

The Effects of Using *Handwriting without Tears*[®] Procedures and Worksheets to Teach Two Preschool Students with Severe Disabilities to Write their First Names

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Abstract: The purpose of this study was to shape letters using tracing procedures based from *Handwriting Without Tears*[®] program [1]. This writing program was implemented to teach two preschool students with disabilities to write their first name. The participants were enrolled in a self-contained special education classroom and each participant had little or no skills in handwriting. Since both students are moving into kindergarten next year, this was as an important goal to teach each participant to write their names. The outcomes indicated that during baseline, neither student could legibly write the letters in their first name. During the first intervention, the students traced one specific letter in their name using *Handwriting without Tears* worksheets. In the second intervention, the students traced the specific letter and traced their name over a yellow marker. In the third intervention, the students continued to trace their specific letter and traced their name over a yellow marker with starting dots. The results suggested that tracing letters using *Handwriting without Tears*[®] worksheets and tracing name over yellow marker was beneficial to teach to preschool students with disabilities to write their name.

Preschool and special education personnel have long been concerned with the teaching techniques that are most effective in developing functional skills with students with mental retardation [1-4]. Several techniques of behavior analysis have been shown to be effective in teaching children handwriting skills [5-8].

Some research concerning the instructional formats for elementary and secondary students without disabilities on the acquisition and fluency of handwriting has taken place [9-13]. These suggestions from the research have ranged from ways to evaluate handwriting [14, 15], to how a classroom teacher can implement various instructional aids such as tracing in their handwriting program [16].

Behavioral research dealing with handwriting has also evaluated the effects of consequences for the handwriting with primary students [17]. In an early study, Hopkins *et al.* [17] found that gradually decreasing the time that pupils could work and engage in free-time activities in a playroom could increase the rate of letters formed per minute. Also, no systematic increases in the rate of errors were noted when the instructional and playroom time was reduced. McLaughlin [18] found that when a token (point) economy was implemented, it could increase the rate and legibility of handwriting with a group of elementary students with behavior disorders. Increases in legibility and rate were approximated that found with a non-disabled student sample from the same elementary school. When rated by relevant judges, other teachers [19], legibility scores for handwriting approximated that of non-disabled peers.

McLaughlin and Walsh [22] examined the use of error correction to the use of response cost on the rate of legible handwriting during creative writing with middle school students with mild to moderate disabilities. McLaughlin *et al.* [20] found that both procedures decreased student errors, but also reduced the number of letters attempted. When students were asked which procedure they enjoyed the most, they were not positive regarding either intervention. When data were gathered from other teachers in the building regarding the legibility of student work, most to the teacher's that these students' handwriting was legible to them and maybe choosing another skill or behavior to improve would have been more appropriate.

With high school students, Sweeney, Salva, Cooper, and Talbert- Johnson [21], implemented a self-evaluation procedure that improved the handwriting legibility of five high school students with disabilities. McLaughlin and Walsh [22] examined the systematic instruction for teaching adolescent students with disabilities to write their own name. Using a combination pre- and posttest multiple baseline design, systematic instruction that included prompting, praise, and task analysis improved first-name writing skills to middle school students with moderate mental retardation. A recent study by Park, Weber, and McLaughlin [23], found that employing prompts to preschool children with disabilities could improve their ability to write their names. These prompts could be faded with no decline in their handwriting performance. Several authors [1, 2, 24-26] have commented that being able to write one's name is a functional skill that can be used for writing checks, filing out a job application, or communicating with others. Handwriting should be part of the school curriculum for both general and special educa-

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tion [24-26]. Graham and his colleagues [22, 25, 26] have also suggested that handwriting should be taught using tracing, daily practice, common strokes, and through the use of prompts.

The purpose of this study was to shape letters using tracing procedures based from *Handwriting without Tears* program [1]. This was implemented to teach two preschool students with disabilities to write their first name. For each participant, this skill was judged to be an important academic skill needed for his or her successful transition to a general education kindergarten classroom. A second purpose was to determine if *Handwriting without Tears*[®] Workbook materials could be employed with very young children with severe disabilities. The final purpose was to begin to develop an evidence base for the *Handwriting without Tears* materials [1].

METHOD

Participants and Setting

The participants of the study were two male preschool students with disabilities in a self-contained special education classroom. Both had been diagnosed by a school psychologist and a local pediatrician. The severity of their behaviors required special placement in a special day preschool for preschool students with severe disabilities. Participant 1 was labeled as a 6-year-old boy with autism and behavior disorders. One of his IEP goals was to improve the writing of his first name using capital letters. He engaged in minor forms of self-stimulatory behavior and was quite noncompliant at times. His behaviors required his placement in a special day school for preschool children with severe disabilities. Participant 2 was a 5-year-old boy labeled with developmental delays, behavior disorders, and tremors. One of his IEP goals was to improve the writing of his first name. Participant 2 was viewed by the teaching staff as needing additional work in his academic skills. Both had made enough progress both socially and academically, that placement in a general education transitional kindergarten setting was possible in the next academic year.

The study took place in a special education preschool classroom located in a special day school. The number of adults in the classroom ranged from three to four throughout the school day. This school housed special programs for children with autism and other severe disabilities as well as, the local Head Start program. Both participants attended the same school but were enrolled in different classrooms. Participant 1 attended the preschool for both sessions, while Participant 2 only attended the second session in the afternoon. Both classrooms were self-contained classrooms with less than six students in each classroom.

Data were collected in the beginning of the afternoon at a table set apart from the rest of the students. Each session lasted up to five minutes and included one-on-one instruction and monitoring by one of the first two authors. Each participant's data were gathered individually. These data were also taken as part of the State and NCATE Accreditation Standards to document the ability of special education candidates to change student behavior, and to provide evidence of using evidence to change teaching procedures [27]. Due to atten-

tion and behavioral deficits, Participant 2 was given with a gummy bear after the completion of each teaching session.

Dependent Variable and Measurement Procedures

The dependent variable was the total number of points per letter for each participant. Each letter was measured using the *Handwriting without Tears* formation criteria. These criteria consisted of slant (1 point), formation (1 point) and size (1 point). Therefore, each letter was worth a total of three points. These data were gathered following the verbal prompt "Write your name". Each of the participants was given a data sheet on which to write their first name. These data were collected four days a week for approximately seven weeks.

Experimental Design and Conditions

A multiple baseline design [28] across teaching procedures and participants was used. A description of each follows.

Baseline: Both participants were given a lined sheet of paper and a choice of a marker with the prompt "write your name". For Participant 1, and baseline data were collected over three sessions, and each letter was scored based on the three criteria of slant, size, and formation. For Participant 2, baseline was collected over four sessions, and each letter was again scored based on the three criteria of slant, size, and formation.

Handwriting Without Tears[®] letter worksheet (Intervention 1). For each session after baseline the participants were given a *Handwriting without Tears Letter Worksheet* for their specific letter. Each worksheet had the specified letter four times in light gray. The participants were required to trace the letter on the page. Then the participants were given lined paper as in baseline and prompt, "Write your name".

Handwriting Without Tears[®] letter worksheet and tracing yellow letters (Intervention 2). For each session, the participants were given a *Handwriting without Tears Letter Worksheet* for their specific letter. Each worksheet had the specified letter four times in light gray. The participants were required to trace the letter on the page. Participant 1 was given lined paper with his name written in yellow marker and was given prompt "Write your name". Participant 1 then traced his name and was graded only on the specific letter worked on in the day. Participant 2 was given lined paper with the specific letter written in yellow on the sheet and was given the prompt "Write your name". Participant 2 then traced the letter and was graded only on that specific letter.

Handwriting without Tears letter worksheet and tracing yellow letters with start dots (Intervention 3). For each session, the participants were given a *Handwriting without Tears Letter Worksheet* for their specific letter. Each worksheet had the specified letter four times in light gray. The participants were required to trace the letter on the page. Participant 1 was given lined paper with his name written in yellow marker with start dots and was given prompt "Write your name". Participant 1 then traced his name and was graded only on the specific letter worked on in the day. Participant 2 was given lined paper with the specific letter written in yellow with start dot on the sheet and was given the

prompt “Write your name.” Participant 2 then traced the letter and was graded only on that specific letter.

Reliability of Measurement and Fidelity of Implementation of the Independent Variables

Reliability data for the dependent variable were collected for 100% of sessions for both participants. The author working with the participant first scored the letter written on the lined paper then after school each day the other author scored the same letter. The number of agreements was divided by the number of agreements and disagreements and multiplied by 100. Agreement as to the number of points earned ranged from 75% to 100% with an overall mean of 96%.

Data regarding the implementation of the various experimental conditions were also gathered on three separate occasions. Another adult unaware of which intervention was taking place came to the classrooms and observed each of the researchers working with their participant. The adult was given a description of the various experimental conditions and asked to determine which phase was being implemented that day. Agreement as to the intervention being implemented was 100% for each of these observations.

RESULTS

Overall the results showed that once the participants began the second intervention (tracing *Handwriting Without Tears* worksheet and tracing letters over yellow marker), the quality of letters increased (Fig. 1). During baseline and trac-

ing *Handwriting without Tears* worksheet, Participant 1 and 2 both scored zero points for the letter they were working. After the *Handwriting without Tears* worksheet was paired with the tracing over the yellow letters, (intervention 2) Participant 1’s scores improved to a mean of 1.2 with a range of 0-3. Participant 2 also improved to a mean of 1.0 with a range of 0-2. The addition of the start dots with the *Handwriting without Tears* worksheet and tracing the yellow marker, Participant 1’s performance was stable at 2.0 points per letter. Participant 2 decreased his performance to 1 point out of 3. This phase ended because of the completion of special education student teaching by the first two authors.

DISCUSSION

Overall results of this study indicated that the presentation of the start dots with the *Handwriting without Tears* worksheet and tracing the yellow marker increased the participants’ ability to write their specific letter of their first name. To fairly assess the presentation of the start dots with the *Handwriting without Tears* worksheet and tracing the yellow marker, the present study would need to be extended because the participants did not have enough time to use that method of writing.

Strengths of the study were that each participant was able to work on letter that was important to his or her name. Based on a functional analysis carried out on the participants, each was attention maintained so another strength was that both participants were able to work one-on-one with an adult and receive a great deal of attention. Another strength

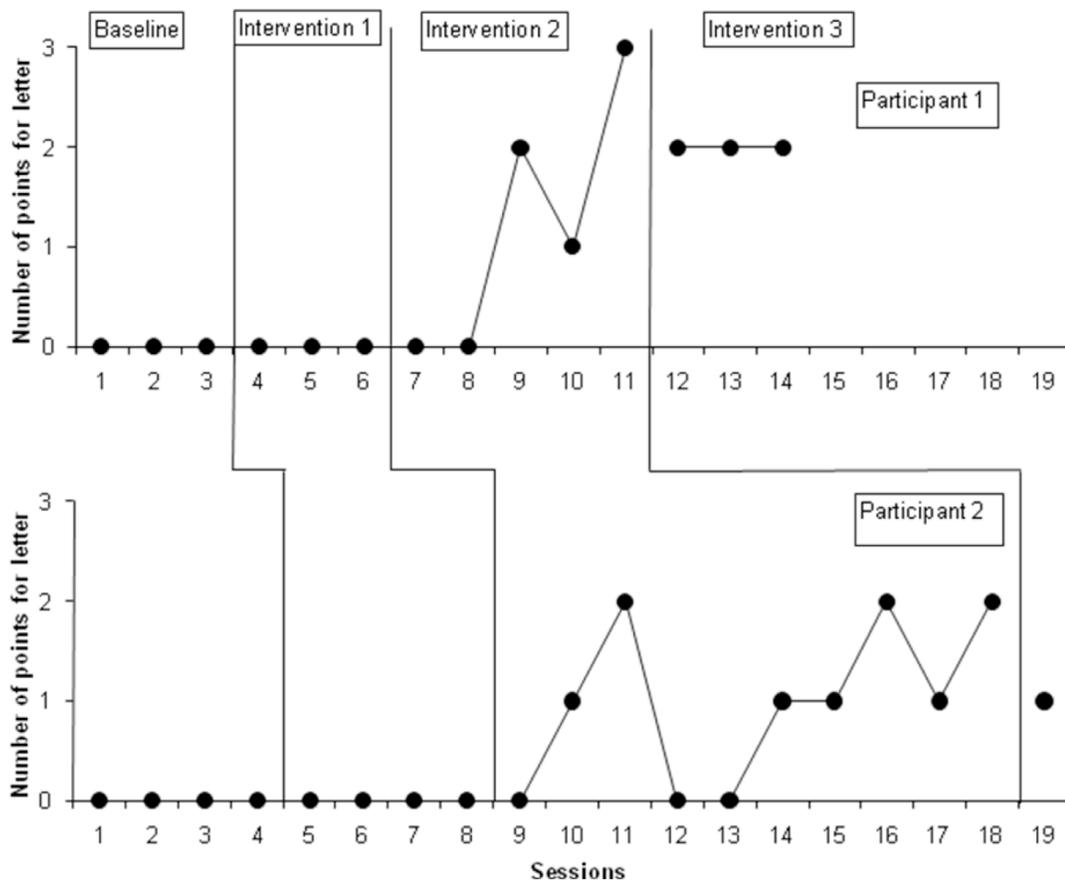


Fig. (1). The results for each participant and their letter writing as scored by the three criteria slant, formation, and size.

is that this study can easily be carried in a classroom setting with more than one student. The data collection and analysis were easy to implement and carry out. Finally, the use of a single case design indicated which type of instruction was effective and for which participant. This should be a strong point in getting preschool special education teachers to gather data and implement the Handwriting Without Tears® curriculum. Also, we were able to determine where one should begin with young children with severe disabilities. Finally, we were able to determine that parts of the Handwriting Without Tears program were effective in teaching two preschool children with disabilities to write their first names.

Limitations of the study included the short time to shape the current letter and the other letters of the participants' names. Also, due to the participants' behavior it was difficult to get the students to comply with the writing of the letters. Participant 2 at times refused to write his letter so he was rewarded with a gummy bear and specific praise after each successful completion of a session. Another weakness in the study was to get full credit for a letter the participant needed to have correct formation, slant, and size. The researchers found that it was more beneficial for the participants to have the letters legible to read, but for data purposes needed to grade on formation, slant, and size. Finally, a longer analysis of employing the handwriting materials appears warranted. In the present analysis, data were gathered for a short period of time and a longer seems appropriate.

One of the purposes of the research was to determine if preschool children with severe disabilities would be appropriate for using the District's new handwriting curricula. From the data presented here, each participant improved his handwriting skills. At this writing, each of the participants is successfully attending general education kindergarten classrooms. Finally, the outcomes of the present case report provide an indirect replication of our previous work with preschool children with disabilities [23] and those suggested by Graham and colleagues [24-26].

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