ISSN-L: 2223-9553, ISSN: 2223-9944
Vol. 2, No. 2, March 2012

THE EFFECTS OF USING *HANDWRITING WITHOUT TEARS*® TO TEACH THIRTY-ONE INTEGRATED PRESCHOOLERS OF VARYING ACADEMIC ABILITY TO WRITE THEIR NAMES

Moriah LeBrun
Gonzaga University
USA
mlebrun@zagmailgonzaga.edu

T. F. McLaughlin
Gonzaga University
USA
mclaughlin@gonzaga.edu

K. Mark Derby
Gonzaga University
USA
derby@gonzaga.edu

Michelle McKenzie
Spokane Public Schools
USA
MichelleM@Spokaneschools.org

ABSTRACT

The purpose of this study was to evaluate and measure the effectiveness of the prewriting and Handwriting Without Tears®. Thirty-one students were selected from a hybrid Early Childhood Education Assistance Program, ECEAP, in the Pacific Northwest. The class integrated students with special needs, students of very low income, English Language Developers, and typically developing children age three to five. The curriculum was used to teach the children how to write their name. In baseline, each child was told to, "Write your name the best you can." After, the children's baseline performance level was used to group the children according to handwriting needs. Three groups were formed; the first group had yet to learn any letters of their names, the second were able to write some letters of their name but not all, and the third group needed to work on perfecting their letters as well as learning uppercase and lowercase letters. The final outcomes indicated an increase in handwriting ability across all three groups. Suggestions for using Handwriting Without Tears® with large groups of preschool children were made.

Keywords: Handwriting without Tears, preschool students ECEAP, single case research designs, statistical significance, action research, data-based decision making

INTRODUCTION

Handwriting is crucial to academic success as well as an important component of communication (Graham, 1999). Children develop this ability in stages. Children begin to develop penmanship and prewriting skills from their first scribble with a crayon. During early childhood, these young learners develop appropriate grips for holding writing utensils, they learn to distinguish between different types of lines that make up letters, they increase crucial fine motor control, and they learn there is a link between information output through writing to expressive communication. In preschool, often before any formal schooling takes place, children develop an awareness that writing carries meaning (Naidoo, Engelbrecht, Lewis, & Kekana, 2009). Handwriting, as described by Goyen and Duff (2005), is considered a complex skill involving an intricate interchange of not only visual and motor abilities, but also cognitive and perceptual processes, psychosocial, biomechanical, and environmental factors.

Often, it appears that children's writing development is random; though it is often messy, this is not the case. Around three years of age children progress and are exposed to print, their more controlled scribbling begins to acquire some of the characteristics of print. As noted by research, at this age children begin to notice the visual features of print: linearity, horizontal orientation, and arrangement of letter-like forms. For example, a child begins to recognize that letters consist of a limited number of

shapes that can be put together in various ways. Furthermore, they see that the shapes can be used to generate letters and words (Neuman, 2004)

Though handwriting in early childhood has not been well researched until late, studies are beginning to show that there are some consistencies in teaching effective initial penmanship skills. Appropriate grip, writing letters from the top with downward strokes, and incorporating fun learning strategies are all supported by the early childhood handwriting curriculum *Handwriting Without Tears*® (Roberts, 2009).

The *Handwriting without Tears*® handwriting curriculum (Olsen, 1998, 2005) has started to receive some empirical support in the peer-reviewed literature. For example, Carlson, McLaughlin, Derby, and Blecher, (2009) found increases in handwriting skills for two preschool students with autism when they employed *Handwriting without Tears*® to increase legibility. In another study (McBride, Pelto, McLaughlin, Barretto, Robison, & Mortenson, 2009), improvements in handwriting skills were found for two preschool students with developmental delays when *Handwriting without Tears*® was implemented. Finally, Cosby, McLaughlin, Derby, and Huewe (2009) were able to improve the handwriting legibility of a single preschooler with autism using *Handwriting without Tears*® procedures. Recently, Morris, McLaughlin, Derby, and McKensie (2012) were able to implement the *Handwriting without Tears* curricula with Mat Man to improve the pre-handwriting skills for nine preschool students enrolled in a public special education preschool classroom. An ABAB single case design was employed. During both baselines, student performance was low. When *Handwriting without Tears* curricula with Mat Man was employed, student performance improved. These differences were statistically different.

The purpose of this study was to evaluate the effectiveness of the prewriting and handwriting curriculum *Handwriting without Tears*® in a preschool setting with children of wide and varying academic abilities. The goal of the study was to have all 31 students from the integrated preschool class to learn to write their first names. A second goal was to provide a replication of the *Handwriting without Tears*® program using a larger sample and in a different type of classroom setting than employed by McBride et al. (2009) Carlson et al., (2009), and Cosby et al., 2009). We wanted to replicate our prior research (Morris et al., 2012) in the same classroom setting. Through replication, we could extend the efficacy of employing the materials and procedures of the *Handwriting without Tears*® program.

METHOD

Participants and Setting

The participants of this study were 31 students in an Early Childhood Education Assistance Program (ECEAP) in the Pacific Northwest. The classroom was an integrated setting containing students from low income families (N = 14) , students with Individualized Education Plans (N = 5), English Language Developers (N = 4), and typically developing peers (N = 8). All students were ages 3 to 5 years. The entire class was divided into three groups. Group 1 contained 11 students and Groups 2 and 3 contained 10 students. The entire class was divided into three groups. These students were then divided into three groups based on their skill levels.

Data collection occurred during the regular preschool classroom routine. Data were collected and sessions were conducted during free play and center activity time during the preschool day. These data were collected in the morning and afternoon. Children were typically instructed individually; however, some of the children who displayed higher writing proficiency were instructed in small groups. The classroom was staffed by a certified teacher, two para-educators, and a student teacher (first author).

Materials

The study utilized materials designed for the Handwriting without Tears® curriculum. The curriculum materials included: a wood piece set to form letters, a stamp and see screen, a sing along

ISSN-L: 2223-9553, ISSN: 2223-9944
Vol. 2, No. 2, March 2012

CD that incorporated fine and gross motor development, and name writing worksheets. Additionally, a Crayola magic marker set was used to increase in name writing and assisted children with developing precision while tracing.

Dependent Variable and Measurement

The purpose of the study was to increase student ability to write their names. Participants from Group 1 worked on tracing, copying, and independently writing the letters of their names as per baseline testing they did not display knowledge of how to write any letter of their names. Group 2 focused on writing all letters of their names as during baseline they showed some knowledge of how to write letters in their names but not full first name completion. Group 3 was instructed in penmanship, primarily uppercase and lower case and developing precision in letter writing was stressed.

All participants' names were scored using the same scale of measurement. Three points was awarded for each letter of the child's name. One point was given for size - whether they stayed within the lines of the worksheet, a point was given for appropriate slant, and a third point was awarded for formation - whether the letter was legible. Seven to ten sessions were conducted, after the initial baseline, for each student and permanent product data was collected at the end of each session.

Interobserver Agreement and Fidelity of Implementation of Experimental Conditions

Permanent product data were collected following every session. Every child was provided a worksheet where they were instructed to, "write your name the best you can" following individualized writing instruction that utilized the Handwriting without Tears® curriculum. Two adults gathered these data by scoring each student's work. The number of handwriting points were compared to each other/ Interobserver agreement was calculated by dividing smaller number of handwriting points by the larger and multiplying by 100. The percent of interobserver agreement was 99% with a range of 90 to 100%.

Fidelity measures for both conditions were gathered a total of seven different times. The second author or classroom teacher gathered these data. Both baseline and Handwriting without Tears® conditions were observed. Reliability as to which phase was being implemented was 100%.

Experimental Design and Conditions

The design of the study was an AB design (Kazdin, 2010) across groups. A description of each condition follows.

Baseline

During baseline all students were given a marker, a piece of plain white paper, and the same verbal instruction to, "write your name the best you can." This condition was in effect for one session.

Handwriting without tears®. Following baseline, all students were given different, individualized instruction depending on need. Some students, who had yet to learn to write specific letters of their names were first instructed using the wooden manipulatives from the Handwriting Without Tears® curriculum to learn the simple lines of the letters in their names. Students learned to identify individual strokes of the letters in their names by piecing "big lines," "little lines," "big curves," "little curves," "big loops," and "little loops" together. After piecing the letters of their names together, they were instructed to write them while the researcher talked them through the individual strokes. After practicing these letters with manipulatives and writing them, the children were tested by independently writing their name without any verbal prompting or assistance from the researcher. Also, during large group instruction, all students were given instruction on "starting lines at the top" and how to write diagonal lines as the researcher utilized the Handwriting without Tears® sing along CD during class music time. The data were gathered over 11 weeks of school.

ISSN-L: 2223-9553, ISSN: 2223-9944
Vol. 2, No. 2, March 2012

RESULTS

Baseline

The group total score for Group 1 during baseline was just 12 points. The number of letter of their first names counted for three points Group 1 could earn a total of 210 points Group 2 was composed of 10 preschool students. Their total point value for baseline was. The baseline total from Group 2 was 53 (M = 53 points). Group 3 included 10 students and had a total point value of 174 for their names. Baseline of Group 3 was 156 points.

Handwriting without Tears®

After implementation of the Handwriting without Tears® curriculum, Group 1 increased their mean score to 82 points. This was an increase of 70 from baseline. For Group 2, their highest total number of points was 108 for this conditions. This was a point increase of 55 points from baseline. Group 3's highest total number of points at 167. For baseline Group 3 scored 156 points. Other than the first session of Handwriting without Tears®, they improved their total score for each session. For the Handwriting without Tears® intervention they scored 167. This was an 11-point increase from baseline.

Statistical Comparisons

Due to the use of an AB design, a Wilcoxon-Signed Ranks Test (Siegel, 1956) was carried out between baseline and the Handwriting Without Tears® intervention. This was done for each group of participants. There was a significant difference favoring the Handwriting Without Tears® intervention for all three groups of students. A Wilcoxon Signed Ranks Test (Siegel, 1956) between the three baselines and the Handwriting Without Tears® condition was significant for Group 1 (Z = -2.019; p = .019) for Group 2 (Z = -2.014; p = .016), and Group 3 (Z = 2.032; p = .0422).

DISCUSSION

The results of this study on the effectiveness of Handwriting Without Tears® produced an increase in all students' handwriting abilities. Based on the large improvements in Groups 1 and 2, Handwriting Without Tears® was effective with those students with the largest deficits in handwriting. This curriculum is a well developed, interactive means of teaching primary writing skills for students who are typically developing, students with special needs, students who do not have English as a primary language, with a low-income, at-risk, and diverse population.

A strength of this study is that all students displayed an increase in handwriting abilities. Furthermore, it was efficient and effective in teaching preschoolers at all academic levels. In addition it provided an additional replication (Jasny, Chin, Chong, & Vignieri, 2011) of our work with Handwriting without Tears® at the preschool level (Carlson et al., 2009; Cosby et al., 2009; McBride et al., 2009; Morris et al., 2012; Thompson, McLaughlin, Derby, & Conley, in press).

A weakness of this study based on the *Handwriting Without Tears*® curriculum was that it appeared not to challenge the highest achieving group. Though they did display an increase in handwriting ability, they did not improve at the rapid rates as the two lower achieving groups. Furthermore, all participants only attended preschool for four days a week and for three hours each day. Sessions did not occur every day the students were at school due to timing conflicts and instructional limitations; the inconsistency of session implementation may have prevented more of an increase in ability. This curriculum could be more effective if used every day to allow for much needed repetition. Finally, the use of an AB design does not allow for a demonstration of a cause and effect relationship to be established between baseline and the intervention. Even with the statistical comparisons being significant, other factors may have caused these differences to take place. Two of the groups had large and immediate changes in handwriting, while the highest achieving group (Group 3) did not. Future research warrants the use of a more rigorous design such as that employed by Morris et al. (2012) or Thompson et al. (in press).

ISSN-L: 2223-9553, ISSN: 2223-9944
Vol. 2, No. 2, March 2012

REFERENCES

Carlson, B., McLaughlin, T., Derby, K., & Blecher, J. (2009). Teaching preschool children with autism and developmental delays to write. *Electronic Journal of Research in Educational Psychology*, *7*(1), 225-238.

Cosby, E., McLaughlin, T. F., & Derby, K. M., & Huewe, P. (2009). Using tracing and modeling with a handwriting without tears® worksheet to increase handwriting legibility for a preschool student with autism. *Open Social Science Journal, 2,* 67-69.

Graham, S. (1999). Handwriting and spelling instruction for students with leaning disabilities: A review. *Learning Disability Quarterly, 22*, 78-98.

Jasny, B. R., Chin, G., Chong, L., & Vignieri, S. (2011). Again, and again, and again …. *Science, 334,* 1225.

Kazdin, A. E., (2010). *Single case research designs: Methods for clinical and applied settings* (2nd ed.). New York: Oxford University Press.

Goyen, T. A & Duff S. (2005). Discriminant validity of the Developmental test of Visual-Motor Integration in relation to children with handwriting dysfunction. *Australian Occupational Therapy Journal, 52,* 109-115.

Naidoo, P., Engelbrecht, A., Lewis, S., & Kekana, B. (2009). Visual-motor integration (VMI) -- A predictor for handwriting in Grade 0 children. *South African Journal of Occupational Therapy*, *39*(2), 18-21.

McBride, M., Pelto, M., McLaughlin, T. F., Barretto, A., Robison, M., & Mortenson, S. (2009). The effects of using Handwriting Without Tears® procedures and worksheets to teach two preschool students with severe disabilities to write their first names. *The Open Education Journal*, *2*, 21-24.

Morris, K., McLaughlin, T. F., Derby, K. M., & McKensie, M. (2012). The differential effects of using *Handwriting without Tears® and Mat Man* materials to teach seven preschoolers prewriting skills using the draw a person with sixteen specific body parts. *Academic Research International*, *2*(1), 590-598. Retrieved from: http://174.36.46.112/~savaporg/journals/issue.html

Neuman, S. (2004). Introducing Children to the world of writing. *Early Childhood Today*, *18*(4), 34-38

Olsen, J. Z. (1998). *Handwriting without tears* (Workbook). Brookfield, IL: Fred Sammons, Inc.

Olsen, J. (2005). Handwriting without Tears® : bridging the educational gap. *OT Practice*, *10*(3), 7-8.

Roberts, A. (2009). Write on!. *Parenting School Years*, *23*(10), 102

Siegel, S. (1956). *Non parametric statistics for the behavioral sciences.* New York: McGraw Hill.

Thompson, J., McLaughlin, T. F., Derby, K. M., & Conley, D. (in press). Using tracing and modeling with a *Handwriting without Tears*® worksheet to increase handwriting legibility for two preschool students with developmental delays. *Academic Research International, Vol.2*(2), Retrieved from: http://www.savap.org/journals/vol2n2.html

ISSN-L: 2223-9553, ISSN: 2223-9944
Vol. 2, No. 2, March 2012

Figure 1: The number of total handwriting points for Group 1 during baseline (session 1) and Handwriting without Tears® (sessions 2 though 8).

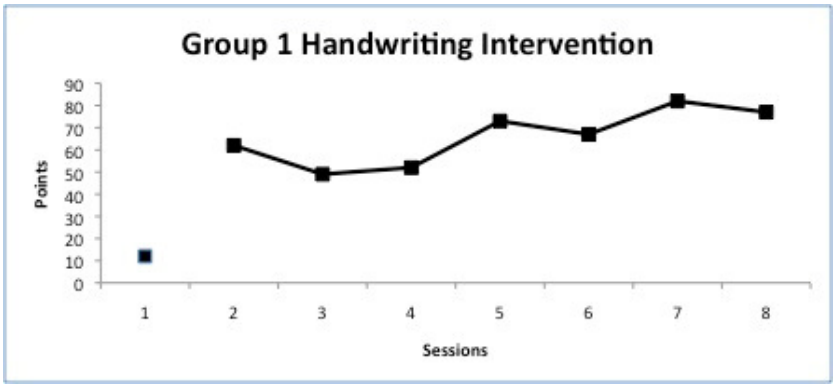

Figure 2. The number of total handwriting points for Group 2 during baseline (Session 1) and Handwriting without Tears® (Sessions 2 though 8).

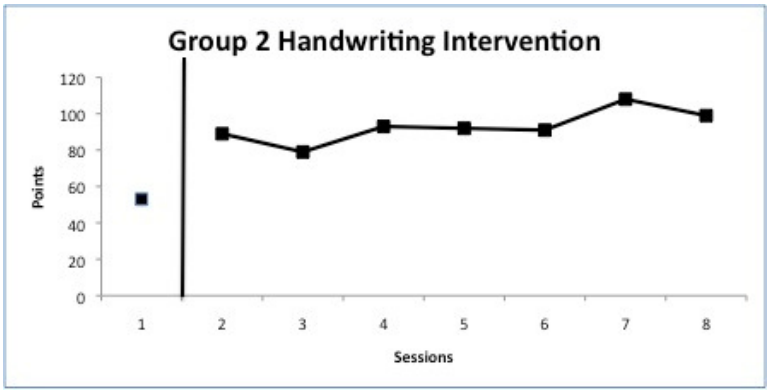

Figure 3. The number of total handwriting points for Group 3 during baseline (session 1) and Handwriting without Tears® (sessions 2 though 8).