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Improving Letter Name Knowledge in Primary Montessori

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Advisor _____

Date _____

Abstract

This action research investigated letter name knowledge gain from integrating a selection of Orton-Gillingham methods into a private Montessori Primary classroom. The methods incorporated included letter name and sound drill, three-letter word practice, vowel game, and sand writing. Eight students, four and five years of age, were included in the study. Sources of data collection include student artifact, teacher assessment, student attitude inquiry, and teacher observational data. Students displayed an overall increase in attitude toward learning letter name and six out of eight students showed an increase in letter name knowledge for both uppercase and lowercase letters. Because of the students increase in enthusiasm for learning letter names and their knowledge gain, I will continue to use the Orton-Gillingham methods. I will also introduce the remaining methods to reach the students who did not show an increase in knowledge of letter names.

Acquisition of alphabet knowledge is an early literacy focus of preschool and kindergarten programs. Foulin (2005) explained learning letters includes being able to recognize letter shape in both uppercase and lowercase form, the name for each letter and the sounds the letters represent (p.129). Phonological awareness at the beginning of kindergarten also played a role in predicting grade four reading comprehension and fluency but was “mediated by reading skills at the end of kindergarten and grade 1” (Leppanen et al, 2008, p.559). Leppanen, Aunola, Niemi, & Nurmi (2008) conducted a longitudinal study on alphabet knowledge in students before kindergarten, at first grade and then again at fourth grade. The results demonstrated that letter knowledge before kindergarten was the best forecaster of reading fluency and reading comprehension at the end of grade four (Leppanen et al, 2008).

Foulin (2005) explored studies and “findings regarding the influence of letter-name knowledge in early and formal literacy” (p.129). He found letter name knowledge to be a necessity for students to reach established levels of literacy (p. 145). Piasta, Purpura, & Wagner, 2010, also found that teaching letter name with the letter sound has been shown to increase the amount of letter names and sounds learned as opposed to teaching letter-sound alone.

A separate study found frequency of letter instruction, the order of letter introduction taught, practice writing each letter, naming the letter while writing it and stating the sound it represents positively effect development of alphabet knowledge (Jones, Clark, & Reutzler, 2013). The Orton Gillingham method has been used as an intervention method for students diagnosed with Dyslexia (Hwee & Houghton, 2011). It is a systematic approach to curriculum enhancement that includes visual, auditory, and

kinesthetic instruction (p. 144). The instructional methods include naming a letter and its sound while writing the letter, a specific order of instructional methods used, practice writing each letter, and a specific order of introducing letters.

Teacher instructional practices have been found to have an effect on alphabet knowledge (Justice et al 2009). Their study conducted in Ohio and Virginia illustrated that students who experience print reference reading (i.e., pointing out letters, tracking the words with a finger, and pointing out words) displayed significantly more growth in alphabet knowledge (Justice et al, 2009).

This review of the literature brings to light the necessity of letter name knowledge in pre-school and its effects on literacy achievements in later years of school. Support for alphabet knowledge development is still being explored through discussions of theories of alphabet knowledge acquisition, methods of curriculum enhancement, and research of systems of tracking progress.

Elementary Montessori teachers at a private Montessori school expressed concern for children entering first grade from Montessori Primary classrooms without knowledge of uppercase and lowercase letter names. The teacher's concerns most notably surrounded the students' lack of understanding when learning correct spelling of words. Parents from the Parent Teacher Student Alliance (PTSA) and teachers with children who have Dyslexia strongly advocated for the Orton-Gillingham methods. One elementary teacher and one Administrator from the school where the research took place received the full 30-hour training in Orton-Gillingham methods. Upon return, the teacher and administrator strongly supported integrating Orton-Gillingham methods in the primary and elementary classrooms of the school. In an attempt to remedy the situation of student

lack of knowledge of letter names, the administration and the PTSA chose to fund a compact training for all Elementary and Primary teachers of the school in Orton-Gillingham methods beginning in the 2014-2015 academic school year.

For the action research, a selection of Orton-Gillingham curriculum enhancement methods were used in a Primary Montessori classroom with students two and a half years to five years of age. Data was collected from eight students, two girls and six boys, who participated in a two-hour pre-kindergarten group in the afternoons. Three students were five years of age and the remaining five were four years of age. Most days, the afternoon pre-kindergarten began with the Orton Gillingham curriculum methods as a group lesson. This was already part of their routine before the data collection occurred and was maintained to ensure consistency for the students.

Due to the importance of letter name knowledge in preschool, and in later years of school, it is wise to investigate methods of curriculum enhancement to support letter name knowledge acquisition. The question guiding this research is: How will implementing Orton-Gillingham curriculum enhancement methods affect students' knowledge of uppercase and lower case letter names in a primary Montessori classroom?

Methods

A selection of Orton-Gillingham instructional methods was integrated into a Primary Montessori classroom. Throughout five weeks of data collection, a variety of data sources were used to monitor student progress and determine the results of the integration strategies. The data sources included student artifacts, teacher observational data, an attitude inquiry, and an assessment form.

The classroom consisted of eight four and five-year-old students who participated in an afternoon Primary Montessori program. This group was chosen for the reasons of working with a smaller group of pupils who were of similar age and maturity level. The group had varying levels of academic interest and abilities. I was already in practice of introducing a letter a week. The letters used in this action research included: u, b, r, f, n. These letters were chosen because they were the letters of the week during the time of the action research data collection. The order in which the letters were presented was based on the Orton-Gillingham suggested list.

The first data source used was a student artifact where students were instructed to write a particular letter in uppercase and lowercase form (see Appendix A). One letter was asked at a time. I instructed the students to draw a smiley face if they did not know how to write the letter. The area used to write was a box with no writing line since penmanship was not the focus, just letter shape. Some students were not able to write a letter when given the name; however, they were able to identify the letter when they saw it in writing. To collect data for both abilities, the student artifact and a teacher-generated assessment form were used.

The teacher-generated assessment from (see Appendix B) was designed to collect a baseline of student knowledge, track knowledge gained, and assess student learning post-intervention. For the assessment, I began by writing a letter and asking the student to give the letter name. Each letter was written in uppercase and lowercase form. Students were assessed individually.

After knowledge base data was gathered, an inquiry data source was used (see Appendix C) to gain knowledge of student attitude toward learning letter names. The

teacher asked the students to share how they felt about learning letter names by highlighting one of the faces. The word highlight had to be defined, and the teacher instead asked the students to color one of the faces to share how they felt. The representation of each face was explained. Once understanding was apparent, each student was given a marker and the inquiry data sheet. The students colored in the faces and returned the paper and marker to the teacher.

The following Monday, I began tracking student progress daily with an observational data source (see Appendix D). This data source was used to monitor student attendance, participation, days we were able to meet and enthusiasm for each method.

The intervention methods chosen were already in use in the classroom. The same order of methods was used each day. First, letter drills where the teacher would hold up a card with one letter on it and say, U says /uh/. The students repeated then the next letter was held up, and the same process occurred. All five letters were used every day and were mixed up each day to ensure learning was occurring and not memorization of the order.

The next method used was tap and slide. Cards with letters on them were placed on a stand creating three-letter-word combinations. I touched the top of each letter card and stated its corresponding sound. For example, the word cat, /k/ /a/ /t/. Then, I slid my finger across the top of each letter blending the sounds together to pronounce the word cat. The students repeated the process a second time with vocal guidance from the teacher, and again a third time without vocal assistance from me. One card was then replaced with a different card, and a new word was created. The process occurred again

until all of the cards had been used at least once. Letters introduced before the action research began were used to aid in a greater variety of words.

Next, the students participated in the vowel game. The game consisted of five note cards for each student and a set for me. Each note card was a different color, and each card was folded in half with a vowel written on it. All of the white cards had the letter o written on it, the pink had e, the yellow had u, the green had i, and the purple had a. The letters were written on each side of the folded card. The cards were lined up in front of each student and teacher. I picked up one card stating I says /i/. The students would locate their matching card hold it up and repeat I say /i/. The process was repeated for each card. The game was played two consecutive times each session.

The final method used was sand writing. In a small tray, bright orange and green sand were combined to create a thin layer thoroughly covering the bottom of the tray. I wrote a letter and underlined it while simultaneously saying its name and corresponding sound. The process was repeated to display upper and lowercase form. The student was then given the tray and repeated the process. Each week a letter was added, and the students drew upper and lower case form of each of the five letters being assessed.

Each method was used every day we were able to meet. They occurred in the same order each time we met: letter drills, tap and slide, vowel game, sand writing. At the end of the five weeks, the attitude inquiry, the student artifact, and the teacher assessment form were used again to finalize observations and collect end point data. The same procedures of initial data collection were followed.

Analysis of Data

At the conclusion of the five weeks, I analyzed the information I gathered using my data sources and looked for patterns. The data sources included a teacher generated assessment, student artifacts, an attitude inquiry, and teacher observations.

The first data analyzed was the teacher-generated assessment. I used this source to obtain a baseline of letter name knowledge from each student. When analyzing the data, the student responses were coded one for no, and two for yes on their ability to name a letter when it was shown. One apparent theme appeared in the analysis. Baseline knowledge of lowercase letter names was greater than baseline knowledge of uppercase letter names. Only one out of eight students was able to name any of the upper case letters (U,B,R,F,N).

The teacher-generated assessment was used again after the five week period using the same coding, one for no the student was not able to name the letter when it was shown and two for yes the student was able to name the letter when it was shown.

Figure 1 and Figure 2 illustrate the number of students who were able to name letters before and after the intervention for the uppercase and lowercase letters being evaluated.

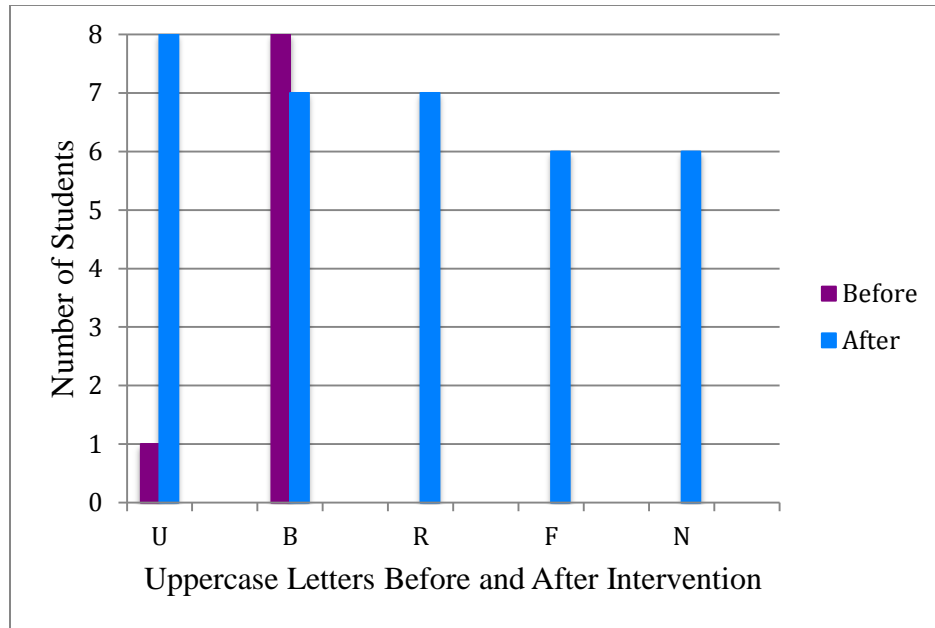


Figure 1. Uppercase Letter Name Knowledge. A bar graph illustrating the number of students who were able to name uppercase letters before and after the intervention for letters U, B, R, F, and N.

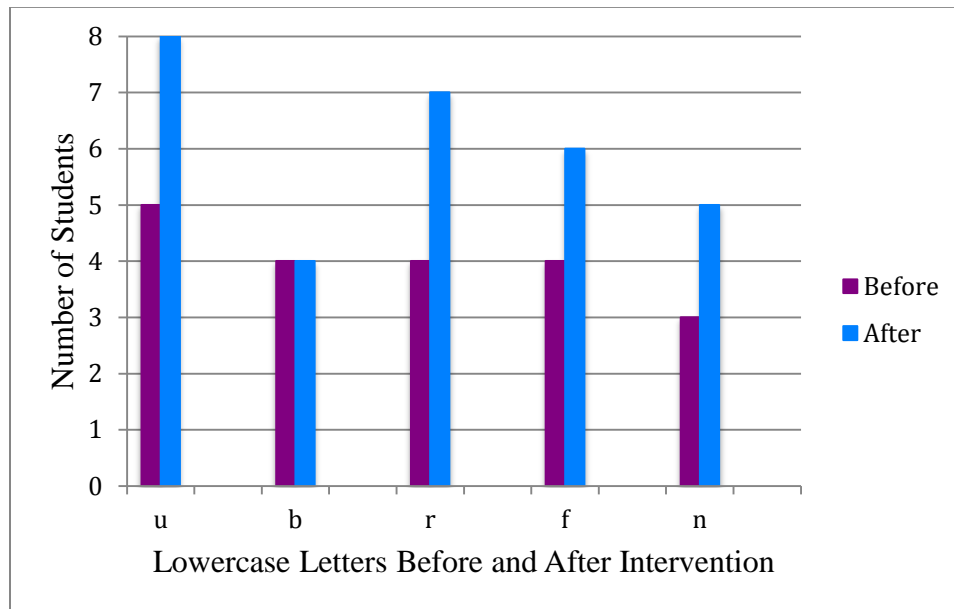


Figure 2. Lowercase Letter Name Knowledge. A bar graph illustrating the number of students who were able to name lowercase letters before and after the intervention for the letters u, b, r, f, and n.

The second data source analyzed was the student artifact. The purpose of this data source was to determine if students could recall the shape of a letter with only a verbal cue of the letter name. This data source was used at the beginning and at the end of the five week period. When coding the data, one was used for no the student was not able to make the letter and two for yes the student was able to make the letter. The number of students who were able to write uppercase letters was greater than the number of students who were able to write lowercase letters. Figure 3 and Figure 4 below illustrate an increase in the number of students who were able to write letters for all uppercase and lowercase letters.

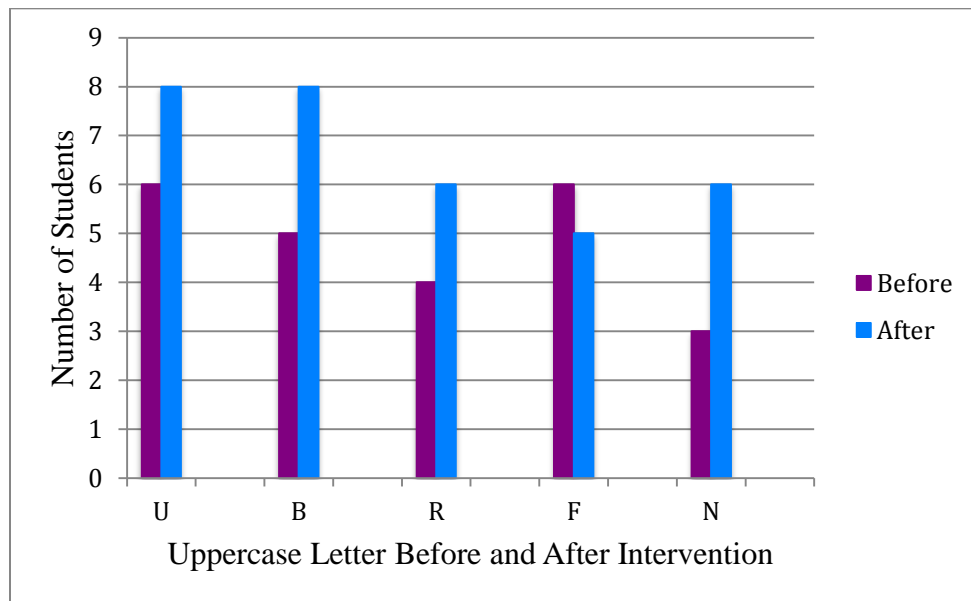


Figure 3. Reproduction of Uppercase Letter Shape with a Verbal Cue. A bar graph illustrating number of students who were able to write uppercase letters, when provided with a verbal cue of the letter name before and after the intervention.

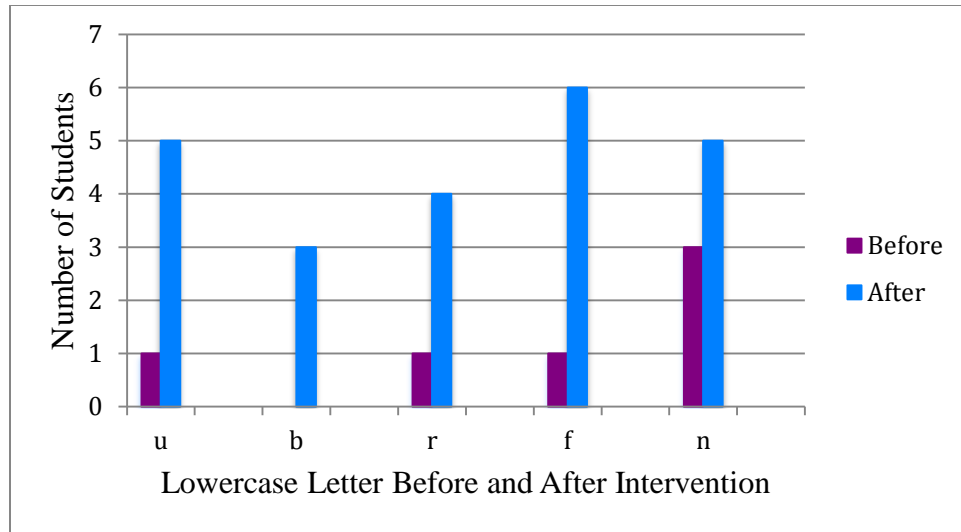


Figure 4. Reproduction of Lowercase Letter Shape with a Verbal Cue. A bar graph illustrating number of students who were able to write lowercase letters, when provided with a verbal cue of the letter name before and after the intervention.

The third data source analyzed was the attitude inquiry. Students were asked how they felt about learning letter names and were directed to color in the face that matched their feelings. The faces provided were: a face with a smile for I like it, a face with a straight line for a mouth for I don't know, and a face with a frown for I don't like it. When coded, the frown was coded with a one, the straight mouth was coded with a two, and the smiley face was coded with a three.

Figure 5 and 6 below illustrates that the overall attitude toward learning letter names increased. However, one student had a decrease in attitude toward learning letter names.

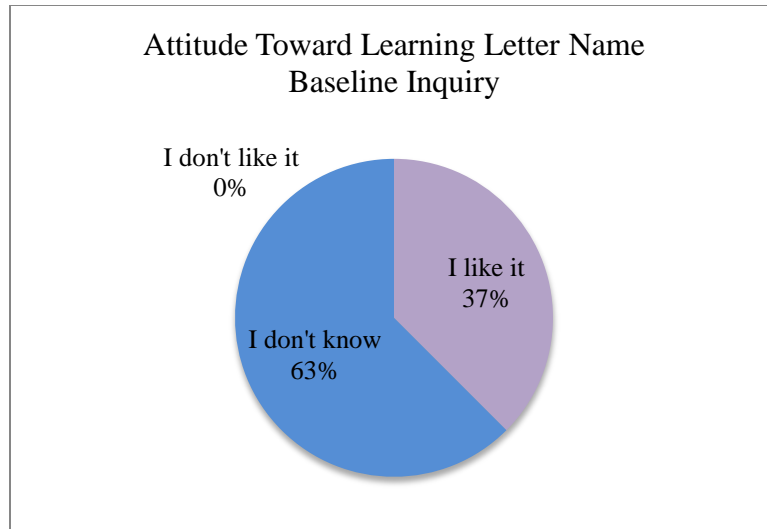


Figure 5. Attitude Toward Learning Letter Name Baseline Inquiry. A pie chart illustrating the baseline inquiry data of student feelings for attitudes toward learning letter name.

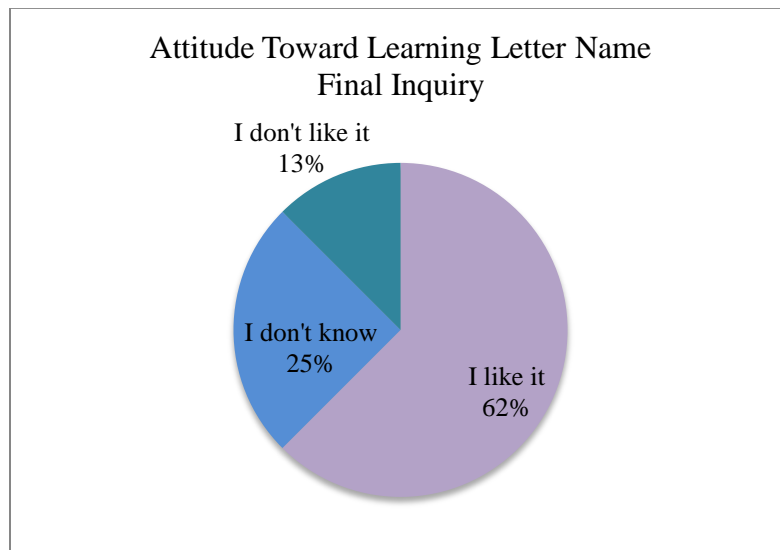


Figure 6. Attitude Toward Learning Letter Name Final Inquiry. A pie chart illustrating the final inquiry data of student feelings for attitudes toward learning letter name.

The final data analyzed what the qualitative observational data collected throughout the five weeks. This data noted student interest in the various methods being used, student participation, attendance, as well as frequency of implementation of the intervention.

During the flash card drills (ie. f says /f/) the students did not complain, but were not actively engaged in the process. Instead, the students were wandering to get water, going to the bathroom, and rolling around on the floor. Toward the end of the five-week intervention, the students started a game to see if they could say the letter name and sound before the teacher could which resulted in laughter and a greater number of students participating. However, some students were bothered by the noise, and as a group with guidance from the teacher, the students decided the game was okay “as long as inside voices were used.”

Three-letter phonetic word combinations followed the flash card drills. The first few days, students repeated the individual sounds then the blended word after the teacher. During the second week of the intervention, some students were reading the words without aid from the teacher. During the third week of the intervention the students began to laugh when “nonsense words” were displayed. This was a change in attitude and student behavior. Nonsense words were words that we could not find in our classroom children’s dictionary. The students decided these words were not real and would laugh each time they appeared. By the end of the third week a couple students began to request, not real words because they were funny and they liked it. The laughter could be representative of the 25% increase in the attitude inquiry previously displayed in Figure 5.

The vowel game followed the three letter word combinations. The students were already familiar with many of the vowels, as we had previously been implementing this method. During the second week of the intervention, I made vowel cards with uppercase letters only. During sand writing many students showed knowledge of the lowercase vowels but not of their upper case form. After the change in the vowel game, a gradual increase in student knowledge of uppercase vowels emerged. Only two rounds of the vowel game were played each day. When more rounds were attempted some students lost interest and were playing with or damaging the cards and not participating in the game. I think this occurred because the students knew the letters and their sounds and did not feel they needed to participate any longer.

Students were most engaged when doing sand writing. This was observed by their attentive behavior. The students sat silent for each other and patiently waited for their turn. During their turn each student carefully touched the sand and moved their finger as they wrote the letter. The process was not rushed and every student was eager to try more letters. This method was the last of the four methods used and acted as a motivator for the students to participate and be respectful of one another. Their concentration was very apparent and the students respected each other during this method.

Each student was asked to write, in the sand, one letter at a time after the verbal cue was given. At times, the students would struggle when trying to remember what a letter looked like and would ask for help from the teacher. During the third week of the intervention, some of the students asked if they could write different letters (in addition to U, B, R, F, N,). To maintain interest and to encourage consistency, the students were permitted to write their name or three of their favorite letters after they had written U, B,

R, F, and N in uppercase and lowercase form. By the end of the intervention the students needed less help from the teacher in forming their letters. The increase in letter formation for both uppercase and lowercase letters is displayed in Figures 4 and 5.

A couple of the students had days when they only wanted to participate in the sand writing and not the rest of the methods. There were also days when an outburst disrupted the group learning and the intervention. The outbursts included students yelling or messing up their classmates work when they were not chosen first for sand writing. Both situations were responded to as a class. The students decided a classmate could still participate if they stopped their disruptive behavior and were respectful for the rest of the intervention methods that day. If evaluated again, this could be suggestive of the setting not being supportive of their needs. Throughout their day, these students frequently require the teachers' undivided attention whether it is getting dressed to go outside, eating lunch, or sharing at circle. These students may prefer a one on one focus.

Some days I was unable to carryout the intervention due to classrooms needing to combine, days the school was closed, and student interest. During the five weeks, there was a total of 17 days of implementation of the intervention. Two students missed five days and one student missed three days. Absences could be a factor in the lack of knowledge gained from these students, however, one of the students had almost complete knowledge of letter name and form even after missing several days.

My primary research question was: How will implementing Orton-Gillingham curriculum enhancement methods affect students' knowledge of uppercase and lowercase letter name in a primary Montessori classroom? Based on the data collected, there was an increase the students' ability to name a letter when presented with its form (see

Figures 1 and 2). There was also an increase in the students ability to write the letters when presented with a verbal cue of its name (see Figures 3 and 4). Not all of the students were able to name or write all of the letters, however 75% of the students displayed an improvement in knowledge. As a result of the data analysis, it can be observed that the Orton-Gillingham curriculum enhancement methods had a positive effect on students' knowledge of uppercase and lowercase letter name.

Action Plan

Overall, my research displayed a positive effect on student knowledge gain and feelings toward learning letter names. The students asked to make silly (nonsense) words and to do sand writing. The students experienced small group instruction in a supportive environment. Results showed an increase in confidence occurred in the children through the repetition of letters and the methods used. Some participants displayed teamwork and leadership qualities by taking initiative to help other students remember and write letter shapes. These participants helped fellow students by showing them how the letter was drawn. The students were inspired to look up words in the dictionary when they did not know the meaning.

Most of the students expressed positive feelings toward learning letter names. Outside of the inquiry, the students requested sand writing and the three-letter word drill most often. The students made their own game out of the vowel game and the flash card drills. I thought this was interesting and in the future I would like to observe the games the students make and try to present the methods as such. I feel presenting the methods as a fun work will create more enticement toward letter sound and name practice.

The results of the action research illustrated an increase in letter name knowledge for most of the students. During the action research, three of the eight students began reading the three letter words without the need to verbally decode them first. These three students also began reading early reader books. This growth was not expected nor monitored, just noted in the teacher observation notes.

I would like to continue to use the methods implemented in the classroom with a few changes. First I would like to work with some students one on one, as it is more conducive to their learning style. A couple of students were not as vocal as other students in the group setting. One-on-one would allow me to gain a full understanding of their gain. I would also like to introduce a new letter every day at the beginning of the school year instead of a letter a week. This would allow time later in the year to focus on the letters missed or misunderstood. Finally, I would like to make flash cards with uppercase letters for practice to create more exposure the uppercase letters. Sand writing and the modified vowel game were the only uppercase letter exposure the children received in this action research. Turnbull, K.L., Bowles, R.P., Kibbe, L.E., Justice, L.M., and Wiggins, A.K. (2010) examined four hypotheses about lowercase letter knowledge. The study found that knowledge of uppercase letters displayed the most significance in knowledge of lowercase letters.

In the future, I would like to track student progress for all ages and monitor the strategies to see if there is a correlation between age and the students' favorite method. I feel some of the older students enjoyed the three-letter-word method more than the younger students. This may also be related to the amount of letter name and sound knowledge the older students had when compared to the younger students. Further

investigation would help determine whether age or knowledge is related to a specific method. I also wonder if integrating some of the other methods from the Orton-Gillingham training would support progress and attitude for all students. The motivating factor is to find out if more students can be reached or their enthusiasm for learning letter names can be increased.

The results from this research show an overall positive influence on both student feelings toward learning letter names and their knowledge gained. It is my belief that the issue of students not knowing letter names when entering Montessori first grade from Montessori Kindergarten can be reduced by using the Orton-Gillingham strategies in conjunction with the Montessori curriculum and materials.

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Appendix A

Data Source 3- Artifact (Student)

Directions read to students: "Please write letter when you hear its name"

Student:	Student:
Student:	Student:

Appendix B

Data Source 3- Artifacts *Teacher Generated Assessment Form*

Pre-Intervention Assessment						
Week	Case	Student	Student	Student	Student	Student
Lower						
12-Jan-15	u					
19-Jan-15	b					
26-Jan-15	r					
2-Feb-15	f					
9-Feb-15	n					
Upper						
12-Jan-15	U					
19-Jan-15	B					
26-Jan-15	R					
2-Feb-15	F					
9-Feb-15	N					
Post-Intervention Assessment						
Week	Case	Student	Student	Student	Student	Student
Lower						
12-Jan-15	u					
19-Jan-15	b					
26-Jan-15	r					
2-Feb-15	f					
9-Feb-15	n					
Upper						
12-Jan-15	U					
19-Jan-15	B					
26-Jan-15	R					
2-Feb-15	F					
9-Feb-15	N					
Key	Knowledge of letter name			Y = yes N = no		

Appendix C

Data Source 1- Inquiry
Discussion of Student
Attitude Toward Learning Letter Names

Student Name _____

Teacher: *explain to student*, “I’m going to ask you a question. Please tell me how you feel by highlighting one of the faces.”

“If you like it, highlight the happy face.”
(*Point to Face*)

“If you don’t know how you feel, highlight the face that has a straight mouth.”
(*Point to Face*)

“If you don’t like it, highlight the sad face.”
(*Point to Face*)

“Are you ready for the question?”

Teacher: *ask student*, “How do you feel about learning names of letters?”



Appendix D

Data Source 2- Observational Data

Day	Date
Instructional Methods Used/Notes	Relevant Observational Data

Day	Date
Instructional Methods Used/Notes	Relevant Observational Data