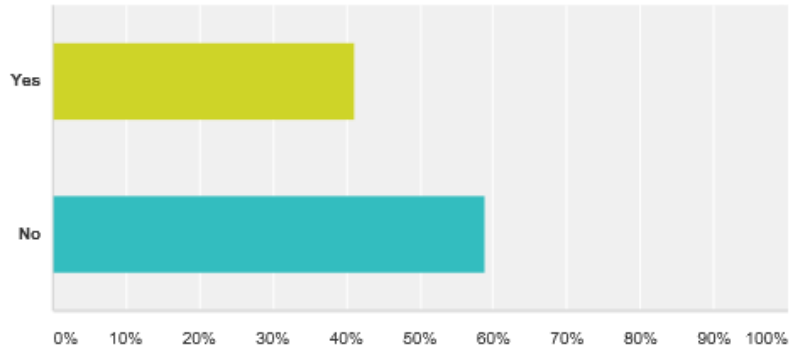
Answer Choices	Responses	
Kindergarten	23.53%	4
First	35.29%	6
Second	17.65%	3
Third	23.53%	4
<b>Total</b>		<b>17</b>

Figure 3: Teacher Survey Question 2 Results

The current grade levels of the participating teachers' offers a chance for varied results, as all the grade levels are represented. While most of the participating teachers teach first grade, there are still several to represent the other grades as well.

### Q3 Have you ever taught a grade higher than third?

Answered: 17 Skipped: 0



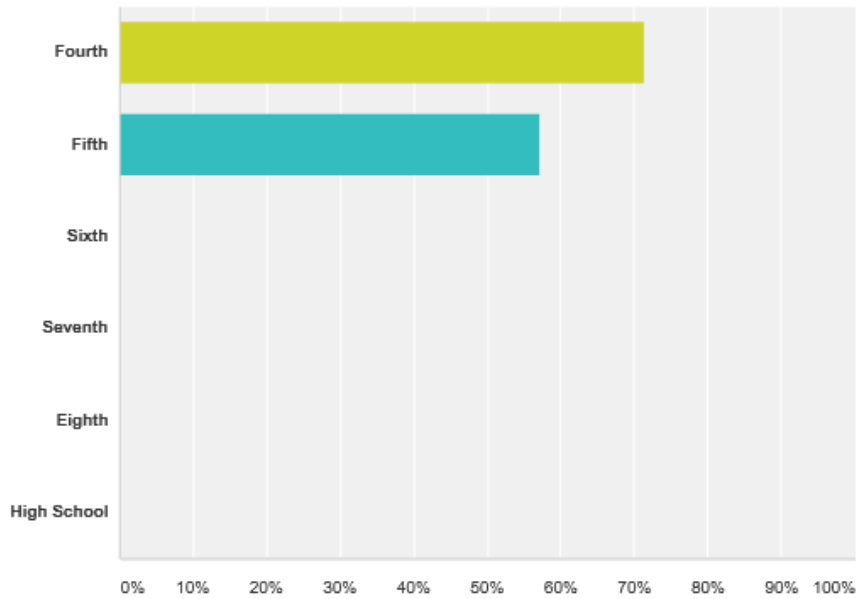
Answer Choices	Responses
Yes	41.18% 7
No	58.82% 10
Total	17

Figure 4: Teacher Survey Question 3 Results

As with the previous survey question results, the mix between having taught a grade higher than third or not is nearly even. This also provides the opportunity for results in the data to be dispersed evenly, as both sides of the question are represented.

### Q4 Which grade(s)?

Answered: 7 Skipped: 10

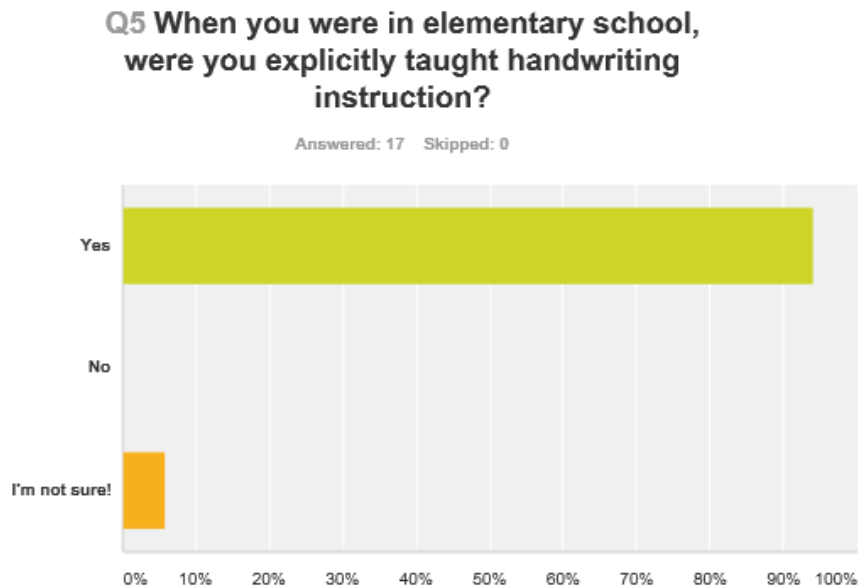


Answer Choices	Responses
Fourth	71.43% 5
Fifth	57.14% 4
Sixth	0.00% 0
Seventh	0.00% 0
Eighth	0.00% 0
High School	0.00% 0
<b>Total Respondents: 7</b>	

Figure 5: Teacher Survey Question 4 Results

None of the participating teachers have taught middle school or high school. This is not surprising, as elementary certification runs from kindergarten to sixth grade. While there can be no views expressed from teachers who have taught the older students, there are still several

participating teachers who have taught fourth and fifth grade, who can still provide feedback about older students' handwriting and handwriting instruction.

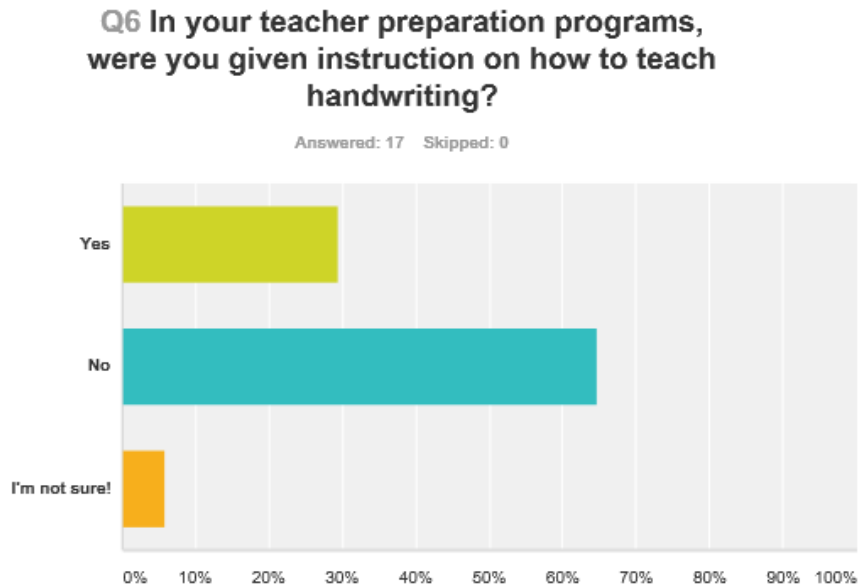


Answer Choices	Responses	Count
Yes	94.12%	16
No	0.00%	0
I'm not sure!	5.88%	1
<b>Total</b>		<b>17</b>

Figure 6: Teacher Survey Question 5 Results

I asked this question to see if there was a relationship between participating teachers' views on handwriting instruction and whether or not they received handwriting instruction in school. The majority confirmed that they did receive handwriting instruction, while one could not recall for sure. Knowing this, I approached the remainder of the questions with the

knowledge that nearly all the participating teachers experienced handwriting instruction in school.



Answer Choices	Responses
Yes	29.41% 5
No	64.71% 11
I'm not sure!	5.88% 1
<b>Total</b>	<b>17</b>

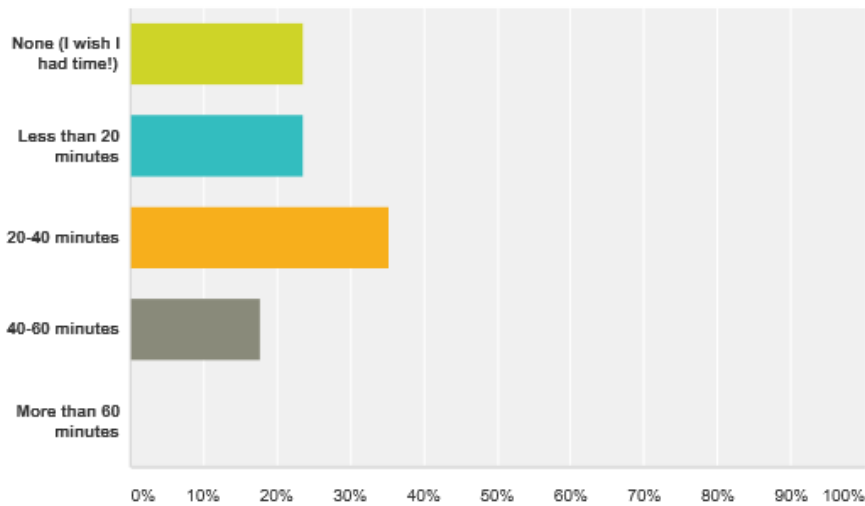
Figure 7: Teacher Survey Question 6 Results

As with the previous question, I wanted to know if the participating teachers had received formal instruction on how to teach handwriting to their students. I thought that perhaps the teachers who did not receive formal instruction might be more impartial to handwriting

instruction in their classrooms than the participating teachers who did receive instruction on how to teach handwriting.

### Q7 How much time do you spend on handwriting instruction during a typical week?

Answered: 17 Skipped: 0



Answer Choices	Responses	Count
None (I wish I had time!)	23.53%	4
Less than 20 minutes	23.53%	4
20-40 minutes	35.29%	6
40-60 minutes	17.65%	3
More than 60 minutes	0.00%	0
<b>Total</b>		<b>17</b>

Figure 8: Teacher Survey Question 7 Results

I was very curious to see the results of this question, as it gets to the heart of the research. Through these results, it is evident that the time spent on handwriting instruction during a typical week is quite varied. Several participating teachers admitted that no time was spent, while others

stated that 40-60 minutes were spent. It should be emphasized, however, that these times represent one full week, not a single day.

### Q8 How many minutes in addition to 60?

Answered: 0 Skipped: 17

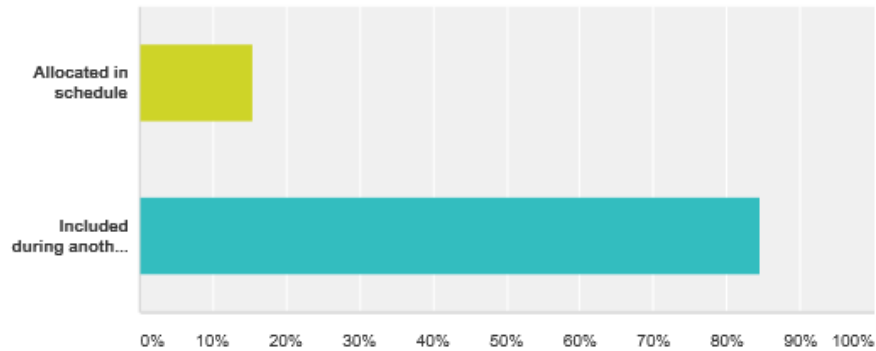
#	Responses	Date
	There are no responses.	

Figure 9: Teacher Survey Question 8 Results

It was interesting to know, that during a typical week of school, none of the participating teachers spent more than 60 minutes on handwriting instruction. If broken down daily, 60 minutes of handwriting instruction each week would only amount to a little more than ten minutes each day; this shows the severe lack of handwriting instruction. It should also be noted, however, that this may not be due to the participating teachers' choices.

**Q9 Is your time spend on handwriting instuction specifically allocated in your schedule, or do you include it during another curriculum time?**

Answered: 13 Skipped: 4



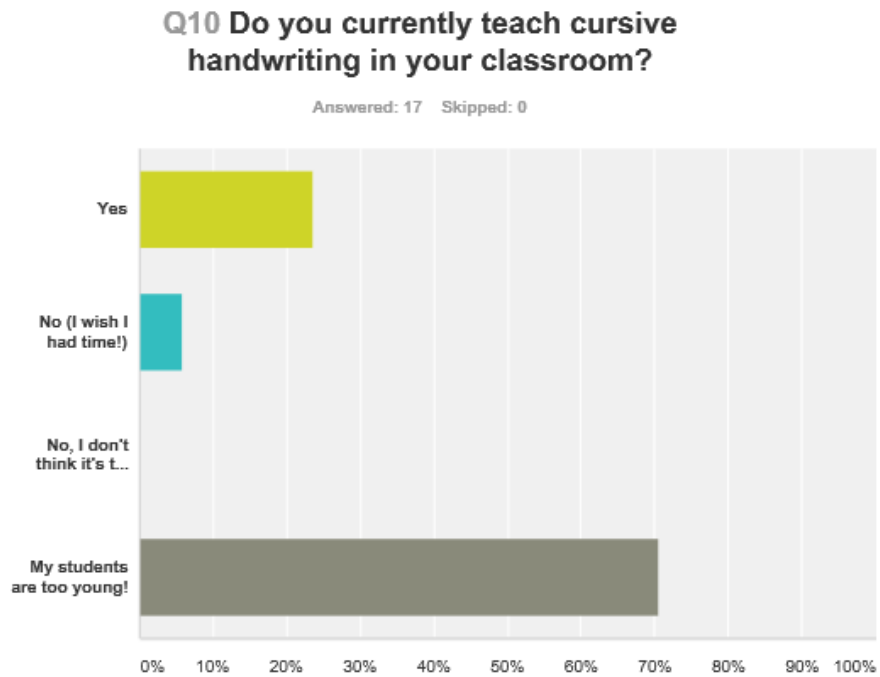
Answer Choices	Responses
Allocated in schedule	15.38% 2
Included during another curriculum	84.62% 11
<b>Total</b>	<b>13</b>

Figure 10: Teacher Survey Question 9 Results

The results of this question accurately represent what I thought they would be. The handwriting instruction that the majority of participating teachers provide to their students is included during a different curriculum time, not specifically allocated in the schedule. This



shows that the participating teachers' have to make a concerted effort to implement a focused handwriting instruction delivery.

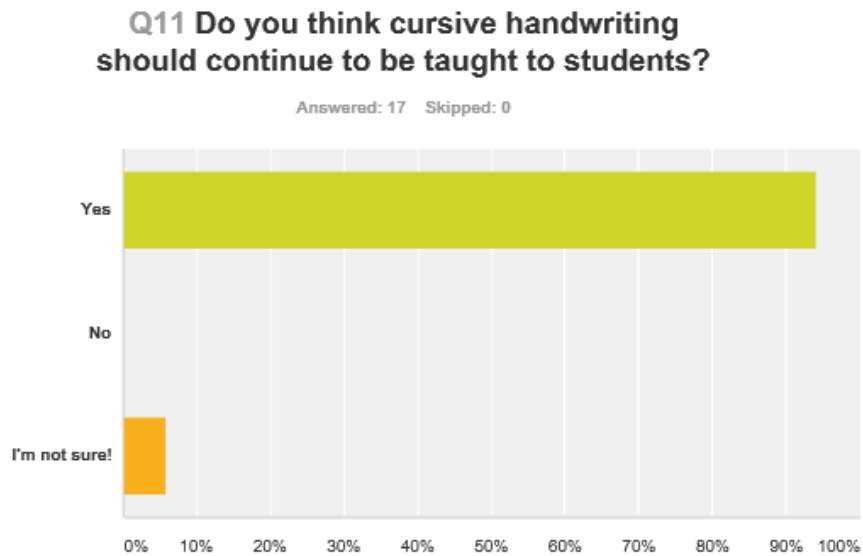


Answer Choices	Responses	Count
Yes	23.53%	4
No (I wish I had time!)	5.88%	1
No, I don't think it's that important!	0.00%	0
My students are too young!	70.59%	12
<b>Total</b>		<b>17</b>

Figure 11: Teacher Survey Question 10 Results

In years past, cursive was typically taught to students in grades three and up, not below. The results of this question accurately reflect this practice, as nearly all of the participating

teachers do not teach cursive to their students, selecting the option that their students are too young. Four teachers, however, said that they do teach cursive handwriting.



Answer Choices	Responses	
Yes	94.12%	16
No	0.00%	0
I'm not sure!	5.88%	1
<b>Total</b>		<b>17</b>

Figure 12: Teacher Survey Question 11 Results

For even the participating teachers who do not currently teach handwriting, all but one teacher said cursive should continue to be taught to students. I found this interesting, as I did not

expect for so many to feel this way, as cursive does indeed seem to be a dying form of handwriting. One teacher stated that (s)he was unsure, the explanation listed on the next page.

### Q12 Please state your reasoning!

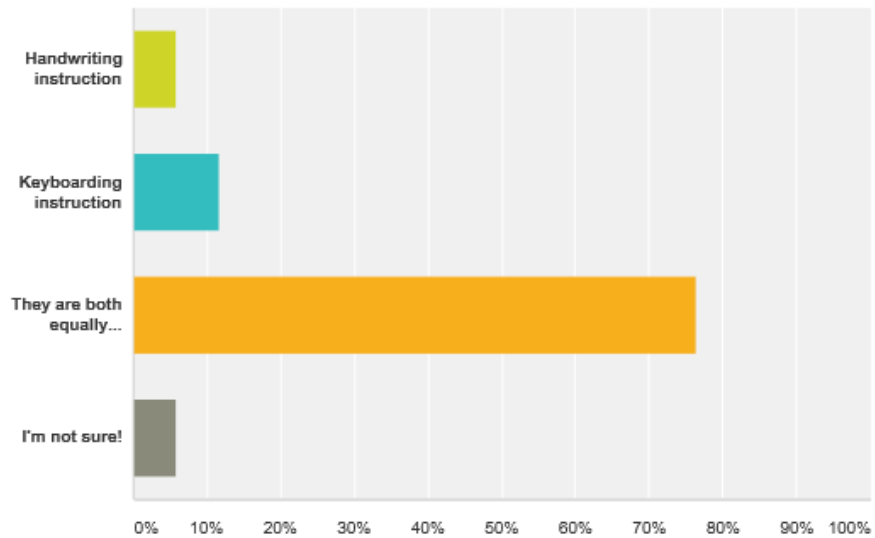
Answered: 17 Skipped: 0

#	Responses	Date
1	Just an fyi, I have a handwriting time where we learn the letter of the week, I also review handwriting all thru the day, in daily lessons...	12/30/2014 9:34 AM
2	An art form not to be lost.	12/19/2014 1:01 PM
3	It provides a faster way of writing which can be essential for quicker and more successful recording of notes from oral learning in the future.	12/17/2014 7:32 PM
4	If you can write, you should be able to read it	12/16/2014 10:03 AM
5	When you sign your name to legal documents it is in cursive. Also, writing in cursive is quicker than printing. This allows students to take notes in a more timely fashion.	12/16/2014 7:30 AM
6	Must be able to read and write cursive in life	12/15/2014 8:42 AM
7	I think that teaching cursive handwriting is important because there are still many people that use cursive handwriting in the world. We should be taking the the steps and time necessary for our children to continue being a part of a global society.	12/15/2014 7:35 AM
8	Many times a person makes a first impression through their writing (before their personality and good looks take place while meeting a person.) Handwriting may be a judgment made about a person; very important!!	12/15/2014 7:05 AM
9	As long as other people use cursive writing in the real world our students need to be able to read it. They also need to be able to sign their name in cursive. There are still high school teachers that expect students to write in cursive.	12/15/2014 7:03 AM
10	Students need to be taught how to write cursive because they will still be required to read cursive.	12/15/2014 6:43 AM
11	So many historical documents are in cursive. We need to save that for the next generations. Wouldn't you love to be able to read a letter your grandmother/father wrote to you years ago? It was probably done in cursive!	12/14/2014 8:35 PM
12	There is nothing like a handwritten letter. I believe that everyone should know how to write in print as well as cursive. Everyone needs to know how to write checks, address envelopes, fill out a job application, and of course be prepared for the times when we don't have use of computers.	12/12/2014 10:15 PM
13	Although we live in a tech-savy world with keyboarding, handwriting is important for readability and written expression. There still needs to be a universal hadwriting format.	12/12/2014 3:28 PM
14	It is rarely used. A dying art, many say. I can not write in cursive either	12/12/2014 3:23 PM
15	I think it is an important life skill. I think by learning to write it, students also learn to read it.	12/12/2014 2:56 PM
16	The children need to be taught how to properly form the letters. There are too many children who write top to bottom, right to left, etc. Their writing is difficult to read. There needs to be some type of instruction.	12/12/2014 1:17 PM
17	Otherwise it would be a lost art.	12/12/2014 12:47 PM

Figure 13: Teacher Survey Question 12 Results

**Q13 Do you think handwriting instruction or keyboarding instruction is more important in today's modern era?**

Answered: 17 Skipped: 0



Answer Choices	Responses
Handwriting instruction	5.88% 1
Keyboarding instruction	11.76% 2
They are both equally important	76.47% 13
I'm not sure!	5.88% 1
<b>Total</b>	<b>17</b>

Figure 14: Teacher Survey Question 13 Results

The results of this question speaks for itself; the vast majority of the participating teachers felt that both handwriting and keyboarding were equally important. All of the research I have done presents the benefits of both handwriting and keyboarding for students, signifying that both should continue to be taught to students. The participating teachers agreed with this, except

for one who felt that handwriting is more important, two who felt that keyboarding is more important, and one who was not sure how to answer.

### Q14 Please state your reasoning!

Answered: 17 Skipped: 0

#	Responses	Date
1	due to state testing, key boarding is equally important	12/30/2014 9:35 AM
2	Personal writing and workplace keyboarding are necessary in our world.	12/19/2014 1:03 PM
3	They are both essential communication skills. They activate different parts of the brain and therefore can both be of benefit in relation to learning.	12/17/2014 7:34 PM
4	I believe that as you write you remember more	12/16/2014 10:04 AM
5	I'm not sure when it is developmentally appropriate to teach keyboarding skills. I know that I took beginning typing in 8th grade and additional typing classes in high school. I feel that I am proficient with the keyboard and usually end up as secretary of our team because of this skill.	12/16/2014 7:32 AM
6	Both are typically used daily	12/15/2014 8:42 AM
7	Computers have taken over so much of the way our society works. Phones, tablets, laptops, etc. are in ALL areas of our life. Students should be prepared and taught this lifelong skill.	12/15/2014 7:37 AM
8	See previous reasoning statement...	12/15/2014 7:06 AM
9	This is a real life skill.	12/15/2014 7:03 AM
10	Students are required to read, write, and type so both handwriting instruction and keyboarding are essential.	12/15/2014 6:45 AM
11	It is essential to read handwriting, but also essential to know keyboarding skills.	12/14/2014 8:37 PM
12	They are both important and always have been.	12/12/2014 10:16 PM
13	Students need both skills in order to remain competitive in the job market.	12/12/2014 3:28 PM
14	We utilize keyboards much more often than cursive.	12/12/2014 3:23 PM
15	I think handwriting is a reflection of one's pride in his/her work. Keyboarding is important because it is the direction that things are going.	12/12/2014 2:57 PM
16	The new tests are taken on the computer. If they spend their entire time hunting and pecking at the keys they are not going to be able to let the writing flow.	12/12/2014 1:18 PM
17	There's different situations in the real world when both are important.	12/12/2014 12:48 PM

Figure 15: Teacher Survey Question 14 Results

### *Grades Levels Taught*

After viewing all of the data collected from the surveys, there is evidence to support the current views that K-3 elementary school teachers have on the topic of handwriting instruction in the classroom. To begin, I compared the views of teachers who have taught a grade level higher than K-3 to the teachers who have not taught a grade level higher than K-3. I chose to compare these two groups to see if teachers who have taught higher grade levels have a different view towards handwriting instruction in the classroom than those who have not. Teachers who have taught a grade level higher than K-3 have been able to witness for themselves the effects of handwriting and keyboarding instruction on the development of their students. The following table shows the results of teachers' grade levels taught compared to view on handwriting instruction.

Table 1: Grade Levels Taught vs. Handwriting View

	<b>Handwriting more important</b>	<b>Keyboarding more important</b>	<b>Both equally important</b>	<b>Unsure</b>
<b>Taught no grade higher than K-3</b>	1	1	7	1
<b>Taught one or more grades higher than K-3</b>	0	1	6	0

\*Numbers depict amount of teachers in each category

As shown, the majority of teachers feel that both handwriting and keyboarding are equally important, regardless of whether or not a grade higher than K-3 has previously been

taught. Two teachers who have not taught a grade higher than K-3, however, feel impartial to one method over the other; one teacher chose handwriting and the other chose keyboarding. For the teachers who have taught one or more graders higher than K-3, all but one chose both handwriting and keyboarding as equally important; one chose keyboarding as the most important. This data suggests that there is no trend between previous grade levels taught and views on handwriting instruction in the classroom, as there are no apparent trends.

*Time in Profession*

Next, I compared the views of teachers who have been teaching in the field for an indicated amount of time to one another to see if time in the profession had any effect on the view of handwriting instruction in the classroom. Teachers who are new to the profession have been prepared to teach with the technology and have been given the tools and preparedness to implement such practices into their own classrooms while studying to become a teacher. Teachers who have been teaching longer, however, have not always had the luxuries of technology. These teachers have been able to experience firsthand the introduction of technology into the classroom and witness with their own eyes the impact it has had on education. The following table shows the results of teachers’ years taught compared to view on handwriting instruction.

Table 2: Years Taught vs. Handwriting View

	<b>Handwriting more important</b>	<b>Keyboarding more important</b>	<b>Both equally important</b>	<b>Unsure</b>
<b>0-4 years</b>	0	1	1	0

<b>5-9 years</b>	0	0	0	0
<b>10-14 years</b>	0	0	3	0
<b>15-19 years</b>	0	0	3	0
<b>20+ years</b>	1	1	6	1

\*Numbers depict amount of teachers in each category

Regardless of the amount of time spent in the profession, the majority of the teachers feel that both handwriting instruction and keyboarding instruction are equally important. Two teachers, one who has been teaching less than five years, and one who has been teaching 20+, feel that keyboarding is more important than handwriting. This bit of information suggests that no trend exists between the amount of time spent in the profession and the view on handwriting instruction in the classroom, as the teacher who has been in the profession much longer feels that a focus on keyboarding instruction in the classroom is more important than a focus on handwriting instruction. Another teacher who has been teaching for 20+ years, however, feels that a focus on handwriting instruction is more important. With this, it can be concluded that the opinions come to a personal preference.

*Cursive in the Classroom*

After looking at the specific teacher views on the importance of handwriting versus keyboarding instruction in the classroom, I took a closer look at the views on cursive. Out of all 17 teacher participants, only one was not sure if cursive should continue to be taught in the classroom; the other 16 feel that cursive is important enough to students to continue being taught.



The one teacher who was unsure about whether or not cursive should continue to be taught to students stated that cursive is a dying art that is rarely used. This teacher also stated that (s)he does not know how to write in cursive. I found this statement compelling. None of the other teachers admitted as to whether or not they know how to write in cursive, they all simply feel that it should continue to be taught.

Also interesting is the fact that even the teachers who feel keyboarding instruction is more important than handwriting instruction, agree on the fact that cursive should continue to be taught to students. The table below shows the results of how the 17 teacher participants felt about cursive.

Table 3: Teacher Participants' View on Cursive

<b>Faster than manuscript</b>	<b>Life skill</b>	<b>Art Form</b>	<b>Other</b>
3	8	5	1

\*Numbers depict amount of teachers in each category

After reviewing the statements said by the teachers, the most common reasoning behind their views is that cursive handwriting provides students with a link to the rest of the world, where cursive is still used by many. They described cursive as an essential life skill that can be found all throughout history and modern documents. The eight teachers who share this belief also mentioned that students need to be able to sign their signatures, something they need cursive for. Three teachers explained that cursive is much quicker than manuscript, providing students with the benefit of speed when taking notes or simply writing in general. Five teachers stated

that cursive is a beautiful art form, hinting at the fact that it would be a shame if the practice were to be lost. One teacher response did not accurately state the reasoning behind why (s)he thinks cursive handwriting should continue being taught. Rather, the teacher provided a brief statement on how (s)he reviews handwriting in his/her classroom.

### **Student Focus Groups**

During all of the student focus groups, I conferenced with four students from each of the four grade levels I had planned to meet with: Kindergarten, first grade, second grade, and third grade, making the total number of students I met with 16. The students who I had a conference with were either selected by the teacher or me, randomly. During the actual meeting, all of the students were well behaved and engaged, making the process smooth and efficient. In all four of the focus groups, each student actively participated and responded to my questions to the best of their ability. However, some students needed more prodding and support than others. I asked each group the same questions to ensure I would receive similar feedback from each student in return.

At first I set out to ask the questions in a particular order. However, the focus groups turned into a round table-like discussion, so I allowed the students to go with the flow of the conversation. I did, however, make sure all five questions were asked in some form. Below is a chart from each grade level with summarized notes I took during the focus groups, organized by grade and student, as well as several charts which present the data in a more efficient way. For the purpose of this research project, I gave each student in their grade level focus group a number from one to four to keep the students anonymous. The discussion notes progressively got longer

as I advanced through the grades, as the students had more input and more verbalization/oral language skills to provide upon their opinions on the topics discussed.

*Kindergarten*

The following table shows the discussion notes from the Kindergarten focus group.

Table 4: Kindergarten Discussion Notes

<b>Student</b>	<b>Discussion Notes</b>
<i>K.1</i>	Enjoys handwriting - thinks (s)he is good at it; has typed before; likes typing better because (s)he can play on the computer; has used a touch screen device before - has one at home; does not know what cursive is
<i>K.2</i>	Enjoys handwriting - thinks (s)he is good at it; has typed before; likes typing better because it is faster; has used a touch screen before; prefers touch screen over handwriting; does not know what cursive is
<i>K.3</i>	Does not enjoy handwriting - thinks it is boring - makes his/her hand hurt; prefers typing because (s)he can push the keys down; does not like touch screens - cannot feel the buttons; does not know what cursive is
<i>K.4</i>	Enjoys handwriting - thinks it is fun to write; could not quickly recall typing on a keyboard - then remembered - likes pressing the keys; likes touch screens - they are the best because they are fun; does not know what cursive is

The four Kindergarten students I spoke with were randomly selected by myself in the following manner. The teacher of the classroom did not have a preference for choosing students, and told me I could pull any student in the class into my focus group. With this in mind, I simply chose the students based on where they sat in the room - one student from each table group. The Kindergarten students were very attentive during the focus group, and answered the questions I asked. I did notice, however, that they did not offer any more information than what I asked.

Of the four Kindergarten students I met with, three enjoyed handwriting and one did not. The students who enjoyed handwriting do so because they think they are good at it. On the other hand, the student who did not enjoy handwriting felt this way because it makes his/her hand hurt after writing for an extended period of time. All four of the Kindergarten students preferred typing on the keyboard to handwriting, as they enjoy pressing the keys down and feel that typing is faster than handwriting. Three of the Kindergarten students had opinions on touch screens; two liked them and one did not, as (s)he cannot feel the buttons when pressing a letter. None of the Kindergarten students had heard of cursive handwriting before. The following table shows the results of the Kindergarten focus group.

Table 5: Kindergarten Focus Group Results

<b>Kindergarten Student</b>	<b>Prefers Handwriting</b>	<b>Prefers Keyboarding</b>	<b>Wants to learn cursive</b>	<b>Does not want to learn cursive</b>
<i>K.1</i>		X	-	-
<i>K.2</i>		X	-	-
<i>K.3</i>		X	-	-
<i>K.4</i>		X	-	-

*First Grade*

The following table shows the discussion notes from the first grade focus group.

Table 6: First Grade Discussion Notes

<b>Student</b>	<b>Discussion Notes</b>
<i>1.1</i>	Enjoys handwriting - helps with hand/eye coordination and wrist; likes typing, especially typing games; prefers handwriting - you physically write on the paper - (s)he's a writer; likes to read stories then write about them; likes touch screen - no mouse involved; has heard of cursive - practices with mom; excited to learn cursive
<i>1.2</i>	Does not enjoy handwriting - hard to remember letters sometimes, but thinks (s)he writes neatly; likes typing better because it draws the letter for you; likes touch screen the best -can be used anywhere; has heard of cursive - does not want to learn it because it looks hard
<i>1.3</i>	Enjoys handwriting - can write whenever and whatever you want; tries to put hands on keyboard properly - does not like typing; does not like touch screens - prefers handwriting because it is easier; has heard of cursive - excited to learn because you make twists and it looks quicker
<i>1.4</i>	Enjoys handwriting - you can write where you want; likes typing - hard to find the keys, though; would rather handwrite than type; does not like touch screen - too confusing; has heard of cursive - wants to learn it because it is looks cool

The first grade students I spoke with for the focus group were randomly selected by the classroom teacher. When I arrived at the classroom during the time the teacher and I set prior, the teacher picked four students who were best following directions to meet me at the back table in the room. As with the Kindergarten students, all four of the first grade students were engaged. I noticed that the first grade students offered a bit more information in their responses without being prompted.

Of the four first grade students I met with, three enjoy handwriting and one does not. The students who enjoy handwriting feel as if it helps with hand/eye coordination, and allows people to write where ever and whenever they want, unlike typing on a computer where formatting must be done. The student who does not enjoy handwriting feels this way because he/she sometimes has difficulty remembering how to form letters. Three of the first grade students stated that they prefer handwriting over typing because it is hard to find the keys on the keyboard. One student preferred typing because one just has to press a key and the letter appears.

Two of the students like touch screens, and two do not. The two who like touch screens feel this way because there is no mouse involved and they can be used anywhere. The two who do not like touch screens feel this way because they are too confusing. All four first graders have heard of cursive before; three are excited to learn it and one is not. The students who are looking forward to learning cursive thinks it looks fancy and quicker than normal handwriting (print); one already practices at home with parents. The student who does not want to learn cursive thinks it looks hard. The following table shows the results of the first grade focus group.

Table 7: First Grade Focus Group Results

<b>First Grade Student</b>	<b>Prefers Handwriting</b>	<b>Prefers Keyboarding</b>	<b>Wants to learn cursive</b>	<b>Does not want to learn cursive</b>
<i>1.1</i>	x		x	
<i>1.2</i>		x		x
<i>1.3</i>	x		x	
<i>1.4</i>	x		x	

*Second Grade*

The following table shows the discussion notes from the second grade focus group.

Table 8: Second Grade Discussion Notes

<b>Student</b>	<b>Discussion Notes</b>
<i>2.1</i>	Enjoys handwriting - likes the way it looks; have to write out full sentences, so it is good; also likes typing - especially the sound it makes; prefers keyboarding because it is technology; likes touch screen the best because it is modern; does not like cursive - looks like scribble scabble; does not want to learn cursive - might forget how to write normally
<i>2.2</i>	Does not enjoy handwriting - hurts hand after a while; prefers keyboarding because it does not hurt and is much quicker; when writing you have to erase - see messy marks; with typing - just backspace; does not like touch screen - too sensitive; likes cursive - do not have to pick up pencil; excited to learn - looks much quicker

2.3	Enjoys handwriting - likes to read and write; fun to write what you want about a topic; likes keyboarding - not as much work as handwriting; when typing, can just press button and letter appears on screen - do not have to form the whole letter yourself; likes touch screen - no noise like with a keyboard; wants to learn cursive - looks faster and fancier, it is better
2.4	Enjoys handwriting - making letters look pretty is fun; does not like typing - too slow and confusing; likes to look down at paper than up at screen; does not like touch screen - too small, would rather type on a keyboard than touch screen; wants to learn cursive - looks fancy and important; with cursive, do not have to pick up pencil - glide through words quickly

The four second grade students I spoke with were randomly selected by me, in the same fashion I used to randomly select the Kindergarten students. I walked into the classroom at the set time the teacher and I decided upon, introduced myself, and walked around the class pulling one student from each table group. Due to the way the class was set up, I held this focus group in the school's Media Center, not the classroom. The students in this focus group were very eager to share their opinions and had a lot to say about how they felt on the subjects; this focus group was very fun and endearing.

Of the four second grade students in the focus group, three enjoy handwriting and one does not. The three who enjoy handwriting do so because they feel handwriting is fun,



especially when making the letters look nice, and because they feel writing in general is fun; when handwriting, writing can be done where ever and whenever. The student who does not like handwriting feels this way because it hurts his/her hand after writing for a while. Three of the students prefer keyboarding to handwriting, while one student prefers handwriting. The students who prefer keyboarding said they felt this way because typing is not as messy as handwriting and pressing a key is faster than writing out letters. The student who prefers handwriting stated that typing is confusing and he/she would rather look down at paper than up at a computer screen.

Two students like touch screens because they are modern and less noisy, while the other two students feel they are too sensitive and small. Three of the students want to learn cursive because it looks fancy and fast. They also said that it looks as if the person is simply gliding a pencil on the page, they do not have to pick up their pencil. The student who does not want to learn cursive thinks it looks like scribble scrabble, and is afraid that is (s)he learns it, he/she will forget how to write normally (print). The following table shows the results of the second grade focus group.

Table 9: Second Grade Focus Group Results

<b>Second Grade Student</b>	<b>Prefers Handwriting</b>	<b>Prefers Keyboarding</b>	<b>Wants to learn cursive</b>	<b>Does not want to learn cursive</b>
2.1		x		x
2.2		x	x	
2.3		x	x	
2.4	x		x	

*Third Grade*

The following table shows the discussion notes from the third grade focus group.

Table 10: Third Grade Discussion Notes

<b>Student</b>	<b>Discussion Notes</b>
3.1	Does not enjoy handwriting - boring and hurts hand; thinks (s)he is an okay hand writer - not the best; prefers typing on a keyboard - does not make hand tired; practices handwriting at home; likes touch screens, but prefers keyboard - no keys to press; wants to learn cursive because older sister uses it
3.2	Does not enjoy handwriting - makes hand tired after a while; does not practice handwriting - why it looks bad; prefers keyboarding - likes to physically press the buttons to know it worked; does not like touch screen - does not know if (s)he presses anything; wants to learn cursive because it is fancy and looks better than print
3.3	Enjoys handwriting - even though a strange pencil grip is used; tries to write slow and neat to read the letters; thinks typing is hard, but will get better with practice; thinks handwriting is better because it is easier to remember how to make the letters than where the keys are located on a keyboard; likes touch screen better than keyboarding because one finger can be used - prefers handwriting; excited to learn cursive - will make

	writing easier because it is so quick; with more practice, it will get better
3.4	Enjoys handwriting - if had to be done for a grade, (s)he would do great because (s)he can do it right; makes him/her happy when people tell him/her (s)he has nice handwriting; does not enjoy keyboarding - would much rather handwrite; takes a long time to find keys on a keyboard; does not like touch screens; excited to learn cursive - will be able to write fancy and learn another way to write; does not practice handwriting

The four third grade students I spoke with were not randomly selected. These four students were selected by the teacher because each one has a specific link to handwriting. Student 1 receives occupational therapy for handwriting. Student 2 is left-handed. Student 3, according to the teacher, holds his/her pencil with a strange grip. Student 4, also according to the teacher, has the best handwriting in the class. When I held the focus group at the back table of the room, the students were not told why they were selected to join the group; the teacher made the selections appear random.

Of the four third grade students I met with, two of them enjoy handwriting and two do not. The two who enjoy handwriting agreed that handwriting is fun and easier than finding keys on a keyboard. One of the students said (s)he loves it when he/she receives compliments on his/her handwriting, as it feels good and makes him/her want to practice handwriting and get even better. The two students who said they do not enjoy handwriting agreed that it is boring

and hurts their hands after a while. One of these students said he/she does not practice handwriting, which is why it looks bad.

The two students who enjoy handwriting prefer handwriting to typing on a keyboard, and the two students who do not enjoy handwriting prefer typing on a keyboard to handwriting. None of the four students prefer touch screens as their choice for writing. On the other hand, all four students are excited to learn cursive and are looking forward to it. One student wants to learn it because an older sibling knows it. They all agreed that cursive looks more fancy and quick than print, and liked the idea that they can learn another way to write. The following table shows the results of the third grade focus groups.

Table 11: Third Grade Focus Group Results

<b>Third Grade Student</b>	<b>Prefers Handwriting</b>	<b>Prefers Keyboarding</b>	<b>Wants to learn cursive</b>	<b>Does not want to learn cursive</b>
3.1		x	x	
3.2		x	x	
3.3	x		x	
3.4	x		x	

Based upon the results gathered, for each of the four students in each grade level, no trends immediately appear. All four of the kindergarten students prefer keyboarding, and all four do not know what cursive is, so no views or opinions can be expressed on the topic. Of the first grade students, three prefer handwriting to keyboarding, and the same three students want to learn cursive. The lone student that prefers keyboarding does not want to learn cursive. In second grade, one student prefers handwriting and three students prefer keyboarding; three want to learn cursive, and one does not. The student who does not want to learn cursive prefers

keyboarding. In third grade, two students prefer handwriting, and two prefer keyboarding; all four students want to learn cursive.

Out of all 16 students across all four grade levels, six prefer handwriting and 10 prefer keyboarding, showing a favor to keyboarding. The interesting bit of information that can be concluded from this small sample size is that only two students, out of a total of 12 (excluding the four kindergarteners whom are not familiar with cursive), do not want to learn cursive. Of the 12 students who do want to learn cursive, 6 prefer handwriting, and 6 prefer keyboarding. When taking this data into consideration, there is no apparent trend between preference to handwriting or keyboarding on the desire to learn cursive. It seems as if the decision comes down to each students' own personal preference on the subject.

Although the sample size is significantly limited, if this same ratio was applied to a larger sample size, the vast majority of students would show a preference to keyboarding over handwriting. This information is key for teachers and other educators to know simply due to the fact that technology is becoming more and more prevalent in the classroom. In the next couple of decades, it is quite possible for keyboarding to permanently replace all forms of handwriting, including cursive. Although the majority of students prefer keyboarding to handwriting, an even greater majority of students still want to learn cursive, including some of the students who prefer keyboarding. The question that can be formed from this information is whether or not the growing trend and convenience of technology use in the classroom outweighs the developmental benefits that handwriting provides for students.

### **Teacher Views versus Student Views**

Overall, the participating K-3 teachers found handwriting instruction and keyboarding instruction in the classroom equally important. Out of the 17 participating teachers, 13 feel this way. When dealing with their views on the continuation of cursive in the classroom, 16 teachers feel that it should continue being taught. Out of the 16 participating students, the majority (10) prefer keyboarding. Out of the 12 students who have heard of cursive before, 10 want to learn it. When comparing these teacher and student views together, the conclusion that can be drawn is that the teachers feel there is an equal importance on handwriting and keyboarding instruction in the classroom, but the students prefer when the focus is on keyboarding. In regard to cursive, the teachers feel that it should continue being taught. The students still want to learn how to write in cursive, even though they prefer keyboarding. Therefore, cursive should continue to be taught in classrooms, providing both teachers and students with a sense of fulfillment.

## **CHAPTER FIVE: CONCLUDING REMARKS**

The comprehensive purpose of this thesis was to examine the current perceptions of K-3 elementary school teachers, and their students, in regard to handwriting instruction in the modern day classroom. While examining these varying views through the use of teacher surveys and student focus groups, the goal was to see if there was any trend in the data to suggest one view was stronger than another. Furthermore, there was an intention to link together the teacher views and student views to see if the teacher views expressed the preference of the students. Apart from just the views on handwriting instruction, a closer look at cursive in the classroom was also explored, as cursive is no longer as relevant to education as it once was.

### **Limitations**

The most prominent limitation to this study is the sample size from both the teacher participants with the survey and the amount of students in the focus groups. Although the survey was sent to 30 teachers, only 17 responded and completed it. No follow up was exercised to amend this. Due to this, all the data collected represents just over half of the K-3 teachers at the school, and only a miniscule portion of all K-3 elementary school teachers. The conclusions drawn cannot be generalized for all K-3 teachers, as there is simply not an adequate amount of data to represent the majority. This same limitation holds true for the student opinions from the focus groups. Out of all K-3 students, only a total of 16 were included in the study, so no generalizations can be made.

Apart from the number of student participants, another limitation that is derived from the research design is the limited questions asked of the students. Because the students were pulled

during class time to participate in the focus groups, I did not want to keep them away from the class for too long. Therefore, the focus group time lasted between 15 and 20 minutes. Although the students were allowed to say anything they wanted during our time together, only five prompting questions were asked: 1) Do you enjoy handwriting? 2) Do you like keyboarding? 3) Which do you prefer, handwriting or keyboarding? 4) How do you feel about typing on touch screens? 5) Have you heard of cursive before? Had I more time readily available, I would have delved deeper into their minds to get a better sense of why they felt a certain way about handwriting or keyboarding. Also, for the kindergarten and first grade students in particular, it was sometimes a bit hard for them to express their opinions, as they did not have the vocabulary nor understanding necessary to do so; they are still so young. The statements they made could have been said as a direct result of my prompting, creating a sense of bias in their words.

### **Educational Implications**

Due to the advancement of technology and its prevalence in modern day classrooms, many consider handwriting, particularly cursive, a dying art, with keyboarding taking its place. However, research has proven that handwriting provides students with developmental benefits and helps to refine certain motor skills that keyboarding does not. There is no doubt, however, that keyboarding will continue to be taught to students, perhaps even emphasized, as technology continues to progress. This shift in education is already begun with the introduction of the new Florida Standards Assessment (FSA), which is all computer-based. The most alarming part is that all written responses must now be typed, indicating that students must have keyboarding skills.



Presently, handwriting is not completely irrelevant. Students still write everyday both in the classroom and outside of it, leaving the door open for teachers to help refine their skills. As an intern in a fifth grade classroom, I am able to see firsthand the difference in writing skills between a student who has neat handwriting, and a student who does not. The students with neater handwriting are typically more organized in their writings and more confident in their abilities. The students with less neat handwriting typically jot down what comes to their mind without organizing their thoughts as clearly. My students receive 20 minutes of direct keyboarding instruction each week, but no instruction dedicated solely to handwriting. If my students, and all students in general, received 20 minutes of direct handwriting instruction each week, the results could yield a huge benefit on their writing abilities.

On the other hand, it is also important to take into the consideration the views and opinions of the K-3 teachers and students. If the majority of K-3 teachers do feel that both handwriting instruction and keyboarding instruction are equally important, as the small sample size from this research project suggest, then emphasis should be placed on both equally. The slight majority of students prefer keyboarding over handwriting, but they might not be aware of all the benefits handwriting provides, from physical to cognitive gains. Nearly all teachers feel that cursive handwriting, in particular, should continue to be taught. The vast majority of students have a desire to learn cursive. Cursive provides its own set of unique benefits for students, aspects the K-3 teachers are well aware of. These benefits include a link with the past, as many documents throughout history are written in cursive, as well as the ability to write faster, an asset that students will immensely appreciate as they grow older.

### **Future Research**

To expand upon this research and gain a better understanding of the current perceptions of handwriting and keyboarding instruction in the modern day classroom, teachers of all grade levels should be surveyed, including middle school and high school. It would be fascinating to see if whether or not the views that both handwriting and keyboarding instruction are equally important remain the same the higher the grade gets. Teachers in the upper grades spend their time with students who have generally already learned to write and type. Based upon the assignments and projects they assign, their views might be more in favor of keyboarding instruction being more important.

In high school, many students complete such assignments and projects on computers and laptops. Likewise, many students in today's classrooms take notes on their own personal laptops during class. It would be interesting to know if they actually prefer keyboarding to handwriting, or if it is just more convenient. This can be accomplished by sending out a survey to students, not just the teachers.

Many of the K-3 teachers who completed the survey for this research projected stated that cursive is an important life skill that should continue to be taught to students. An additional survey can be conducted to survey how much established adults use cursive during their everyday lives and jobs. The participant pool can be varied to encompass a variety of different professions, as cursive might be more prominent in certain fields.

## Lessons Learned

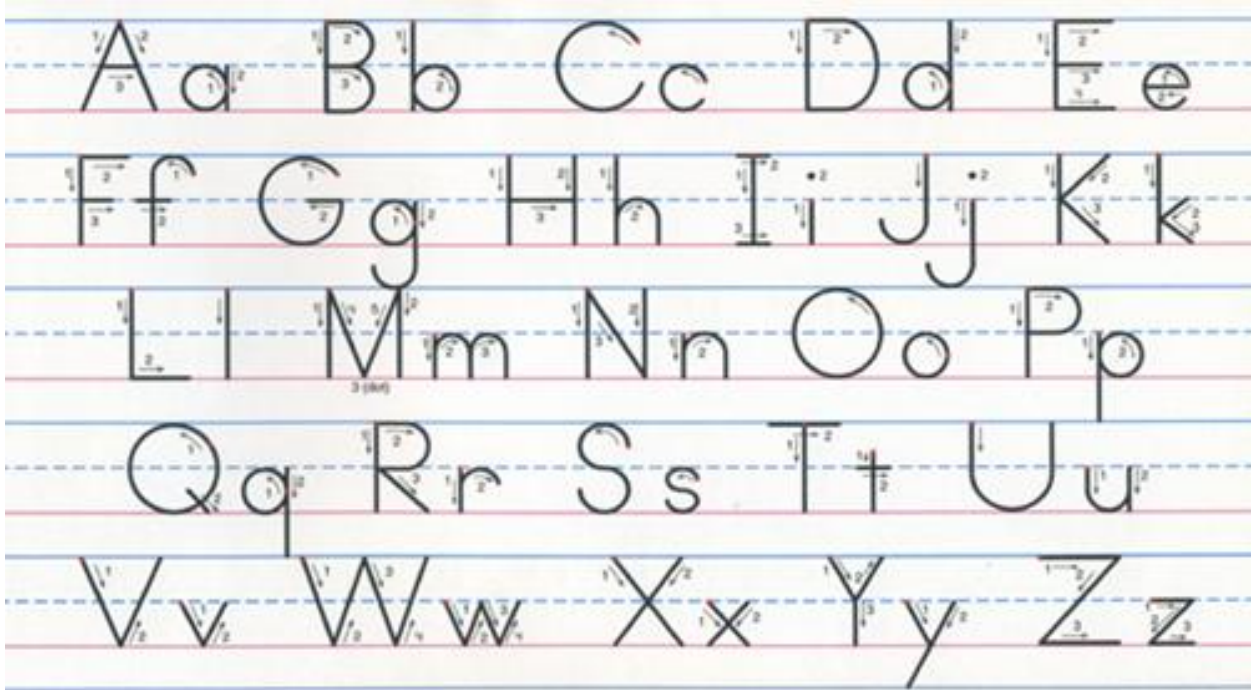
After embarking on this long journey, I learned several aspects as to how a research project of this magnitude is planned, conducted, reviewed, and presented. Everything I learned is invaluable and something I will cherish for the rest of my life. Apart from this actual process, I learned about the impact technology is having on education and why there is a switch of focus from traditional practices to more modern practices, a movement that will likely continue to happen in the coming future as technology continues to advance at a rapid pace. The way children learn today is vastly different than it was twenty years ago, just like it will be vastly different twenty years from now than it is today.

I learned about the benefits handwriting can provide for students if sufficient instruction is provided. All the motor skills and cognitive gains children acquire from handwriting instruction are unparalleled and cannot likely or easily be achieved through other methods during a child's developmental phase. Speed and fluency, both key contributors of handwriting legibility, are linked to this success because students are able to get their thoughts onto paper more efficiently.

The importance of both teacher and student opinions regarding handwriting and keyboarding is also a huge take away from this research project. Much of the emphasis on studies regarding education is placed on the teachers' thoughts and opinions. While vital to the research, the students' are just as much affected by changes in education; their thoughts and opinions are significant as well, and help to offer insight that may not have been viewed before.

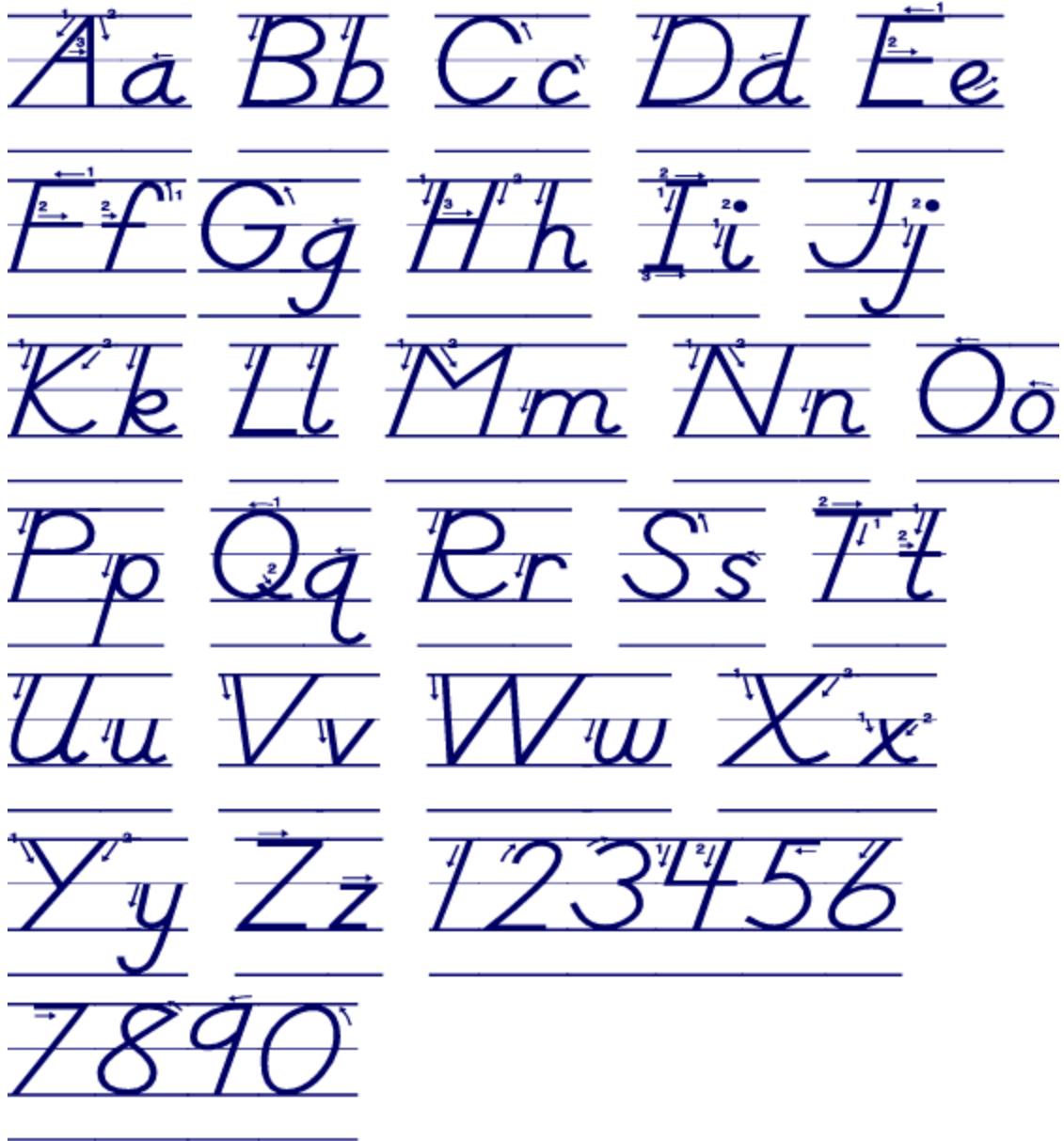
**APPENDIX A: MANUSCRIPT ALPHABET LETTERS**

**Appendix A: Manuscript Alphabet Pictures**



## **APPENDIX B: D'NEALIAN ALPHABET LETTERS**

Appendix B: D'Nealian Alphabet Letters



## **APPENDIX C: CURSIVE ALPHABET LETTERS**



Appendix C: Cursive Alphabet Letters

Aa Bb Cc Dd Ee  
Ff Gg Hh Ii Jj  
Kk Ll Mm Nn Oo  
Pp Qq Rr Ss Tt Uu  
Vv Ww Xx Yy Zz

**APPENDIX D: IRB APPROVAL LETTER**

## Appendix D: IRB Approval Letter



University of Central Florida Institutional Review Board  
Office of Research & Commercialization  
12201 Research Parkway, Suite 501  
Orlando, Florida 32826-3246  
Telephone: 407-823-2901 or 407-882-2276  
[www.research.ucf.edu/compliance/irb.html](http://www.research.ucf.edu/compliance/irb.html)

### Approval of Human Research

**From:** UCF Institutional Review Board #1  
FWA00000351, IRB00001138

**To:** Sherron E. Roberts and Co-PI: Kimberly Kolb

**Date:** March 13, 2015

Dear Researcher:

On 3/13/2015 the IRB approved the following human participant research until inclusive:

Type of Review: Submission Response for UCF Initial Review Submission Form  
Expedited Review

Project Title: Examining the Current Perceptions of K-3 Elementary School  
Teachers, and Their Students, in Regard to Handwriting  
Instruction in the Modern Day Classroom

Investigator: Sherron E. Roberts

IRB Number: SBE-14-10581

Funding Agency:

Grant Title:

Research ID: n/a

The scientific merit of the research was considered during the IRB review. The Continuing Review Application must be submitted 30 days prior to the expiration date for studies that were previously expedited, and 60 days prior to the expiration date for research that was previously reviewed at a convened meeting. Do not make changes to the study (i.e., protocol, methodology, consent form, personnel, site, etc.) before obtaining IRB approval. A Modification Form **cannot** be used to extend the approval period of a study. All forms may be completed and submitted online at <https://iris.research.ucf.edu>.

If continuing review approval is not granted before the expiration date of , approval of this research expires on that date. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

Use of the approved, stamped consent document(s) is required. The new form supersedes all previous versions, which are now invalid for further use. Only approved investigators (or other approved key study personnel) may solicit consent for research participation. Participants or their representatives must receive a copy of the consent form(s).

All data, including signed consent forms if applicable, must be retained and secured per protocol for a minimum of five years (six if HIPAA applies) past the completion of this research. Any links to the identification of participants should be maintained and secured per protocol. Additional requirements may be imposed by your funding agency, your department, or other entities. Access to data is limited to authorized individuals listed as key study personnel.

In the conduct of this research, you are responsible to follow the requirements of the [Investigator Manual](#).

On behalf of Sophia Dziegielewska, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

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Signature applied by Patria Davis on 03/13/2015 10:31:05 AM EDT

IRB Coordinator

## **APPENDIX E: TEACHER SURVEY**

## Appendix E: Teacher Survey

1. How long have you been teaching?

0-4 years   5-9 years   10-14 years   15-19 years   20+ years

2. What grade level are you currently teaching?

Kindergarten   First   Second   Third

3. Have you ever taught a grade higher than third?

Yes   No

4. If you answered yes to the previous question, please indicate the grade(s) taught.

None   Fourth   Fifth   Sixth   Seventh   Eighth   High School

5. When you were a student in elementary school, were you explicitly taught  
handwriting?

Yes   No   I'm not sure!

6. In your teacher preparation programs, were you given instruction on how to teach  
handwriting?

Yes   No   I'm not sure!

7. How much time do you spend on handwriting instruction during a typical week?

None (I wish I had time!) Less than 20 minutes 20-40 minutes 40-60 minutes

More than 60 minutes

8. If more than 60 minutes per week, please indicate how many additional minutes (If no additional minutes, please write 0).

\_\_\_\_\_ additional minutes per week

9. If you spend time on handwriting instruction, is it specifically allocated in your schedule, or do you include it during another curriculum time?

Allocated in schedule Included during another curriculum I wish I had time!

10. Do you currently teach cursive handwriting in your classroom?

Yes No My students are too young!

11. Do you think cursive handwriting should continue to be taught to students?

Yes No

12. Please state why or why not in the space below!

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13. Do you think handwriting instruction in the classroom is more important than

keyboarding instruction in today's technology era?

Yes No I'm not sure

14. Please state why or why not in the space below!

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## **APPENDIX F: STUDENT FOCUS GROUP PROTOCOL**

## **Appendix F: Student Focus Group Protocol**

1. Do you enjoy handwriting? Why or why not?
2. Do you like keyboarding (typing on a keyboard)? Why or why not?
3. Which do you prefer, handwriting or keyboarding?
4. How do you feel about typing on touch screens?
5. Have you heard of cursive before? If you have, do you want to learn it?

## REFERENCES

- Asher, V. A. (2006). Handwriting instruction in elementary schools. *The American Journal of Occupational Therapy, 60*, 461-471.
- Benbow, M. (Eds.). (1995). *Principles and practices of teaching handwriting*. St. Louis, MO: Mosby.
- Berninger, V. W., Vaughan, K.B., Abbott, R.D., Abbott, S.P., Rogan, L., Brooks, A., & Graham, S. (1997). Treatment of handwriting problems in beginning writers: Transfer from handwriting to composition. *Journal of Educational Psychology, 89*(4), 652-666.
- Christensen, C. A. (2009). The critical role handwriting plays in the ability to produce high-quality written text. *The SAGE handbook of writing development, 284-299*.
- Connelly, V., Gee, D., & Walsh, E. (2007). A comparison of keyboarding and handwritten compositions and the relationship with transcription speed. *British Journal of Educational Psychology, 77*(2), 479-492.
- Cravens, J. (2004). Is teaching cursive writing a waste of time? It motivates students to learn. *American Teacher, 88*(6), 4.
- Exner, C. E. (Eds.). (1989). *Development of hand functions*. St. Louis, MO: Mosby.
- Feder, K .P., & Majnemer, A. (2007). Handwriting development, competency, and intervention. *Developmental Medicine & Child Neurology, 49*(4), 312-317.
- Graham, S. (2010). Want to improve children's writing? Don't neglect their handwriting. *Education Digest, 76*(3), 49-55.

- Graham, S., Berninger, V. W., Abbott, R. D., Abbott, S. P., & Whitaker, D. (1997). Role of mechanics in composing of elementary school students: A new methodological approach. *Journal of Educational Psychology, 89*(1), 170-182.
- Graham, S., Berninger, V., & Weintraub. (1998). The relationship between handwriting style and speed and legibility. *Journal of Educational Research, 91*(5), 290-296.
- Graham, S., Harris, K., & Fink, B. (2000). Is handwriting causally related to learning to write? Treatment of handwriting problems in beginning writers. *Journal of Educational Psychology, 92*(4), 620–633.
- Graham, S., Harris, K. R., Mason, L., Fink-Chorzempa, B., Moran, S., & Saddler, B. (2008). How do primary grade teachers teach handwriting? A national survey. *Reading & Writing, 21*(1/2), 49-69.
- Graham, S., & Weintraub, N. (1997). A review of handwriting research: Progress and prospects from 1980-1994. *Educational Psychology Review, 8*, 7-87.
- Graham, S., & Weintraub, N. (1998). The relationship between handwriting styles and speed and legibility. *The Journal of Educational research, 91*(5), 290-297.
- Hyde, R., Edwards, J., & Jones, K. (2014). Working with trainee teachers on their use of digital technologies in the classroom. *Mathematics In School, 43*(3), 5-8.
- Jones, D., & Christensen, C. A. (1999). Relationship between automaticity in handwriting and students' ability to generate written text. *Journal of Educational Psychology, 91*(1), 44-49.
- Jones, C., & Hall, T. (2013). The importance of handwriting: Why it was added to the Utah Core Standards for English language arts. *The Utah Journal of Literacy, 16*(2), 28-36.

- Kamm, K., Thelan, E., & Jensen, J.L. (1990). A dynamic systems approach to motor development. *Physical Therapy, 70*(12), 763-775.
- Kushki, A., Schweltnus, H., Ilyas, F., & Chau, T. (2011). Changes in kinetics and kinematics of handwriting during a prolonged writing task in children with and without dysgraphia. *Research in Developmental Disabilities, 32*(3), 1058-1064
- Lienemann, T. O., Graham, S., Leader-Janssen, B., & Reid, R. (2006). Improving the writing performance of struggling writers in second grade. *The Journal of Special Education, 40*(2), 66-78.
- Longcamp, M., Zerbato-Poudou, M., & Velay, J. (2005). The influence of writing practice on letter recognition in preschool children: A comparison between handwriting and typing. *Acta Psychologica, 119*, 67–79.
- Marr, D., & Cermak, S. (2003). Consistency of handwriting in early elementary students. *The American Journal of Occupational Therapy, 57*(2), 161-167.
- Medwell, J., & Wray, D. (2007). Handwriting: What do we know and what do we need to know?. *Literacy, 41*(1), 10-15.
- McPake, J., & Plowman, L., & Stephen, C. (2013). Pre-school children creating and communicating with digital technologies in the home. *British Journal of Educational Technology, 44*(3), 421-431.
- Montgomery, D. (2012). The contribution of handwriting and spelling remediation to overcoming dyslexia. Retrieved from: <http://cdn.intechopen.com/pdfs-wm/35808.pdf>

- Prensky, M. (2001). Digital natives, digital immigrants. *On the Horizon*, 9(5), 1–6.
- Puranik, C. S., & Alotaiba, S. (2012). Examining the contribution of handwriting and spelling to written expression in kindergarten children. *Reading and Writing*, 25(7), 1523-1546.
- Rogers, J., & Case-Smith, J. (2002). Relationships between handwriting and keyboarding performance of sixth-grade students. *The American Journal of Occupational Therapy*, 56, 34-39.
- Stevenson, N., & Just, C. (2014). In early education, why teach handwriting before keyboarding?. *Early Childhood Education Journal*, 42(1), 49-56.
- Supon, V. (2009). Cursive writing: Are its last days approaching?. *Journal of Instructional Psychology*, 36(4), 357-359.
- Thurber, D. N. (1995). D'Nealian handwriting versus circle-stick print. Retrieved from <http://files.eric.ed.gov/fulltext/ED381911.pdf>
- Troia, G., & Olinghouse, N. (2013). The Common Core State Standards and evidence-based educational practices: The case of writing. *School Psychology Review*, 42(3), 343-357.
- Tseng, M. H., & Cermak, S.A. (1993). The influence of ergonomic factors and perceptual–motor abilities on handwriting performance. *The American Journal of Occupational Therapy*, 47(10), 919-926.
- Uecker, R., Kelly S., & Napierala, M. (2014). Implementing the Common Core State Standards. *Knowledge Quest* 42(3), 48-51.
- Vreeland, E. (1999). Teaching teachers to teach handwriting. *OT Week*, 13, 8–9.
- Xiaoqing, X., & Yuankun, Z., & Xiaofeng, G. (2013). Meeting the “Digital Natives”:

Understanding the acceptance of technology in the classroom. *Journal of Educational Technology & Society*, 16(1), 392-402.

Zubrzycki, J. (2012). Experts fear handwriting will become a lost art. *Education Week*, 31(18), 1-13.