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Cursive Handwriting with Kindergartners

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St. Catherine University

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Advisor _____

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Cursive Handwriting with Kindergartners

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Abstract

This action research studied the impact of Handwriting Without Tears® (HWT) cursive instruction on handwriting skills for kindergarten students. The study occurred in an early childhood (ages 3-6) classroom at a private Montessori school. Eight students received multisensory HWT cursive instruction twenty minutes per day for six weeks. Sources of data included participant print and cursive writing samples analyzed with a rubric, HWT print assessments, scored attitude scales of participants' feelings about handwriting, a tally sheet of writing works chosen, and a teacher journal. Following the intervention, participants' scored higher on the HWT assessment, especially in the section regarding correct orientation. Cursive and print writing sample scores also improved. Participants' feelings about looking at their handwriting increased. Since HWT cursive instruction improved students' print and cursive, I will use HWT print and cursive curriculum in my classroom, give kindergartners regular HWT print assessments, and remediate as necessary.

Keywords: handwriting, cursive, print, Montessori, kindergarten, Handwriting Without Tears®, multisensory

As a Montessori early childhood guide for students from ages three through six, I have observed a decline in handwriting skills in recent years. However, Montessori students engage in multiple pre-writing activities such as the sandpaper letters, metal inset stencils, and transfer works that Montessori designed to develop fine motor skills and the pincer or tripod grasp (Lillard, 2011). Although my students work with Montessori materials which prepare them to write, I began to wonder if this was a problem just for my students.

Kindergarten students in my classroom cannot consistently write lower case manuscript letters from memory with proper placement, direction, spacing and alignment. They practice handwriting often and receive individual instruction. However, group handwriting instruction is limited and our school uses no set handwriting curriculum. Instead, we use workbooks produced by our school and instruction techniques are determined by individual teachers. I became concerned about cursive instruction in January, when their printing skills displayed problems.

My research took place in a private Montessori school located in a suburban area in the southeastern United States. In January, kindergartners at my school began cursive instruction for the first time. We use cursive workbooks created by our school. I wanted to examine how using a handwriting curriculum in addition to the Montessori cursive sandpaper letters and cursive moveable alphabet (Appendix G) would impact my participants' transition into cursive writing. My research question was, will six weeks of direct instruction and practice using the multi-sensory Handwriting Without Tears® cursive curriculum significantly improve the handwriting skills of kindergarten students in a Montessori classroom?

I used specific blocks of time for instruction and practice for 20 minutes a day during a six-week period using the Handwriting Without Tears® (HWT) cursive curriculum. Students engaged in multi-sensory activities, used multiple writing utensils, and received cursive instruction using traditional Montessori writing materials.

The students received Montessori cursive presentations on the sandpaper letters and moveable alphabet during the morning work cycle. They used the HWT curriculum during the afternoon kindergarten enrichment period while they sat at a long table together as a group. My kindergarten students are four girls and two boys. Two five-year-old Pre-K students, a boy and a girl, joined our cursive instruction time during the morning and afternoon because they demonstrated readiness in their writing and reading abilities.

Literature Review

Many handwriting difficulties are present in students (Berninger et al., 1997; Graham, Harris, & Fink, 2000) and problems can include placement on the line, spacing, reversals, letter formation, etc., or a number of these in combination (Graham et al., 2008). Students who have sensory issues, perception problems, and processing difficulties are likely to have handwriting problems because the systems for motor movement, the senses, and vision are not fully integrated and working together (Keller, 2001).

One possible explanation for increased difficulties in handwriting is that students spend less time using their fine motor skills and all of their senses. Students use spend more time engaging with technology such as smart phones, tablets, computers, video games, and television. While useful, these devices involve primarily the visual sense, and

while the sense of touch is involved, these gadgets do not integrate fine motor skills with visual perception. Children spend more time using technology now than ever before, according to a 2010 Kaiser Foundation study which reported that 8-18 year-olds “spend, on average, 53 hours a week immersed in various kinds of technology” (Herman, 2012, p. 36).

As schools began to emphasize the use of computers and technology, cursive handwriting was been eliminated from many traditional public schools across the country in recent years (Baker, 2013;Konnikova, 2014; Smith, 2014). Teachers and administrators believed it was unnecessary and keyboarding would make cursive, and handwriting in general, obsolete (Konnikova, 2014; Stevenson & Just, 2012). Currently, more educators are questioning the removal of cursive and handwriting instruction from the Core Curriculum in response to the growing attention to studies that have shown the importance of handwriting skills for academic success (Konnikova, 2014). Tennessee passed legislation to reinstate cursive instruction beginning in the second through fourth grades during the 2015-2016 school year, making my research well-timed (Smith, 2014).

Studies have shown that multi-sensory activities increase handwriting abilities (Case-Smith et al., 2012; Keller, 2001; Lust & Donica, 2011). These methods work because handwriting involves visual, motor, sensory, and attention systems working together properly (Case-Smith et al., 2012; Feder & Majnemer, 2007; Lust & Donica, 2011). Members of Keller’s (2001) third and fourth-grade handwriting club who experienced sensory integration activities and direct handwriting instruction using Handwriting Without Tears® improved their cursive handwriting. Lust and Donica

(2011) also examined the implementation of HWT and multi-sensory work to augment Head Start curriculum and found students' handwriting greatly improved.

An occupational therapist designed Handwriting Without Tears®, which incorporates “multisensory activities,” (Case-Smith et al., 2012, p. 561) much like activities found in Montessori classrooms. Keller (2001) used HWT in a cursive handwriting club for boys with behavior disorders and handwriting problems. She used sensory integration components including music, gross-motor movements, scented markers, verbal prompts to describe letter formation, clay, chalk, sand trays, and direct instruction to help her students improve their handwriting skills.

HWT differs from most other handwriting programs because it only uses two solid lines to help the student avoid being confused about letter placement on the line. Vertical cursive letters (Appendix H) are written with straight up and down strokes instead of slanted to help students make the transition from print to cursive (Case-Smith et al., 2012; Olsen & Knapton, 2013). HWT may be a natural choice for Montessori schools precisely because of its multisensory emphasis and utilization of materials such as chalkboards, hands-on activities like forming letters with wood pieces, and using multiple writing utensils (Carlson, 2009). However, I found no published studies available that examined HWT in a Montessori environment.

Daily instruction using the HWT curriculum may bring my participants greater success with cursive handwriting and also print, because the continuous flow of cursive without lifting the hand makes writing faster (Olsen & Knapton, 2013). Cursive writing has been shown to improve reading and limit letter reversals because of the complexity of forming the letters (Baker, 2013). Handwriting curricula, multi-sensory activities, and

regular direct instruction of handwriting can improve students' handwriting skills (Case-Smith, Holland, Lane, & White, 2012; Keller, 2001; Lust & Donica, 2011).

In Montessori classrooms, students build their language skills through sensory integrated movement by tracing the sandpaper letters and spelling with the movable alphabet (Lillard, 2005). Guides also use the metal insets, sand trays, chalkboards, dry-erase marker boards, and lined paper for writing. Montessori observed that children who used the materials were prepared to write and developed this skill in what she described as a "natural phenomenon" (Montessori, 1966a, p. 97). Montessori also noted that children who learned to write at the age of four learned more easily than those who were six (Montessori, 1966b). Perhaps kindergarten instruction in cursive would be more beneficial to students than waiting until age eight or nine to begin. A medical doctor and anthropologist, Montessori understood the brain and the hands work together a century before technology allowing brain scans were possible and education research was widely available via the worldwide web.

Research links handwriting skills and better academic performance (Cahill, 2009; Feder & Majnemer, 2007; Fogo, 2008; Lust & Donica, 2011). Good handwriting skills lead students to be better readers and clearer writers. Handwriting practice aids automatic writing to free up cognitive space for composition (Berninger et al., 2006; Cahill, 2009). Additionally, students with poor handwriting tend to be poor readers (Feder & Majnemer, 2007; Puranik & Alotaiba, 2012). Reading skills improved when handwriting skills improved (Berninger et al., 2006; Stevenson & Just, 2012).

Education researchers have found a link between handwriting and academic outcomes, and brain research has reached the same conclusions. When students write by

hand, the brain recognizes the movement of the hand while writing, and this neural link imprints the memory, making learning language easier (Konnikova, 2014). Current neurological research provides support for keeping handwriting as part of the Common Core curriculum. Writing by hand, as opposed to tracing letters or typing on a keyboard, stimulates brain circuits responsible for reading (James & Engelhardt, 2012). This “reading circuit” in the brain activated and researchers observed it with MRI technology following a handwriting exercise, which provided evidence that handwriting helped students learn language in a way technology did not.

Researchers discovered that regular practice, particularly blocked practice, which provides handwriting lessons structured in the same order each time in the beginning stages of writing, improved handwriting skills (Asher, 2006; Cahill, 2009). Direct and focused instruction may occur for short periods of time each day and impact the writing of students (Cahill, 2009; Graham, 2010). Good handwriting skills are linked to improved academic outcomes, increased complexity of written compositions, and reading fluency (Berninger et al., 2006; Cahill, 2009; Case-Smith et al., 2012; Stevenson & Just, 2012).

Research has proven that handwriting skills strengthen cognitive ability and school performance when it is taught correctly. The circumstances in my classroom and the literature on the subject guided me to pursue this topic. Montessori wrote about the importance of the hand. “His hands under the guidance of his intellect transform this environment and thus enable him to fulfill his mission in the world” (Montessori 1966b, p. 81). This research further explores early, purposeful cursive instruction. My action research collected data on cursive writing with kindergartners using a multi-sensory handwriting curriculum, direct instruction, traditional Montessori writing lessons, and

regular handwriting practice. The Handwriting Without Tears® cursive curriculum was the best approach for my study based on the goals of my research.

Description of Research Practices

I conducted my research in a private Montessori school setting in an early childhood classroom for ages three to six years. Kindergartners and preschool students were in the same room throughout the day. The classroom had a total of 25 students including kindergartners. I gave cursive instruction to all kindergarten students and two students who exhibited readiness for cursive. All students were five or six years old. Five girls and three boys formed the group of eight participants.

During the morning work time, all students in the room chose writing or pre-writing works that they had been presented, according to their readiness for the material. The students learning cursive received Montessori presentations on the cursive sandpaper letters, cursive moveable alphabet, and writing in cursive on chalkboards during the morning work cycle. They also chose these works on their own and practiced writing cursive on marker boards and chalkboards, as well as tracing and writing in cursive on paper. They were not required to write in cursive and had the option to print.

Cursive handwriting instruction in my classroom is conducted in the same manner each year, so this action research was part of my normal classroom instruction. Cursive workbooks made and used by my school were traditionally used for handwriting instruction. However, I introduced HWT cursive curriculum during my action research. Following the completion of the HWT instruction, I used my school's workbooks to continue the participants' cursive work so they would get the same instruction as their peers in other classrooms. Formal handwriting instruction using the HWT third grade cursive handwriting workbook took place during afternoon kindergarten enrichment time.

I used this level because it was the level when cursive instruction first takes place for students in traditional schools. The majority of the participants were reading the words they practiced writing in the workbook. For the others, it was good exposure to new words and they were not required to read them in order to practice writing them. The instruction and practice time lasted approximately twenty minutes each day for a span of six weeks.

During handwriting instruction, the students sat at a long table together as a group. Tactile and kinesthetic learning were used via the sandpaper letters and air writing respectively. I demonstrated the letter or letters learned that day by tracing the sandpaper cursive letter and passing it to each child to trace with his or her index and pointer fingers. I showed the starting point to begin tracing, which was at the bottom left of the letter. Each student said the letter name and its phonetic sound when tracing. I watched as the students traced the letter and corrected if necessary. I wrote the letter in the air facing away from the participants so they could see the exact direction and then invited the students to join me.

Next, I formed the letter slowly on the marker board or chalkboard easel, and described the movements with the words prescribed by HWT. Auditory and visual learning took place because I verbally described the movements of the hand with repetitive words. For example, when I described writing two joined letters of “c”, I said, “Magic c, bump the line; travel on the line, slide up and over; come back, make a new c.” Formation of the letter “d” (and others) was explained, “Magic c, bump the line; up like a helicopter; up higher; slide down, bump, travel away.” Other tall letters use the same wording “up like a helicopter...travel away” (Olsen & Knapton, 2013, p. 54). I wrote the

letter again using the descriptions of hand movements, but this time with a pencil on a handwriting sheet clipped to the easel. Finally, I distributed the paper to the students, and viewed as they traced the letter. They worked on writing and tracing the letter and words on the sheets while I moved to each student to give feedback and assistance.

Each student learned how to write his or her name and had a cursive name card to use as an example. The students wrote their names on each workbook page before I collected the workbooks. Some students finished, while others needed additional help. Those who finished did other activities such as tracing cursive letters with markers, writing on chalkboards or marker boards, or doing a non-writing work. I used this time to help the students who needed more assistance and invited them to stop when they were felt tired. Most participants completed the entire practice page, however, students were not required to do. Instruction and practice time were limited to twenty minutes to avoid strain and fatigue. Those who did not finish were trying their best and I allowed them to choose to complete their work later if they chose to do so. Allowing students to choose work is a crucial component of the Montessori method and I aligned my instruction with authentic Montessori practices.

Several types of data tools were used to examine the impact HWT curriculum had on the handwriting of students. The data collection tools consisted of print and cursive handwriting samples, the HWT Print Screening Tool assessment (Appendix B), attitude scale (Appendix D) of feelings about handwriting, a tally sheet (Appendix F) of writing works chosen, and a teacher's journal.

My first source of data was assessment of student writing samples. Prior to beginning cursive instruction, I collected baseline writing samples from each of the eight

students and used the iRubric (Appendix A) for Kindergarten handwriting to score their writing samples. These samples consisted of words or sentences the students read and copied on lined paper. Students who were able to read were expected to write down some of the words they read each day as part of their regular work. I administered a handwriting assessment using the HWT Screening Tool for print (Appendix B) to determine their level of printing skills before cursive writing began. The HWT print assessment required the students to write uppercase and lower case letters from memory when the teacher said letter name and sound. A picture representing the initial sound for each letter was above the writing line to provide a visual guide. The scoring guide for this assessment (Appendix C) monitored student writing errors. Both sets of writing samples established baseline data. Following cursive lessons, more writing samples were collected and scored and the HWT print assessment was given again. This allowed me to compare the baseline data to samples of writing following cursive lessons to discover if cursive helped the students' printing improve.

During handwriting instruction, I collected the HWT cursive workbook pages and kept the sheets in each student's cursive folder. I selected three cursive practice pages from each student and assessed them using the iRubric (Appendix A). One page came from the second week, one from the fourth week, and one from the sixth week of instruction. I chose not to use the HWT assessment tool for cursive because my research and instruction was an introduction to cursive and HWT does not recommend giving this assessment until halfway through an entire school year of cursive lessons.

My second source of data was my observational journal. I used the journal to record the letter(s) taught each afternoon and the Montessori writing materials we used. I

described group writing lessons given in the morning to the participants. I also recorded observations from cursive writing instruction time. Keeping a daily journal during my action research helped me to stay on schedule with my instruction and plan for upcoming letter lessons. Reviewing my journal each week helped me to see that we would have to do two letters a day for a couple weeks so that we would be able to finish all of the alphabet during the six weeks. I recorded what students said and how they behaved during cursive instruction. Observing participants' attitudes and demeanors gave me information about how they felt about cursive. Recording these observations in the journal allowed me to review and adjust my instruction and my expectations.

The third data tool I used was an attitude scale (Appendix D) with five specific questions about the participants' feelings handwriting. I interviewed each student individually about their feelings using a scale of happy to sad faces under each of the five questions. The faces were labeled very happy, happy, in-between, sad, and very sad. I used a scoring sheet (Appendix E) to give a number to each response so I could represent the answers on a graph. The numeral scale corresponded to the attitude scale with a one for very unhappy to a five for very happy. At the end of the six weeks, I administered the attitude scale again to compare any changes in the students' feelings about handwriting following the intervention.

The fourth tool I used to collect data was a tally sheet (Appendix F) to record the writing work chosen by all of the students during the morning work cycle. Cursive participants and non-participant students chose writing activities at will, depending on skill level. A photograph of each the nine writing works was included in Appendix G. The tally sheet allowed me to keep track of which Montessori writing works were chosen

the most and the least. I was also curious to find out if students would choose more handwriting works during the cursive instruction, or if they would choose fewer, and the implications of the results.

Data gathering occurred throughout the research process. Writing samples analyzed using the iRubric and handwriting assessment provided information about students' handwriting skills throughout the action research. Observations in the journal gave me qualitative data to get an in-depth look at my students' responses to cursive instruction, an outline of the sequence of the study, and background information to triangulate my quantitative data. An attitude scale let the students share their feelings about cursive as individuals and the scoring sheet allowed me to graph their positive and negative feelings before and after cursive instruction. The tally sheet provided a record of writing works that were chosen during the research project to determine if there was relationship between the two.

Analysis of Data

The goal of this action research project was to determine if regular cursive instruction would positively affect the participants' general handwriting skills. Several methods of data collection were used to examine the students' handwriting abilities. The first method was the HWT Print Screening Tool was first given to the participants to determine their baseline printing abilities. It was administered again at the close of the six weeks of cursive instruction to determine if there was a change in the students' printing abilities following cursive instruction. The participants printed uppercase letters, numerals one through nine, and lowercase letters. The HWT tool assessed students' printing skills in three areas: memory (correct letter and case), orientation (no reversal),

and placement (letter sitting within 1/8" on the line). The total average score for the participants was 82%, considerably above the 69% average total score recommended by HWT for the mid-year kindergarten assessment. However, five students scored below average in an area. Two students scored below the 76% expectation in orientation (70% and 62%), two students scored below the 67% expectation in placement (65% and 60%), and one student scored below the 75% expectation in memory (71%).

The participants' average score on the HWT tool improved to 87% following the completion of cursive instruction. The students' individual scores before and after cursive instruction are represented on Figure 1.

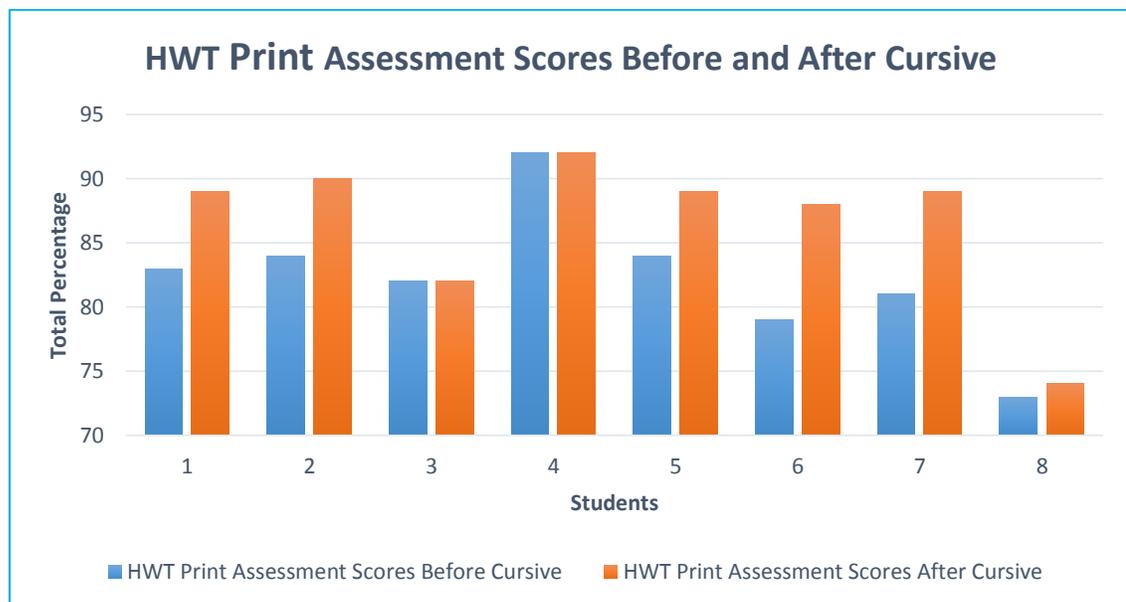
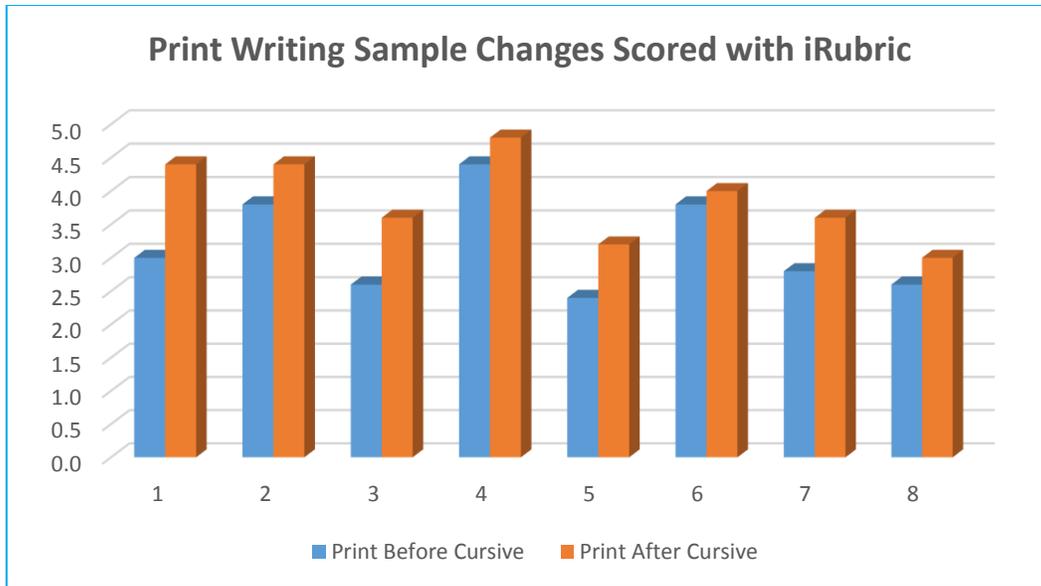


Figure 1. HWT print assessment scores before and after HWT cursive instruction.

Six students showed improved printing scores while two students' scores remained the same. Participants' printing skills either improved or did not change. Since none of the scores went down, the data indicated that cursive instruction helped their printing skills increase.

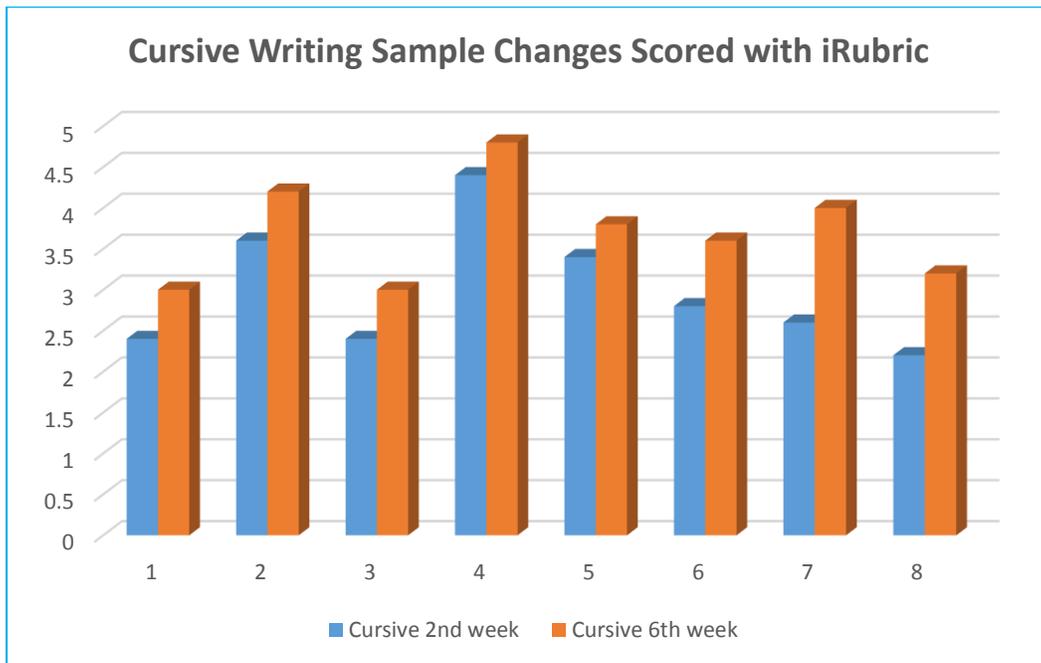
The area in which students showed the most improvement was orientation of letters, with letters facing the proper direction and not reversed. On the initial assessment, only one student scored 100% in this area, but on the final screening, five students scored 100% (including the student on the first assessment). This demonstrated that cursive writing practice may help limit letter reversals in handwriting. Cursive writing has been used by other educators to help students limit reversals (Baker, 2013). The intervention may have also helped some of my participants improve their orientation of letters when printing.

The second type of data collected were handwriting samples of print and cursive taken from students at intervals. Print samples were taken prior to and following cursive instruction. Cursive samples were taken following the second and sixth week of cursive instruction. Writing samples were scored on a scale of one to five (weak to outstanding) using the iRubric for kindergarten (Appendix A). The areas measured were: directionality, line usage (placement), circle closure, straight lines, and neatness. Students' work was assessed on the words they wrote on the paper. No points were taken for uncompleted words. Writing samples of print work the done by students during the morning work time were selected from before and after the intervention. Cursive samples from the students' HWT cursive workbooks were taken and scored. Figures 2 and 3 show students demonstrated improvement on both printing skills and cursive writing skills following cursive instruction.



1=weak, 2=poor, 3=fair, 4=good, 5=outstanding

Figure 2. Print samples taken from participants before and after cursive instruction.

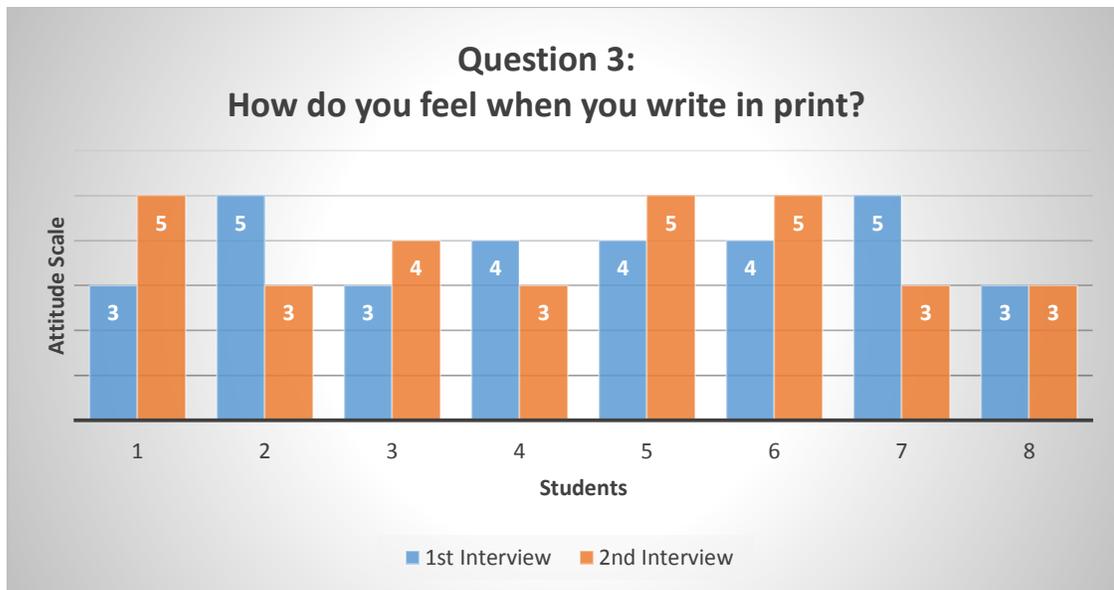


1=weak, 2=poor, 3=fair, 4=good, 5=outstanding

Figure 3. Cursive writing samples collected at the second and sixth week of cursive instruction.

The increase in scores were approximately the same for all participants whether they scored higher or lower on the first cursive writing sample. The cursive workbook samples from the students with greater writing abilities were completed more quickly. The students who needed assistance from the teacher did not always complete theirs and as mentioned above, only the words written were scored. It is possible that the higher scoring students improved at the same rate as their lower scoring peers. With more written on their sheets, the advanced students had more opportunities to make errors, which could have resulted in lower scores from iRubric.

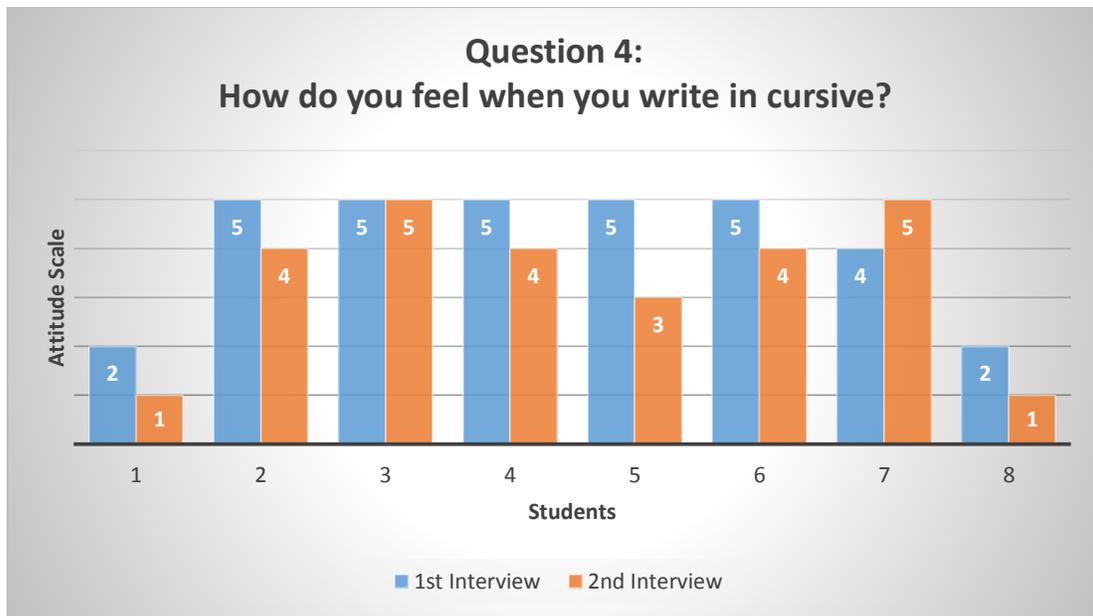
An attitude scale was another source of data collected twice during the study. At the beginning and end of cursive writing instruction, participants were individually interviewed and asked five questions (Appendix D). They responded by circling the face with the feeling they had in response to the question. I wanted to see if the participants' feelings about handwriting would change after they learned cursive. The three questions on the attitude scale most crucial to the study were 3, 4, and 5, because they pertained to the writing lessons and work each day. These questions focused on how the participants felt about print, cursive, and looking at their own handwriting work. The interventions had the potential to alter how participants felt about each item. The following graphs represent the changes in the responses from the first interview to the second. Figures 4, 5, and 6 pertain to attitude scale questions 3, 4, and 5, respectively.



1= very unhappy, 2=unhappy, 3=in between, 4=happy, 5=very happy

Figure 4. Students' feelings about print at the beginning and end of cursive instruction.

Students varied in their feelings about writing in print at the beginning and end of cursive instruction. Students 1, 3, 5, and 6 all experienced happier feelings about printing at the end of cursive instruction than at the beginning. Students 2, 4, and 7 reported feeling “happy” or “very happy” about printing at the beginning to feeling “in between.” Only student 8’s feelings remained the same, “in between” happy and sad. Interestingly, students 2, 4, and 7, who reported lower feelings about print following cursive, had the highest scores on the 6th week cursive writing samples shown in Figure 3.

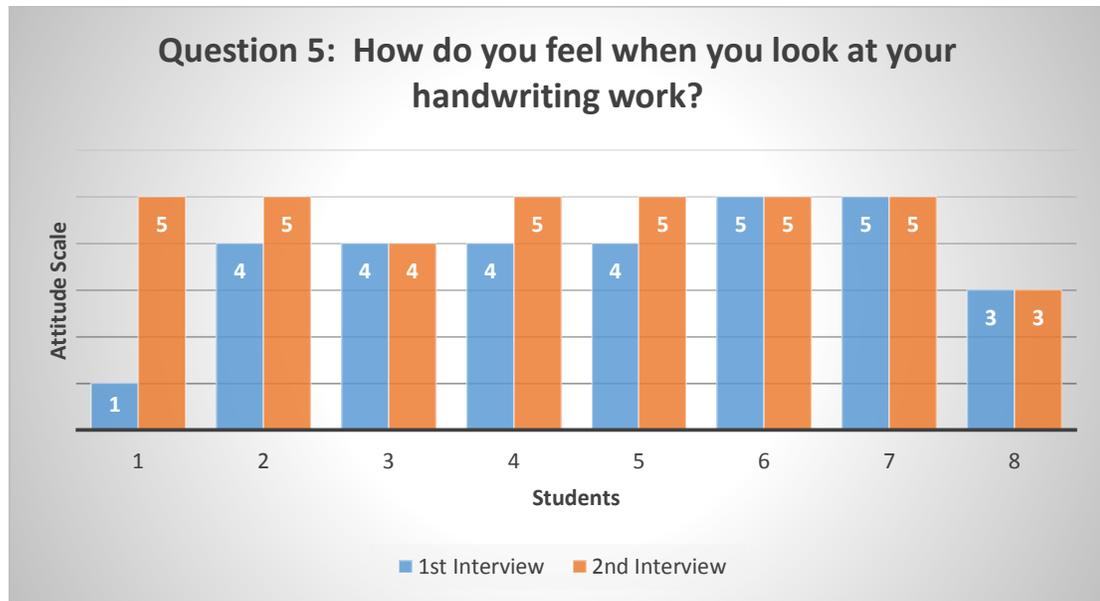


1= very unhappy, 2=unhappy, 3=in between, 4=happy, 5=very happy

Figure 5. Students' feelings about cursive at the beginning and end of cursive instruction.

Only one student's (7) feelings about cursive were higher during the second interview at the close of the intervention. Student 3 felt very happy both times about cursive and was the only student whose feelings remained the same. Students 2, 4, and 6 went from "very happy" to "happy," and student 5 went from "very happy" to "in between." Students 1 and 8 reported feeling "unhappy" at the beginning of cursive to "very unhappy" at the end. Although all students showed improvement in cursive (Figure 3), students 1, 3, and 8, scored the lowest on their cursive writing samples. It makes sense that the struggling students would feel less happy about writing in cursive. However, student 3 felt happy about cursive regardless of the need to persevere to improve. An explanation for why the students who were succeeding in cursive felt less happy about it at completion may be that they were excited about learning and rated cursive higher.

When they learned it was challenging to do, they rated their positive feelings about cursive, only less so than when they began and it was more novel.



1= very unhappy, 2=unhappy, 3=in between, 4=happy, 5=very happy

Figure 6. Students' feelings about looking at their handwriting work.

The students all felt more positive or the same about looking at their handwriting work. Six of the eight students felt “very happy” about looking at their handwriting work following cursive instruction. Cursive and print were intentionally left out of this question so students could express how they felt about their handwriting in general. One student (3) felt “happy” both times and another (8) felt “in between.” Since the students experienced improved handwriting skills following cursive handwriting instruction, their feelings when they look at their work aptly reflect their success.

The last quantitative data source I used was a tally sheet to keep track of the writing works chosen in the classroom during the morning work cycle. I wanted to determine if implementing HWT cursive would alter the times handwriting work was chosen by all of the students. Even though only eight students received cursive

instruction, the rest of the students sometimes saw them working on cursive independently during the morning and asked them about it or observed. I was also interested in seeing if some writing works would be chosen more or less than others.

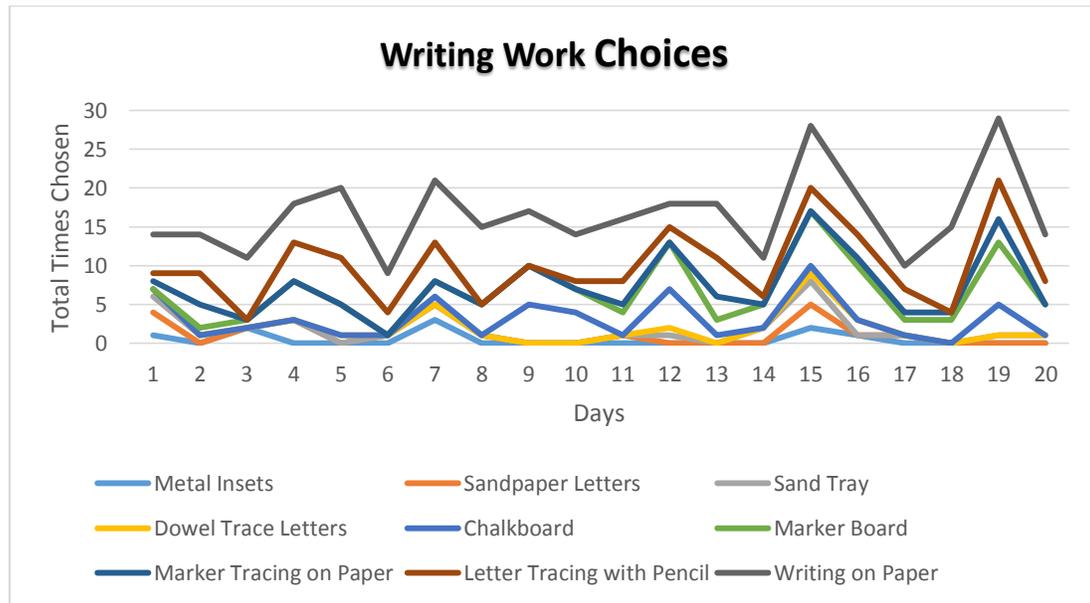


Figure 7. Writing work choices selected during the morning work cycle in the classroom.

Students selected writing on paper the most of any writing work and letter tracing was the second highest. Using markers to trace letters on paper was the third highest writing work selected and was newly introduced last semester in November due to my growing interest in handwriting. Students were already using chalk, colored pencils and pencils for writing, so adding another utensil added interest to the writing shelf. The writing work that exhibited the greatest increase over the course of keeping the tally sheet was the dry-erase marker board. During the second half of the cursive writing intervention I noticed that it was chosen much more often than during the first half. Students chose to write on the marker board on one side of a table easel as well as on four marker boards stored upright on a shelf with chalkboards. Writing subjects included

letters in alphabetical order, the student's name, friends' names, and drawing a person or a house. The other students saw the participants writing in cursive on the marker boards, as well as me giving cursive presentations using the easel marker board. Students in multi-age classrooms often learn from other students. Younger students may have chosen the marker board more often to emulate their older peers.

Another reason the marker board may have increased in popularity is that writing with a dry-erase marker is easier than with a pencil on paper, and much easier to erase mistakes and try again. The marker board encouraged students to practice and repeat, which is key to improving handwriting skills. A graph (Figure 8) shows that the marker board was chosen more often during the second half of the intervention than the first half.

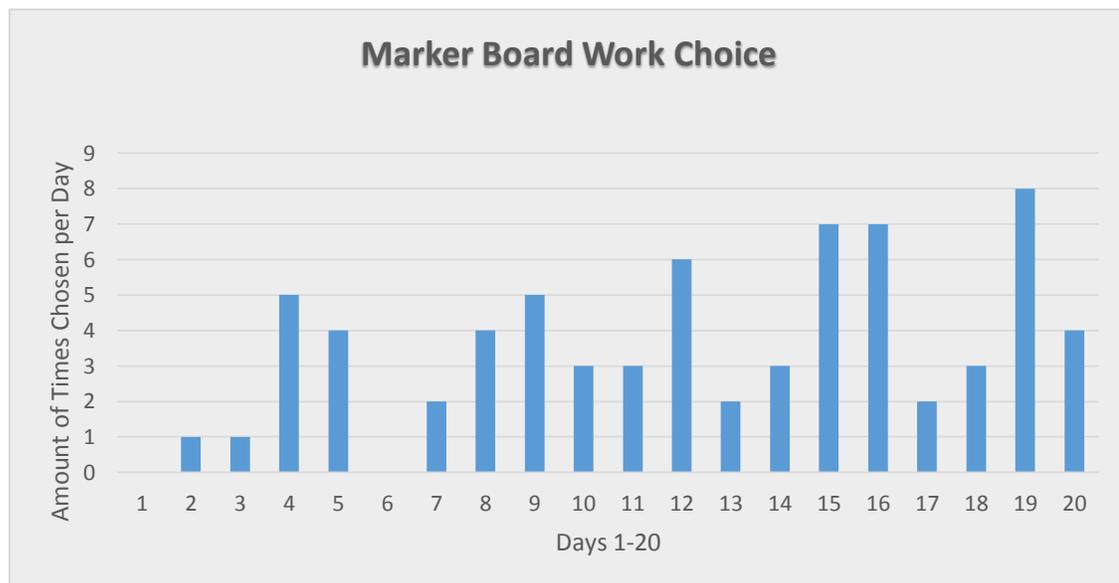


Figure 8. Dry-erase marker board work choice.

The traditional Montessori writing works including the sandpaper letters, sand tray, and metal insets were chosen least often. This might be because many students have mastered the sounds by January and are already working with the moveable alphabet or

reading. The younger students who were ready for these works were few in number and focused on areas of the classroom that build focus, concentration, and order, and develop the senses. Another possibility may be that these works were not presented often enough to the students, which will be examined further in the Action Plan.

Cursive instruction time is a group activity, while most work in the early childhood Montessori classroom (ages 3-6) is done individually. With a larger group all working at one table, the students could see who was struggling and who was able to write in cursive easily. Some students who were faster competed to finish first, which resulted in sloppier cursive writing. It was noted that these participants were capable of doing neater writing work during their morning individual work time.

Six parents or caregivers commented to about how their children felt about cursive. One adult reported the child said, “[cursive is] like writing is an art,” and that the student wrote in cursive at home. Another adult expressed excitement over the student’s cursive achievement and that the student also wrote cursive at home. Several other adults stated their child chose to write cursive at home and was very interested in sharing the cursive he or she had learned at school

Fatigue and disinterest was noted in the observation journal regarding students 1 and 8 who received low scores on cursive writing samples. Fatigue was noted if the participant put his or her head down while writing or said out loud that he or she was tired. Disinterest was noted if a student stopped working, looked away from the teacher’s demonstration and description of how to write a letter, or began to distract others. The same students were the only two ones who rated their feelings when they wrote cursive as “very unhappy.” Students who appear disinterested, have unhappy feelings about cursive,

and have low scores in printing may benefit from becoming stronger manuscript writers before moving on to structured cursive instruction. Even though these participants' printing scores improved, they might have improved anyway with extra printing practice. For these students, exposure to cursive could be accomplished using the traditional Montessori cursive materials of the sandpaper letters and the moveable alphabet alone, following the child when the interest in cursive becomes ignited. Montessori education focuses on following the child when he or she is ready for a work, and the same tenet should be applied for cursive handwriting.

The conclusions found through this research suggest that kindergartners who have average to strong printing skills benefit from learning cursive using the HWT method. Feelings about handwriting can influence writing performance and vice versa, writing skills can impact a student's feelings about writing. Regular practice improves students' handwriting and their positive feelings when they look at their writing work. Cursive writing instruction reduces reversals in printed writing. Introducing cursive earlier to students can benefit their writing skills. Using HWT cursive instruction along with Montessori writing materials can help kindergarten students improve both their print and cursive handwriting skills.

Action Plan

The goal of my research was to find out if HWT cursive instruction would help my students improve their handwriting skills. Over the past few years, I recorded increasing numbers of students with poor handwriting skills, including: proper grip, sufficient pressure, correct orientation, and line placement. The kindergarten students were exhibiting some of these problems with printing. As the data reflected, HWT

cursive instruction helped the participants improve their printing skills and limit their reversals of letters. The repetitive verbal descriptions of how to form the letters, writing letters on chalkboards and marker boards, and practicing writing the letters in the air all contributed to building the students cursive skills through multisensory learning.

The success of the HWT cursive curriculum for the students caused me to examine the entire spectrum of the HWT handwriting curriculum. I encountered and now own all of the teacher and student workbooks for Pre-K through 5th grade. I plan to gradually introduce the verbal descriptions and specifically lined paper for printing upper and lower case letters to all students in my class. The songs and activities I added a couple of times a week at group time during the intervention period were met with excitement and enthusiasm by all of the students. The songs describe and include physical movement for how to correctly hold a pencil, form letters, and where to begin writing letters. I have tried the “Wet, Dry, Try®” method for practicing writing on a double lined HWT chalkboard with students of all ages and it encouraged them to practice more than simply writing on a chalkboard they had used. Students of all ages gravitated toward writing works throughout the intervention, with the certain works chosen more frequently. An increasing number of students chose to work on the dry-erase marker boards beginning halfway through the cursive instruction period. I have purchased dry-erase crayons to require them to press harder and new dry-erase boards so that more students may choose this work at the same time, or even use in a small direct instruction group.

Because the participants improved their overall handwriting skills, I plan to introduce the HWT cursive curriculum to all kindergarten students and pre-K students who demonstrate readiness in January as prescribed by my school. The HWT cursive

letters (Appendix H) are straighter and not slanted, and closely resemble printed letters, making it an ideal introduction to cursive writing for young learners.

At the beginning of the school year, I will use the Kindergarten level HWT Print Screening Tool to identify students of all ages who are below target in their printing skills. This will provide the opportunity to remediate those students using Montessori handwriting materials and HWT techniques throughout the fall semester. Specific remediation will be tracing the sandpaper letters, tracing letters in a sand tray, and writing letters with chalk and dry-erase crayons on boards. I will use HWT cursive as an introduction to cursive in January again.

The research also helped me to see which writing materials were being chosen most often as well as those that were chosen the least. The sandpaper letters, metal insets, and sand tray, all traditional Montessori writing materials, were chosen less often. I would like to change this by giving more presentations on these works to renew my students' excitement about them. Montessori guides encourage students to build their skills through repetition. Giving more presentations will allow me to facilitate and guide students through these activities more often. Also, the HWT screening pointed out the need for an upper case and lower case matching work on the sound shelves. Several students had errors on the HWT assessment because they wrote the letter in the wrong case. Therefore, I will create a material on the pre-language shelf for students to match a capital letter to its corresponding lower case letter, taking both from the moveable alphabets.

I will introduce HWT print curriculum along with sandpaper letters instead of the dotted handwriting pages we currently use. Letter writing instruction using the sandpaper

letters or paper writing is currently given to small groups and individuals. I will expand letter writing lessons to include small group handwriting instruction using HWT print curriculum to pre-K students. I plan to start by working with the groups two times a week for ten minutes per session. Adding songs about letter formation, starting place, and pencil grip to group time is a fun and easy way to help the students to remember good writing habits when they write or trace letters on their own, since songs help us remember information.

This research has already helped my participants improve their handwriting skills and to get excited about cursive writing. They have shared their enjoyment with others. Non-participant students have observed that enthusiasm and share it by watching when participants are writing in cursive and working with the cursive sandpaper letters and the cursive moveable alphabet. The positive attitude the participants display about cursive writing has extended to others. Cursive could have been seen as difficult and the participants might have avoided it if they had negative feelings about it. However, the data demonstrated their feelings about their handwriting work improved following the HWT cursive instruction period. I hope the participants' positive feelings about their handwriting work will carry on with them to kindergarten and first grade because their foundation in cursive has been positive. Their improved handwriting skills will positively impact their writing skills by aiding their automatic writing abilities so they can focus on their content and composition. Sharing my results with my school community and educators who have eliminate cursive handwriting from their curricula may benefit other students and teachers.

I will continue action research on handwriting instruction using HWT next year. Duplicating my assessments for print and my methods of cursive instruction will indicate if I get the same results as in this action research. I am interested in researching using the HWT printing program as well. I will use the same framework to more formally examine printing instruction with HWT. During the course of this action research, I attended two HWT workshops (Pre-K and K-5 levels). Following the workshops, I began to add ideas I learned about printing with my younger students as well. I kept records for teaching purposes, but did not add to this action research project.

Research supports that learning capital letters before lowercase increases language and reading skills (Amundson, 2001; NAEYC, 1998; Olsen & Knapton, 2013). I will examine teaching upper case letters first using upper case sandpaper letters along with the Get Set for School® (GSS) HWT curriculum, but only with students who enter my classroom knowing no sounds, so as not to confuse them. I could then compare phonemic awareness, reading level, and handwriting skills with students who learn lower case first.

Another possibility for school wide research is to evaluate my students' handwriting skills after they leave my classroom. I will give the cursive HWT assessment to my participants next year at three intervals and to students of the same age at in their first through third grade classrooms who did not do HWT cursive curriculum. If positive, the findings may encourage more classrooms at my school to use the HWT method along with Montessori cursive materials and help students to improve their handwriting skills. This will help teachers meet the needs of their students by assessing and remediating students who need help and practice. Since better handwriting skills are linked with

increased academic performance, helping all students improve their handwriting would benefit them as students now, and in their future educational pursuits.

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Appendix A

Kindergarten This rubric can be used to assess student handwriting in many different assignments.					
	Weak 1 pts	Poor 2 pts	Fair 3 pts	Good 4 pts	Outstanding 5 pts
Directionality Are students beginning and ending letter at correct points?	Weak Many errors in directionality. Does not begin letter at appropriate point.	Poor Some errors in directionality. Begins letter at appropriate point seldomly.	Fair Few errors in directionality. Begins letter at appropriate point some of the time.	Good Uses proper directionality most of the time. Begins letter at appropriate point most of the time.	Outstanding Always uses proper directionality. Begins letter at appropriate point all the time.
Line Usage How well are the students using their writing lines?	Weak Many errors in line usage. Letter does not touch any lines.	Poor Some errors in line usage. Letter touches a few of the correct lines.	Fair Few errors using lines correctly. Letter touches some of the correct lines.	Good Uses lines correctly most of the time. Letter touches most of the correct lines.	Outstanding Always uses lines correctly. Letter touches correct lines.
Circle Closure Do circles close?	Weak Circles do not close.	Poor Few closed.	Fair Some closed.	Good Mostly closed.	Outstanding Always closed.
Lines are straight Are all lines horizontal, diagonal, and vertical straight?	Weak Lines are not straight.	Poor Few lines are straight.	Fair Some lines are straight.	Good Most lines are straight.	Outstanding All lines are straight.
Neatness How neat is the students' handwriting?	Weak Difficult to read.	Poor Not neatly done.	Fair Not as neatly done.	Good Writes neatly.	Outstanding Always writes neatly.

iRubric: Kindergarten Handwriting rubric

<https://www.rcampus.com/rubricshowc.cfm?code=F746BA&sp=yes&>

Obtained through search on <http://nces.ed.gov/>

Appendix B



A row of nine small illustrations: a turtle, an owl, a fish, a toy car, a banana, a snail, a key, a nose, and a broom. Below each illustration is a horizontal line for handwriting practice.

A rectangular box containing a row of ten dot patterns. The first pattern is a single dot. The second is two dots. The third is three dots. The fourth is four dots. The fifth is five dots. The sixth is six dots. The seventh is seven dots. The eighth is eight dots. The ninth is nine dots. The tenth is ten dots. Below each dot pattern is a horizontal line for handwriting practice.

A row of nine small illustrations: a rabbit, a bird, a pencil, an ant, a dog, a hat, a cow, a pill, and a fish. Below each illustration is a horizontal line for handwriting practice.

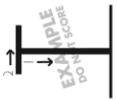
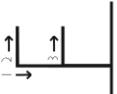
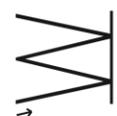
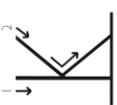
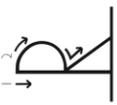


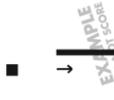
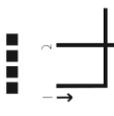
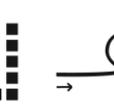
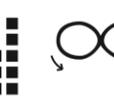
Appendix C

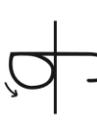
Kindergarten Answer Key



☺(Name)

								
---	---	---	---	--	---	---	---	---

☺He can hop.

Appendix D

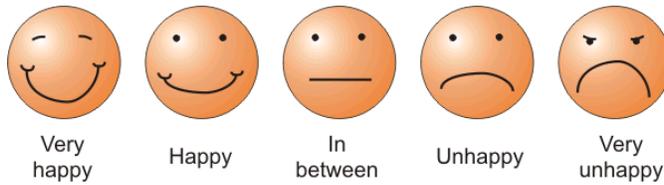
Kindergarten Handwriting Attitude Scale

Date _____ Teacher Initials _____

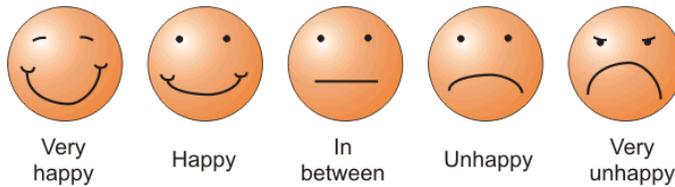
Student

Name _____

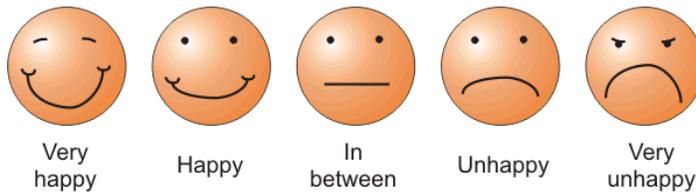
1. How do you feel when you work on handwriting?



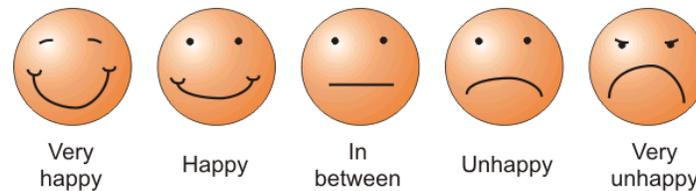
2. How do you think your teacher feels about handwriting?



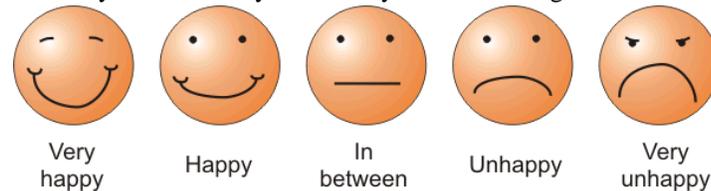
3. How do you feel when you write in **print** ?



4. How do you feel when you write in *cursive* ?



5. How do you feel when you look at your handwriting work?



Appendix E

Student Handwriting Attitude Scale Scoring Sheet

Student Name: _____

Date: _____

Scoring Guide:

4 points = Very Happy

3 points = Happy

2 points = In Between

1 point = Unhappy

0 points= Very Unhappy

Score

1. ____

2. ____

3. ____

4. ____

5. ____

Raw Score: _____

Appendix G



Print and cursive sandpaper letters teach proper formation of letters by tracing a tactile surface as well as the sound of the letter.



The moveable alphabet allows children to form words when they know the sounds and to write creatively using invented spelling.



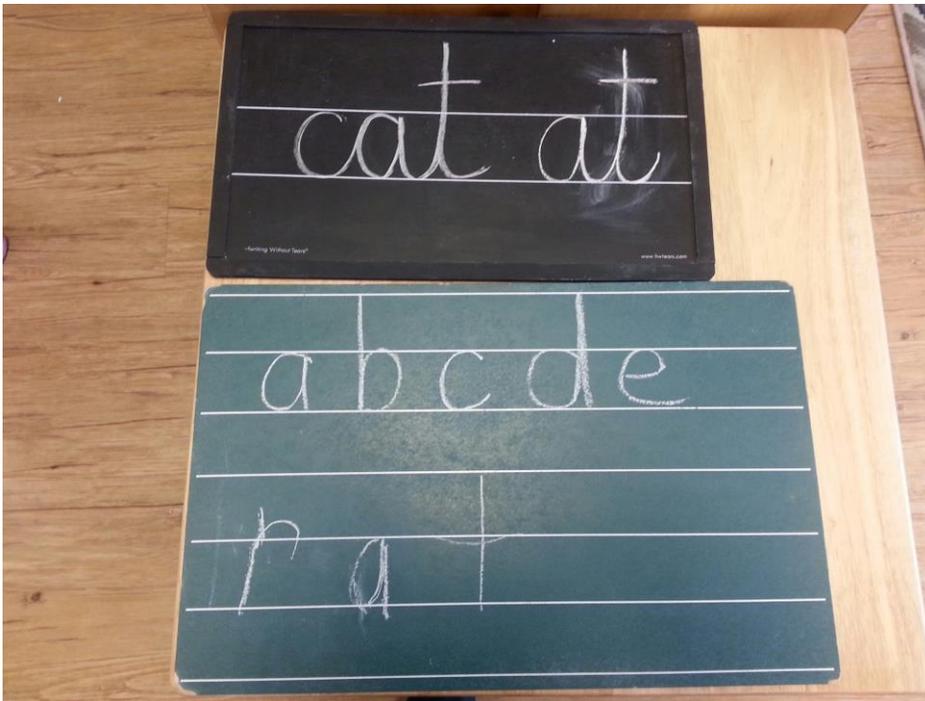
Sand Tray



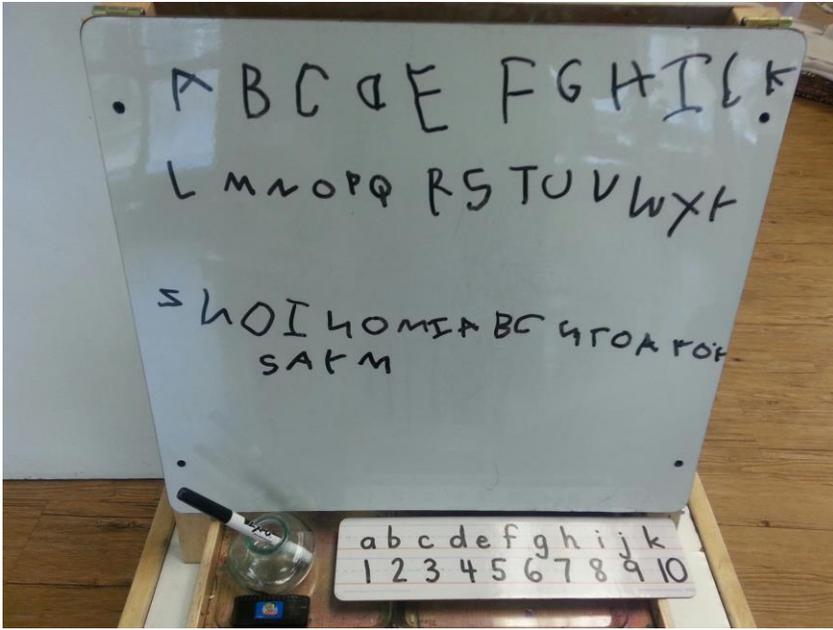
Metal Insets



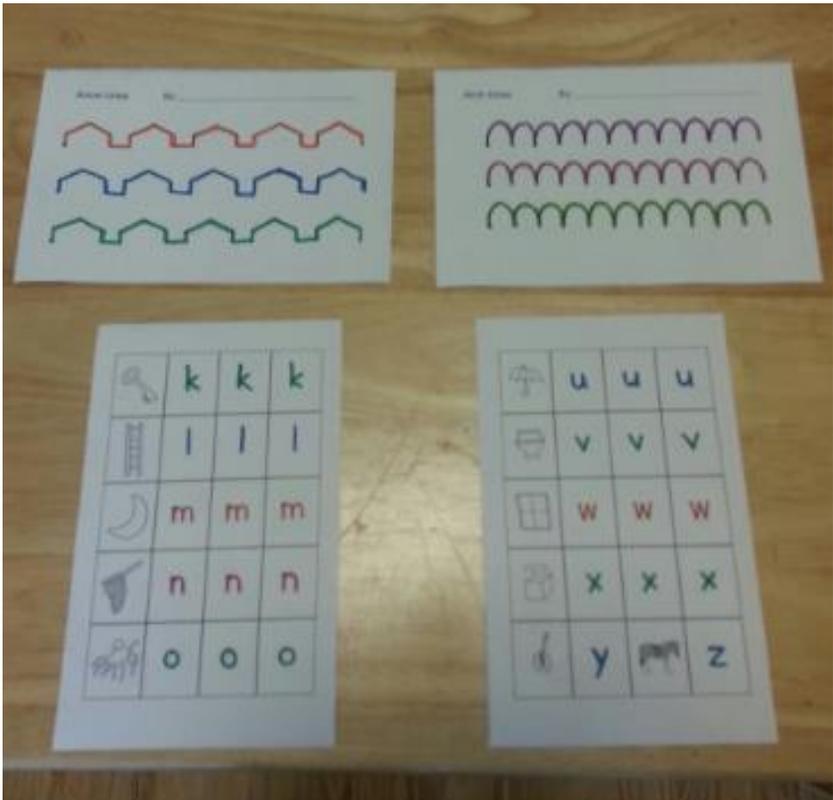
Letter Tracing with a Dowel



Writing on a Chalkboard: On top is a HWT chalkboard, below is a green chalkboard.



Dry-erase Marker Board



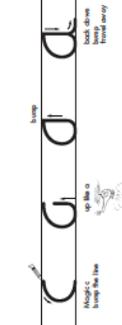
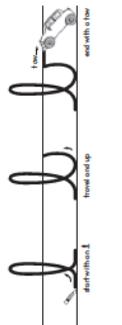
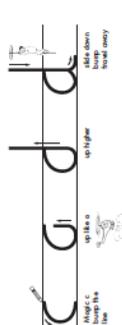
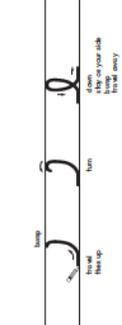
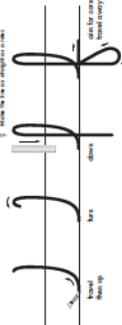
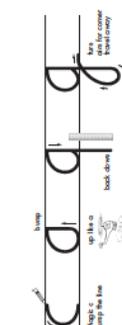
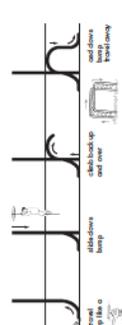
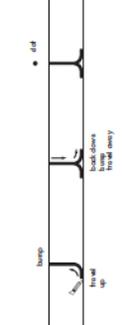
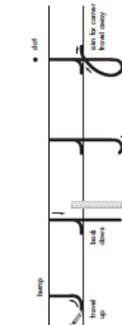
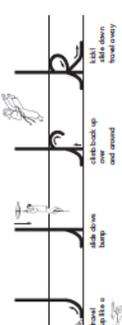
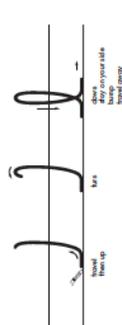
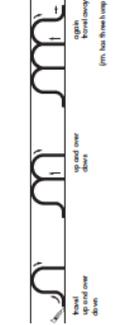
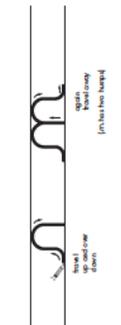
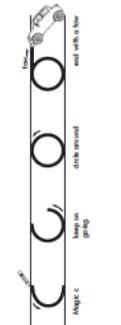
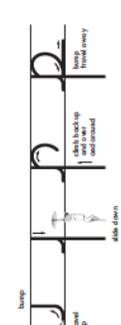
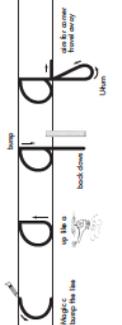
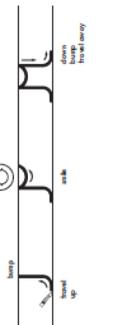
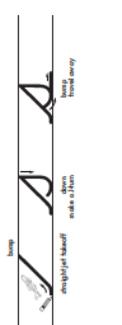
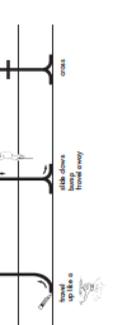
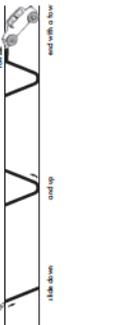
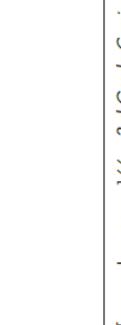
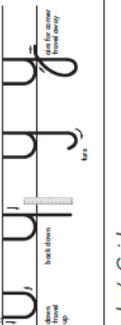
Tracing lines and letters with a marker using Beautiful Handwriting© pages

Appendix H



Click the smiley face icon

Teaching Lowercase Cursive Step by Step

 <p>bump back down front away</p>	 <p>start with line front end up end with line</p>	 <p>bump up like a slide down front away</p>	 <p>bump up like a slide down front away</p>	 <p>bump up like a slide down front away</p>	 <p>bump front end up back down front away</p>	 <p>bump up like a slide down front away</p>	 <p>bump up like a slide down front away</p>
 <p>bump front end up back down front away</p>	 <p>bump front end up back down front away</p>	 <p>bump front end up back down front away</p>	 <p>bump front end up back down front away</p>	 <p>bump front end up back down front away</p>	 <p>bump front end up back down front away</p>	 <p>bump front end up back down front away</p>	 <p>bump front end up back down front away</p>
 <p>bump front end up back down front away</p>	 <p>bump front end up back down front away</p>	 <p>bump front end up back down front away</p>	 <p>bump front end up back down front away</p>	 <p>bump front end up back down front away</p>	 <p>bump front end up back down front away</p>	 <p>bump front end up back down front away</p>	 <p>bump front end up back down front away</p>
 <p>bump front end up back down front away</p>	 <p>bump front end up back down front away</p>						