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Inclusion of Special Needs Students in a Montessori Elementary Classroom

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Inclusion of Special Needs Students in a Montessori Elementary Classroom

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in fulfillment of final requirements for the MAED degree

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Acknowledgements

Abstract

This study project was designed to study the effectiveness of implementations to aid in the successful inclusion of special needs students in a Montessori elementary classroom. This study also looked at the impacts that inclusion has on special-needs students. This study took place in a small Montessori upper elementary classroom of fourth through sixth grade in the southern United States. The implementations included self-control building, self-regulating and calming activities, Grace and Courtesy lessons, team building activities and oral reading, discussions and journal entries of *Wonder* (Palacio, 2012) Data was collected using student journals, an observational tally, researcher's field journal, discussion notes and parent pre mid and post surveys The findings indicate there is a correlation of use of the implementations and a reduction of inappropriate interactions. It is recommended that future studies focus on a larger subject base as well as a more longitudinal period of implementations and data collection.

Keywords: inclusion, special needs, Montessori, upper elementary

The Montessori method of educating all students was borne from Maria Montessori's work with institutionalized special needs students. Montessori was an innovator for her time, not only becoming Italy's first female physician but would go on to create an educational system that has endured through time. After she became a medical doctor, she turned her attention to working with institutionalized children. During this period of history in the late 1800's, it was commonplace for families to place their children with intellectual and/ or physical disabilities in an institution. More than 120 years have elapsed since Montessori first worked with institutionalized children in the State Orthophrenic School in Rome, Italy, where she was a pioneer in working with profoundly disabled children (Kramer, 1988; Lillard, 2007; Standing, 1984). After she observed that these institutionalized children had nothing to occupy themselves except for scraps of food to play with, Montessori went in search of information (Montessori, 1967).

Montessori intensely studied the works of both Jean-Marc Gaspard Itard, a French physician, and Edouard Seguin, a French psychologist, to develop her concepts to use with the institutionalized children (Kramer, 1988; Lillard, 2007; Standing, 1984). Montessori credits Itard as the founder of scientific education (Montessori, 1967). She further noted that Seguin took the experiences of Itard as a starting point, and he worked for ten years to improve on it (Montessori, 1967). Montessori was also inspired by the manipulatives Seguin developed (Montessori, 1967).

Building on these concepts, Montessori spent two years, usually working eleven hours a day, with the children taken from the asylum doing what she termed "remedial education" (Lillard, 2007; Montessori, 1967). She worked with these institutionalized children to develop a program specifically designed to teach academic and life skills, and model social skills

(McKenzie & Zascavage, 2012; Montessori, 1967). At the end of two years, many of these institutionalized students with diminished intellectual abilities passed state educational tests designed for "normal children" or neurotypical children and scored in the normal range (Montessori, 1967). This event aroused international attention, with newspapers worldwide marveling at what Montessori helped these institutionalized students achieve (Lillard, 2007). Through her observation and work with the institutionalized children, the foundations of her philosophy and method of educating all students developed (Montessori, 1967).

A few years later, an opportunity arose, and Montessori began to work with the impoverished children from a San Lorenzo tenement. According to Montessori, these children were deemed of average intelligence (Montessori, 1967). Montessori used similar, and at times, the same materials as those she developed at the State Orthophrenic School with the children of San Lorenzo (Montessori, 1967). Montessori opened her first Casa dei Bambini in 1907 in the San Lorenzo district, using her scientific approach to education. Montessori spent the balance of her life developing and refining her educational method. Her work in this field contributed to the growth of the Montessori educational movement that eventually went worldwide.

Montessori schools are found throughout the world in both public and private spheres. Currently, there is limited research available on special needs students in an inclusive elementary Montessori classroom. Sometimes private schools will not accept students with special needs because they often require more time, have slightly different needs, and are usually the more challenging students to work with (Cossentino, 2010; Shank, 2014). When discussing Anti-Biased Anti-Racist (ABAR) education methods, special needs students are often not included. Research on the value of inclusion of special needs students is crucial since they are often some

of our most vulnerable students. Special needs students need to be included in the ABAR

educational research and implementation.

This research aims to study what implementations can help foster an inclusive

elementary Montessori community with special needs students and the impact of the

community on those special-needs students. The research took place at a small, private

Montessori school located in the southern United States. The school has students from early

childhood through eighth grade. This study took place in an Upper Elementary class of fourth to

sixth grade. In the class where this study was carried out, there were students diagnosed with

Attention Deficit Hyperactive Disorder (ADHD), Autism Spectrum Disorder (ASD), learning

disabilities, Oppositional Defiant Disorder (ODD), and a variety of other unlabeled difficulties.

Theoretical Framework

The theoretical lens used for this research is based on Montessori's scientific approach

to the pedagogy of education. Montessori's first book, *The Montessori Method*, was originally

titled in Italian, *A Scientific Method of Pedagogy as Applied to Education in the Children's

Houses.* When viewed as scientific pedagogy and reintegrated with current medical knowledge,

Montessori education can be broadened to what may be called a scientific and medical

pedagogy. Montessori's scientific approach to education is also known as Montessori's

Educational Theory (Montessori, 1967). Montessori educational theory comprehensively

supports children with disabilities' educational needs within an inclusive environment (Nehring,

2014).

The concepts of Montessori's educational theory were born out of studying profoundly

disabled children and then further refined with neurotypical students. Montessori's scientific

approach to education is a natural fit as a lens for this research since its foundation is rooted in studying and educating disabled children.

This researcher will seek to uncover aspects of inclusion and special needs students' value in a Montessori elementary classroom. The first aspect is looking at implementations used to help the special needs students be successful in a classroom environment. The second aspect is the impact of inclusion on the special needs students in the elementary classroom.

Review of Literature

Although some entities are moving away from the term "special needs," the author has intentionally chosen to use this term for this study because it is used throughout the literature and is broad enough to encompass many of the targeted students. For this study, 'special needs students' refers to those who have learning differences, which include deficits in attention, order and organization, gross and fine motor skills, and perceptual confusion (Pickering, 2004a). The special needs child may also exhibit weakness in oral language development, have difficulty learning the written symbols and patterns of language, and exhibit problems with math abstractions (Pickering, 2004a). Some students also have physical limitations, health conditions, emotional development disorders, and autism spectrum disorders.

The NCES, the National Center for Educational Statistics, projects about 15 percent of the general student population has special needs. (NCES; Pickering 2003a). The number of special education students is rising (Cossentino, 2010; Epstein, Linderman, & Polychronis, 2020). Parents of special needs children often seek out Montessori programs for the inherent individualization (Pickering, 2003a). Thus, the ratio of special needs in a Montessori classroom might be closer to 22 percent (Pickering 2003a).

Montessori's scientific approach to pedagogy brings several tenets to support the special needs students (Montessori, 1967). One aspect is the multi-aged groupings in the classroom; students are not grouped solely by age, but by age range. Montessori said special needs students should be "judged to be intellectually much like normal children some years younger" (Montessori, 1967 p. 33). Pickering (2004a) expanded on this in her research. Pickering (2004a) wrote that special needs students often do not proceed through milestones found in neurotypical students. There are frequent delays in many areas including motor skills, order and organization, and academic areas (Pickering, 2004a). Thus, the multi-age span in a Montessori classroom supports the special needs student.

A second aspect of the Montessori classroom that supports all children, including special needs children, is that they are free to respond to their innate biological processes of development, their sensitive periods, as Montessori (1967) called it, which allows children to optimize their learning. The curriculum is individualized for each child. Children move through the scope and sequence of the classroom as they are ready.

A third aspect supporting all children, especially special needs students, is the many didactic materials Montessori developed to teach a concept concretely (Pickering, 2004a). Montessori devised a multi-sensory developmental method and further designed materials that isolate the properties of a concept. In the sequence of materials, there are varieties of materials that allow for mastery of a concept through repetition. The child is free to repeat the activities until they have internalized a concept (Lillard, 2007). Children explore the materials and activities at their own pace. Children experience external order in a Montessori classroom, which creates an internal order and allows freedom of independence. Freedom of choice and

independent action, in turn, creates self-discipline in all children. (Dattke, 2014; Epstein et al., 2020).

Montessori valued individual rights and recognized each child's potential as the key to humankind's future (Lillard, 1972). According to Shank (2014), educators should work as Montessori taught, through careful observations and selective responses to observed needs). Goertz (2001) cautioned that if individualize education were not encouraged, some of the students with the greatest potential might not excel in expected or easily recognizable ways. The Montessori curriculum is individualized to meet each student's need and encourages a classroom that values all students (McKenzie & Zascavage, 2012).

It is mutually beneficial for both neurotypical children and special needs children to be educated in an inclusive environment (Goertz, 2001). Children are better supported in the emotionally healthier, structurally more flexible, and intellectually more creative environment of the inclusive community (Goertz, 2001). Children immersed in a truly diverse learning community grow up advocating for those who are disabled (Goertz, 2001). Students in an inclusive environment are prepared for life in an inclusive society (Shank, 2014). Educators recognize that neurotypical children must have an opportunity to develop relationships with children who experience a wide range of disabling conditions (Thompson, 1993). Children need to live in a pluralistic community and accept individual differences at an early age (Thompson, 1993).

Implementations for Special Needs Inclusion

Cossentino (2010) addressed the developmental challenges of special needs students and how the special needs students naturally have their needs met through Montessori. Cossentino (2010) contended that Montessori educators are, at the least, close cousins to special educators.

Some of the standard support strategies for special education students are freedom of movement and choice and uninterrupted time for extended periods of deep concentration (Danner & Fowler, 2015). These strategies are also essential pillars of Montessori practice (Danner & Fowler, 2015). Researchers note that children who engaged in self-selected activities appear motivated and show more concentration (Cossentino, 2010). McKenzie and Zascavage (2012) discussed the specific instruction requirements for special needs children. Included in the discussion was the importance of the three-year age span in a Montessori classroom. Montessori (1967) believed that peer support was essential to effective learning and social development.

The scope and sequence of instruction in each Montessori classroom offer children a three-year curriculum span, from introductory activities through advanced materials and concepts. The Montessori materials themselves provide opportunities for all children to learn and express their learning in different ways, aligning with the special education concept of universal learning design, which is a way of teaching and learning that gives all students an equal opportunity to succeed. (Cossentino, 2010.)

The procedures introduced to the child through these presentations and the classroom structure are seen to enhance attention, increase self-discipline and self-direction, order, organization, and a work ethic (Pickering, 1978). Special needs children benefit from the structure, procedures, and curriculum of a Montessori classroom (Pickering, 1978). Pacing is the speed at which the child proceeds through the curriculum and is determined by the child's readiness. McKenzie and Zascavage (2012) also discussed the types of learning appropriate for students with special needs and how Montessori naturally fulfills these needs.

Pickering (1978; 2003a) studied children with learning disabilities for more than 40 years using Montessori's educational theory and offers training for teachers working with these

students. Pickering (2003a) has laid out multiple ways in which teachers can modify the

classroom to meet the needs of special needs students. One accommodation was to have a work

cycle shorter than the typical three-hour block. Another accommodation was for the teacher to

make more choices for the student and give more direct presentations (Pickering, 2003a). She

also suggested that longer lessons should be broken into multiple shorter lessons (Pickering,

2003a). Often in early childhood lessons are given without speech. After the initial presentation,

language was attached to each activity for special needs students, and with each piece of material

is used. (Pickering, 2003a).

Pickering (2003a) discussed the five components for teaching self-control for special

needs children: structure, imitation, direct teaching, work independence, and correction.

Structure refers to the appropriate age expectations and the rules of the room. Imitation is where

the teacher is an example. The teacher must follow the rules to model for the classroom. Direct

teaching is part of the practical life curriculum of Grace and Courtesy (Pickering, 2003a). Grace

and Courtesy lessons assist all students in the classroom in developing kindness and respect

(Epstein et al., 2020). The child develops their work ethic through meaningful and challenging

work (Pickering, 2003a). Through this work is where normalization takes place (Pickering,

2003a). According to Montessori, normalization is where deviations and misbehaviors go by the

wayside, and children become able to self-regulate, concentrate, work constructively, and treat

others kindly (Lillard, 2007). Independence is when the teacher never does anything for the

child that they can do for themselves (Pickering, 2003a). Correction is specific, and where

something is not done correctly, the child is again shown the appropriate way (Pickering, 2003a).

Pickering (2003b) also wrote about specific teaching discipline techniques and self-

control and steps to follow to keep the child feeling safe and supported. The first is to curb

attention-getting behaviors by isolating the child. A technique used to correct inappropriate

behavior is to ask the child to repeat the behavior in the correct way. The third is the removal of

privileges, which is effective if the privileges are meaningful to the student. Pickering (2003b)

gives important guidelines that can be implemented for all students, not just the ones with

disabilities. Pickering (2003b) cautioned that special needs students have more non-productive

time than students capable of self-direction.

An activity that is widely used to build self-control is the Silence Game. The Silence

Game is an activity in which the child can practice self-control, focus attention, and appreciate

silence, which builds self-discipline (Dattke, 2014). The point of the game is to see how long the

children can maintain silence without talking or moving. For a special needs student, this

experience might be one of the few times the child has felt quiet within themselves (Pickering

2004a). This activity is very challenging for most students with special needs (Pickering 2004a).

With practice and support, the child can enhance this skill and transfer it to periods of work and

the inhibitions necessary to control impulsive behaviors (Pickering, 2004a). Pickering (2004a)

has honed strategies to work with special needs children. These strategies can be incorporated

seamlessly into a Montessori classroom.

Importance of Social Inclusion

The concept of inclusion may be viewed as a continuum of three acceptance levels

(Scleien, 1999). Inclusion begins with the physical integration of all children, then progresses to

functional inclusion, and finally culminates in the highest level, social inclusion (Scleien, 1999).

The ADA, Americans with Disabilities Act, mandates physical access to public places (Scleien,

1999). The second stage is functional inclusion. It refers to the child's ability to work and learn

within a given environment. The child is physically present in the classroom and can

successfully work, learn, and make developmental progress as part of the classroom community

(Scleien, 1999). The third stage is social inclusion. Social inclusion is where inclusion has been

fully reached. The child has gained social acceptance and participates in positive interaction

with peers with the same emotional and social connections as a true classroom community

member. Social inclusion is a value that comes from within and cannot be mandated. Achieving

social inclusion takes more than mere communication. Educators must help students learn to

interact with each other. This can be a challenge often since special needs students who

experience developmental delays also experience delays in social skills (Shank, 2014)

Development of Community

Social inclusion grows naturally from community building (Danner & Fowler, 2015).

Montessori philosophy emphasizes the importance of the development of the community

(Danner & Fowler, 2015). This tenant of Montessori pedagogy is an advantage for the inclusion

of special needs students (Danner & Fowler, 2015). Unfortunately, sometimes private

Montessori schools will not accept students with special needs because they often require more

time individually from the teacher, have slightly different needs, and are usually more

challenging students to work with (Danner & Fowler, 2015).

ABAR and the Special Needs Student

When discussing ABAR education, the inclusion of special needs students is often

missing. In *Montessori Life*, the American Montessori Society's publication started a series

entitled, "Exploring Diversity and Inclusivity in Montessori" and have published two parts to

date. In these articles there is not a mention of special needs students (Oesting & Speed, 2018).

ABAR discussions should include special needs students because ABAR's goals more than

encompass a spirit of inclusion for special needs students. A leading research and policy

organization, The National Association for the Education of Young Children (NAEYC),

describes ABAR. The four main goals of ABAR include:

> Goal 1. Each child will demonstrate self-awareness, confidence, family pride, and
> positive social identities.
> Goal 2. Each child will express comfort and joy with human diversity; accurate language
> for human differences, and deep, caring human connections.
> Goal 3. Each child will increasingly recognize unfairness, have the language to describe
> unfairness, and understand that unfairness hurts.
> Goal 4. Each child will demonstrate empowerment and the skills to act, with others or
> alone, against prejudice and/or discriminatory actions (p. 4-5).

Special needs students fall under ABAR's purview because they are often subjected to

bias from both students and staff (Sapon-Shevin, 2017). The frequent exclusion of special needs

children from ABAR writings is troubling since special needs students are some of our most

vulnerable students (Pickering, 2003a).

Armstrong (2016) wrote about the many reasons to fully integrate special needs children

into the classroom. Special needs students positively impact the classroom by adding diversity

to the classroom. Diversity enriches the entire classroom. Special needs students bring strengths

into the classroom (Armstrong, 2016). Research is consistently emerging to show the many

strengths students with disabilities have, including high spatial ability for the many children with

dyslexia, creative thinking in students with ADHD, and systemic capabilities such as excellence

with computers among those on the autism spectrum (Armstrong, 2016).

Requirements of Adults in an Inclusive Community

Goertz (2001) describes different cases of working with many different special needs

students. She writes about the importance of knowing when to push and when to back off,

having a variety of approaches and flexibility to shift among them, and having a genuine and

deep affection for each child as he or she is at a particular place. These are the basic

requirements for adults who aspire to assist children in their dynamic self-development.

Teachers must stretch their imaginations and creativity to the maximum, knowing that they will

learn as they go, becoming more pliant and creative. In these ways, teachers will become worthy

of the children who they serve. (Goertz, 2001)

Methodology

This action research project was designed to study the effectiveness of implementations

to aid in the inclusion of special needs students in a Montessori elementary classroom.

Additionally, it looked at what impacts inclusion has on special needs students. The

interventions were conducted in the researcher's classroom over four weeks to discover if

chosen implementations can help special needs students normalize in an elementary

Montessori classroom. The intervention took place in an American Montessori Society

(AMS) accredited school. There were nine participants whose parents passively consented to

their participation through the process outlined in Appendix A. The subjects of the study

were aged nine to eleven years old. Due to the global pandemic of COVID 19, the in-person

class size had seven boys and four girls. There were also eight students aged nine to twelve who

were distance learning. These students were part of the readings and discussions but could not

participate in the in-person interventions; thus, they were not included in the study. In the study

group, there were students diagnosed with Attention Deficit Hyperactive Disorder (ADHD),

Autism Spectrum Disorder (ASD), learning disabilities, Oppositional Defiant Disorder (ODD),

and a variety of other unlabeled difficulties. The parents of the targeted students passively

consented to the parent participation (Appendix B). These were the parents of two students

diagnosed with the disorders, mentioned earlier, and were asked to complete targeted parent surveys at three different points throughout the study (Appendix C). There were other students with diagnoses, but whose parents could not participate due to extraneous circumstances in their home life.

The researcher had been teaching in an Upper Elementary classroom for 14 out of her 25 years teaching in a Montessori classroom before the start of the study. The remaining nine years were spent in preschool and Lower Elementary. She has kept the same classroom for four years; thus, the fifth and sixth-grade students were returning students. The sixth graders have been in the classroom for three years, the fifth-grade students have been in the class for two years, and the fourth graders were new this year. The researcher has worked with many special needs students over her quarter-century career. The implementations used in the study were curated over her lengthy career from many trainings, readings, continuing education in the form of workshops, conferences, and teacher observations, as well as being inspired by Montessori literature and Pickering's writings.

There were five different data tools used in this project: parent surveys (Appendix C), notes on discussion (Appendix D), tally sheets (Appendix E), samples of the students' journal writings from prompts, and the researcher's field journal. Three strategies were used to improve self-calming and cohesion in the classroom. The first type of intervention was self-control/self-regulating and calming activities and Grace and Courtesy lessons. The second type was oral reading and class discussions of the book *Wonder* (Palacio, 2012) and discussions of the 'Thought of the Day' (Appendix D). The third type of implementation was team building activities.

In week one of the study, the teacher introduced, or for returning students, reintroduced self-control building, self-regulating, and calming activities. Montessori (1967) wrote about the importance of the 'Silence Game.' Pickering (2003) also focused on the Silence Game in her research. The 'Silence Game' was practiced at least four times per week, lasting two to three minutes. It was introduced and practiced initially as a whole group activity where every person brings themselves to stillness and helps calm the mind to prepare for the day. The researcher encouraged the students to close their eyes to shut out visual stimuli and be more mindful of sounds, and their bodies and breath. The Silence Game can be done through several different modalities; the students counted silently, being aware of their breathing, brought stillness through a series of chimes, or counted to a prescribed number. Through the study, simple guided imagery was also introduced.

The mastery of silence is an exercise of the child's self-control that helps the child become present and focused (Montessori 1967; Pickering, 2003). After it was done with the group, individual students could utilize it if they found they needed a calming activity. Also introduced in the first week was another calming exercise of walking around the butterfly garden to connect to nature, which helps ground and calm children. The child would fill and carry a glass goblet of water. After the walk, the water would be used to water the plants. Large pots of spearmint and lemon balm grew just outside the classroom. The children were able to pick a leaf to use aromatherapy to help calm and center themselves. These implementations were important tools for all the students in the class to utilize. Students with special needs tend to have lower frustration tolerances, so these tools were paramount for them (Pickering, 2003).

Week two was focused on Grace and Courtesy lessons. These etiquette lessons were on the proper peer-to-peer and student with teacher interactions and proper usage of classroom materials. The teacher role-played appropriate solutions to different scenarios during morning and midday meetings. The students also practiced how to successfully interact with peers through directly led prompts. The teacher worked on skills to help the students find their voice to solve issues with peers as interpersonal issues arose appropriately. The implementations from week one also continued.

Week three focused on the students practicing and implementing the Grace and Courtesy lessons with one another and not directly led by an adult. The students were reminded of the prompts to talk through issues with their peers. Handling of playground issues and sportsmanship problems were particular challenges. The students were encouraged to utilize the tools of the previously taught self-regulatory activities. The morning group Silence Game continued.

The fourth week focused on building community with two different team-building activities. One activity was the "Human Knot." The class was divided into two teams, each forming a circle. They had to hold someone's hand from across the circle, each holding the hands of two others. The students had to work together, giving suggestions one at a time to work together to untwine their knot. Hands were washed at the end of the activity because of COVID 19 issues. The second group activity was "The Mine Field." One person from a group was coached through a simple obstacle course blindfolded by another member giving simple oral instructions. The team led the blindfolded person through a predetermined course. The activity was repeated, so everyone had a turn to be the coach as well as the person

blindfolded. The students wrote about their experiences of team building in a journal prompt.

The interventions were cumulative through the four weeks.

To answer the query about the impacts of inclusion on special needs students, the

researcher implemented two classroom-wide interventions. First, *Wonder* (Palacio, 2012), a

book about community and differences, was orally read. It led to discussions with the

students about ways we embrace and see differences and their sense of community. The

students had different journal prompts to elicit written responses. Second, the students and

teacher shared various proverbs and quotations called the 'Thought of the Day' in the morning

meeting. These thoughts generated discussions daily about community and differences using

an existing part of our daily routine. Notes were sometimes taken during these discussions

(Appendix D).

The researcher asked several parents of students diagnosed with special needs to

complete three surveys: pre, mid, and post intervention (Appendix C). These students all

received prior testing from licensed educational specialists and/or psychologists looking for

root causes of the difficulties the student displays and have documented educational

accommodations. If they come from public education, they have an Individual Education

Plan (IEP). The COVID-19 procedures affected daily contact with the parents since they

cannot walk on campus. The researcher had planned to ask the survey question informally,

but that was not possible because of the COVID-19 rules.

The researcher kept a weekly tally sheet (Appendix E) where targeted students were

tracked individually to see how the individual implementations were functioning.

'Inappropriate peer interactions' included instances when the student showed inappropriate

behavior: not on task, fooling with a classmate, distracting others, or using inappropriate

words. 'Inappropriate teacher interaction' included refusing to comply with what was asked

or commenting unsuitably. 'Following through practice' was recorded when the student-

initiated the Grace and Courtesy lessons that were demonstrated. The Emotional heading on

the tally sheet looked at the students' independent use of the implementations. The Academic

header with the subheading of 'Using time wisely' was a snapshot of the student working in

the classroom. The subheading 'Completion of Work Cycle' was determined by completed

activities recorded on the work plan. The researcher kept a weekly tally sheet (Appendix E)

where quantitative data from the targeted students were tracked individually to see how the

individual implementations were functioning.

      The direct qualitative data from all the students were writing samples from their

journals. They were given writing prompts to elicit their thoughts. The researcher compiled

five writing samples from each student's journal at the end of the study. The topics centered

around what character they would like to speak to from *Wonder* and what they would say to that

character. Another prompt asked why one of the main characters from *Wonder* felt ill after

realizing August was wearing the 'bleeding scream' costume. There were many organic

discussions based on the oral reading of *Wonder* highlighted in the field journal. Discussions

also were driven by the daily 'Thought of the Day.' Notes were kept on both discussions.

Analysis of Data

      The purpose of this study was to examine the effects of implementations for special-

needs students on inclusion into an Upper Elementary Montessori classroom. Additionally, this

research looked at the impact that inclusion had on special needs students. This study's

subjects were 11 fourth, fifth, and sixth graders in a private Montessori classroom in the

southern United States. The targeted special needs students in this study were diagnosed with

Attention Deficit Hyperactive Disorder (ADHD), Autism Spectrum Disorder (ASD), learning

disabilities, Oppositional Defiant Disorder ODD, and various other unlabeled difficulties.

Parents of two students diagnosed with the disorders mentioned above were asked to complete

targeted parent surveys. There were other students with diagnoses in the study, but parents were

unable to participate due to extraneous circumstances in their home life. Thus, those children

were not individually tracked, but their data was included in the entire class. It was important to

note that one of the participants was absent during several weeks of the study due to family

members having COVID 19. Another student went on a family trip for ten days. The

researcher chose specific interventions to help increase self-control and centering techniques

in the classroom. Both qualitative (student journals, researcher's field journal, discussion

notes) and quantitative (observational tally, parent surveys) data were collected. The field

notes were used to record activities in the classroom to find behavioral patterns as well as take

notes on discussions.

The researcher used the tally sheets (Appendix E) to track the two targeted students'

implementation usage and behavioral patterns for the four-week study. The researcher analyzed

the effectiveness of interventions introduced to help calm and center the students in the class.

The researcher calculated the weekly average of inappropriate interactions of the targeted

students from the daily tallies. These were inappropriate interactions with both fellow students

and teachers. Interactions were deemed inappropriate if their actions were contrary to the

modeling of the Grace and Courtesy lesson presented. Some specific interactions deemed

inappropriate were distracting behavior manifesting as uncontrollable giggling, arguing with

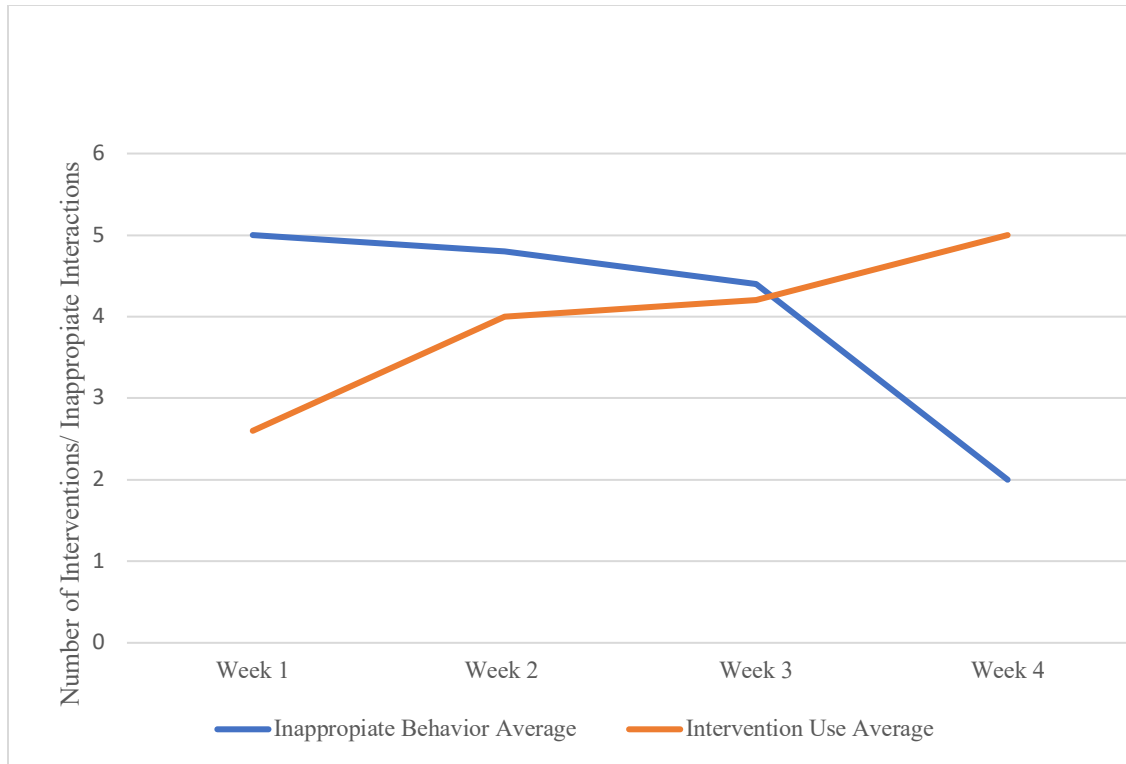peers, or non-compliance with classroom norms and expectations.

Figure 1. Weekly averages of interventions and inappropriate interactions for Subject 1.

Figure 1 follows a student through the four-week study. For the purpose of confidentiality, this subject was referred to as "Mary." This was the third year she has been a member of the researcher's classroom. Mary has severe learning disabilities in both mathematics and language, which were of an indeterminate nature. She also suffered from extreme anxiety and has been diagnosed with being on the autism spectrum. This student did not exhibit inappropriate peer interactions. The inappropriate interactions centered around complying with the teacher in respect to taking lessons and correcting completed work. She also had a very low threshold of frustration during the time she has been in the class.

The Field Notes showed that Mary's high level of frustration led to increased use of the Garden Walk and Aromatherapy implementations. The researcher observed and recorded visits to the large pots of mint grown outside the classroom door varying from two to five times a day.

Mary would sit beside the pot, stroking the plants' leaves and putting her hands in the soil. As the study progressed, she continued to use the plant intervention for calming. When other students showed any form of frustration, Mary would quickly pick a leaf and hand it to the student with instructions of crumbling it in their fingers and taking several deep calming breaths. As the study continued, leaves would just be slid to the other students each morning. As the intervention was used more, the number of inappropriate behaviors decreased. From week one to week four, there was a 60 percent decrease in the average of inappropriate interactions per week and a 92 percent increase in intervention utilization per week for the four-week study.

The Researcher's Field Notes recorded a significant improvement in willingness to do challenging work as well as revisiting work. During week 3, when asked to do grammar work with the researcher, she got upset and asked to go to the plants to get some leaves. Mary returned in less than five minutes, ready to have the lesson (Field Notes, September 18, 2020). Previously, it would take a long period of time, usually upwards of an hour for Mary to return to a calm state. In the Parent Post- Survey (Appendix C) Mary's mother stated, "… seems more relaxed and (is) vocal about encouragement. She is using calming tools at home. She will share her tools with her family as well. She is more relaxed this school year and is getting more confident."
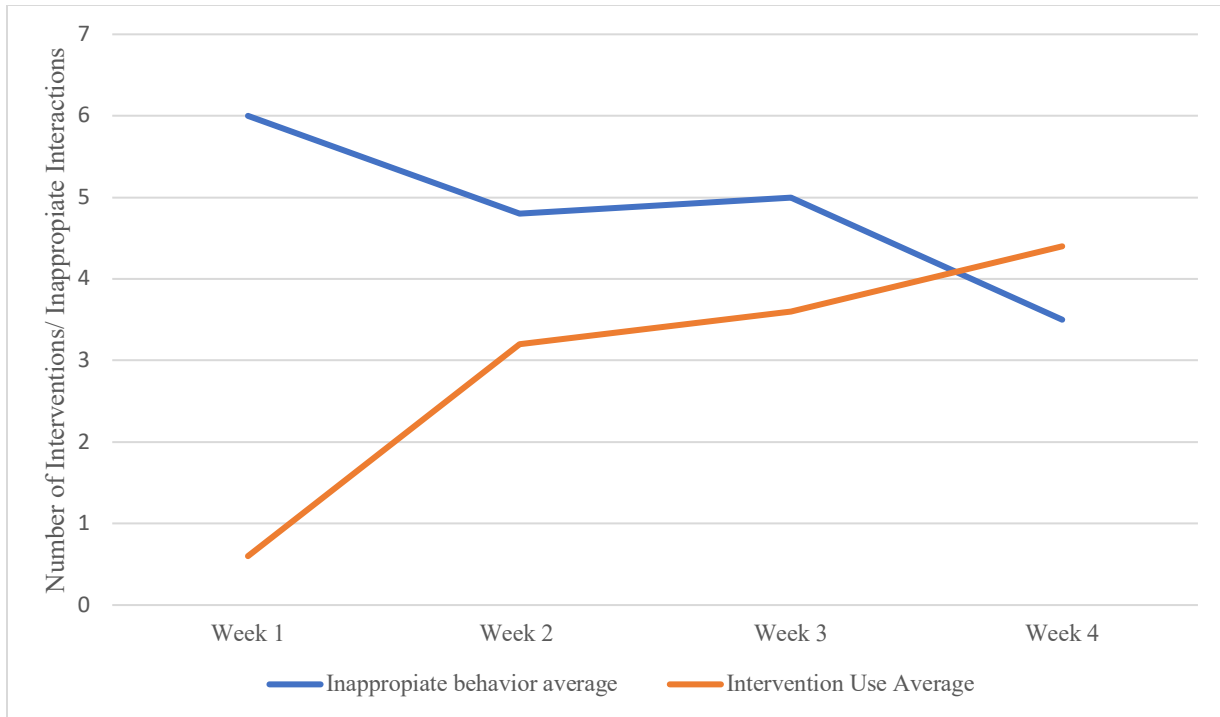
Figure 2. Averages of interventions and inappropriate interactions. Subject 2.

Figure 2 follows another student through the four-week study; unlike Mary in Figure 1, this student was new to the Upper Elementary Classroom this year. For the purpose of protecting his privacy, he was referred to as "John." He has been diagnosed with ADHD and was working with a tutor to overcome a reading delay and a behavior specialist. John had not previously known how to do the 'Silence Game.' During the first week and a half of the study, he did not utilize the Silence Game intervention of quieting his body through breathing to calm himself. He would be fidgeting during the group Silence Game through day nine (Field Notes, September 17, 2020). As John mastered the Silence Game intervention, he began to utilize it more on his own.

At the beginning of the study, John had conflicts with other students. He yelled in a loud voice at another student because they said he was small (Field Notes, September 8, 2020). He would also erupt in anger without a clear antecedent. By the end of the study, this behavior of

becoming upset with his peers decreased 36 percent from week one to week four. As Grace and

Courtesy lessons were presented and consistently practiced, his Inappropriate Interactions

average decreased. This student would also erupt into inappropriate fits of uncontrollable

giggling many times each day. Throughout the study, these bouts decreased by 54 percent from

an average of 10 per day to an average of 5.4 per day. Between the Grace and Courtesy lessons

and Silence Game implementation, the overall inappropriate interactions decreased by 42 percent

at the end of the study. Since the Silence Game intervention was new to him at the beginning of

the study, the student's utilization went up 63.3 percent from Week 1 to Week 4. In the Parent

Post- Survey (Appendix C) John's mother stated, "John seems much more confident this year.

Clearly the environment in the classroom is helping him build confidence. He is getting along

better with friends in the neighborhood. We are seeing less meltdowns. He is still a very

emotional kid."

During the four-week study another intervention was a 'Thought of the Day,' which were

proverbs or quotations and shared in the morning circle. These were discussed as to its meaning

and how it applies to daily lives. Notes on the Thoughts were recorded on Appendix D. 'The

Thought of the Day' from September 18 was particularly appropriate for this study because it

related to the *Wonder's* reading. A student in class chose it. It said, "Don't choose the one who

is beautiful to the world. But rather, choose the one who makes your world beautiful." It was

attributed to Alice Sebold. In discussing this quotation, the students thought this quotation meant

they should choose their friends who help them become better people. The discussion generated

ideas about "not choosing friends who are pretty or rich. You don't need to be super-rich to help

people. Good friends don't show off" (Discussion Notes, September 18, 2020).

Another intervention employed in the study was the oral reading and class discussions from the book *Wonder* (Palacio, 2012). During the reading, there were frequent discussions of different aspects of friendship from the story's various characters and their interactions. The protagonist of the book was August, a ten-year-old boy with a facial deformity. He was attending school for the first time as a fifth-grade student. The book centers around how August navigated in this new community and the struggles for compassion and acceptance. Also highlighted was how the character formed friendships with classmates.
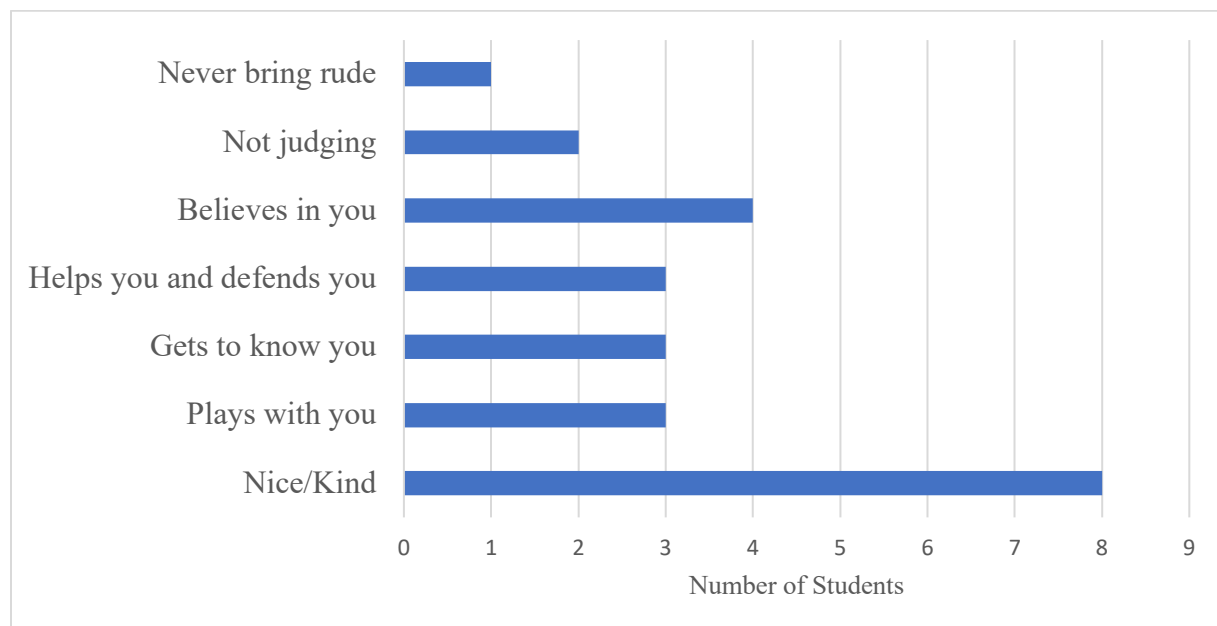
Figure 3. Characteristics of a good friend. Each bar represents the number of students. Taken from students' journal writings from prompt, "What makes a good friend?"

Students were given daily prompts from which to write on a variety of topics. "What makes a good friend?" was a prompt given on September 25. Figure 3 illustrates the frequency of characteristics of what made a good friend taken from samples of the students' journal writing. Eight student entries were collected, two students were absent, and one student did not respond. All of the entries mentioned being nice or kind as a characteristic of a good friend. 87 percent included a variant of help, encourages, believes in, and supports you as a characteristic of

a good friend. Half the students said the characteristic of a good friend was one that 'believes in

you.' One student wrote a list of characteristics that included: "nice, kind, supports you, believes

in you, and encourages you to be your best self" (Student Journal Writing, September 25, 2020).

Another student used the phraseology of what makes a good friend as, "Be nice, don't judge, and

never be rude" (Student Journal Writing, September 25, 2020).

The following table was derived from a journal prompt asking the students to choose a

character from the book and interact with the character. The prompt said, "Choose a character

from *Wonder*, and what would you say to the character."

Table 1

Students Statements on a Character from Wonder

Student #	Character	What the student would say to a character from *Wonder* (Palacio, 2012)
1	Summer	She's on the good team, she's Auggie's friend, unlike Julian.
2	Summer	Thanks for being a good friend to August.
3	Julian	Don't be a jerk just to be popular and Auggie is just like you but he has a bigger heart and isn't a jerk.
4	Jack	Thanks for being Auggie's friend and I like how you take the bus by yourself.
5	August	Just because his face is different on the outside doesn't mean he is different on the inside.
6	August	How do you stand up to those people who have been so mean to you?
7	Jack	Thank you for being a very kind friend to Auggie, it was a pleasure to meet you.
8	Jack Will	You are a jerk.
9	N/A	None
10	Summer	Thank you for being kind and caring for August and protecting him.
11	N/A	None

Note: Taken from student journals.

One-third of the students wrote about Summer, a girl who befriended Auggie at lunch.

Another third wrote to Jack Will, who was a bit more of a complex character in the book. Two

of the students thought Jack was a good friend to August, but one student called him "a jerk"

because August overheard Jack trying to fit in with the 'cool kids', and Jack said disparaging

things about August (Student Journal Writing, September 28, 2020). Jack's character was

redeemed later in the story, and August allows him to be his friend again. These discussions

were natural catalysts for talking about inclusion. During a discussion, one of the students said,

"August is not different on the inside. He is nice and more loving, unlike the other characters,

because of what he has been through" (Field Notes, September 21, 2020).

At the book's conclusion, the students wrote what they had learned from the book and the

discussions. One student wrote, "Everyone is different. Bullying is bad because you still do not

get your way" (Student Journal Writing, October 7, 2020). Another student wrote, "I learned to

never judge a book by its cover. Just because someone is different on the outside does not mean

they are different on the inside. I already knew that, but I learned it's really true from this book"

(Student Journal Writing, October 7, 2020).

Another intervention of the study was to build community in the classroom. Besides

reading and discussing the book *Wonder*, two new team building activities were carried out. One

was the "Human Knot," where teams had to work together to untwine their knot, which consisted

of hands randomly joined across a circle. The students gave suggestions, one at a time, to their

classmates to accomplish the task of untangling their hands. The second activity used to build

teamwork was "The Mine Field." One person from a group was coached by another group

member through a simple obstacle course around the playground blindfolded. This activity was

repeated for several days so that each participant could do both the role of the blindfolded person

and the coach. The students also wrote about their perceptions in a journal entry. The prompt

was, "What have you learned from the cooperative activities you have been doing, the 'Human

Knot' and 'Mine Field?'"

Table 2

Students Statements from Prompt on What the Community Building Activities Taught Them.

Student #	Activity	What the community-building activities taught the students
1	Mine Field	You can trust your friends and family
1	Human Knot	If you work together, you can accomplish anything
2	Mine Field	Trust your friends
2	Human Knot	We had to work together
3	Mine Field	It let me trust my classmates a lot more
4	Mine Field	To trust people. To trust your gut
4	Human Knot	To get you to think
5	Mine Field	You should trust your friends so you don't run into a pole
6	Human Knot	It's easier to do stuff when you work together than by yourself
7	Mine Field	I like doing the obstacle course because we work as a team and its fun
8	Absent	
9	Mine Field	I learned it's hard to do step by step instructions and without vision
10	Human Knot	It was fun
10	Mine Field	We can teach other people how to do it
11	Human Knot	It was hard because we had to speak to move

Note: Taken from students' journal writing

In the students' journal writing about the Mine Field activity, 63 percent of the students said they learned to trust doing the community building activities. In doing the Human Knot activity, 50 percent of the students highlighted that they learned to work together. Both trust and cooperation are needed to build strong communities.

The final prompt in the journal writing asked the students to choose one of the interventions and tell what they had learned from the activity. 72 percent of the students wrote about centering practices. 27 percent of the students highlighted the 'Thoughts of the Day.' One of the students said, "Centering is so important because it helps you calm down and your day will be better" (Student Journal Writing, October 7, 2020). Others noted that centering "helps me get started for the day" (Student Journal Writing, October 7, 2020). The researcher was interested in students' use of implementations for calming and centering and building community

in the classroom because both aspects were critical for all students, particularly special needs students, to be successful in a Montessori classroom.

Based on the data analyzed, the researcher determined that the implementations helped special needs students have successful inclusion in a Montessori elementary classroom. The increase in the use of implementations led to a decrease in inappropriate action and was supported by Figures 1 and 2. Additionally, the discussions based on *Wonder* and the 'Thought of the Day' helped solidify the concepts of inclusion of all, regardless of differences.

Action Plan

The purpose of this study was to examine the effects of implementations for special-needs students for successful inclusion into an Upper Elementary Montessori classroom. Additionally, this research looked at the impacts that inclusion had on special needs students. Centering activities, Grace and Courtesy lessons, team building activities, oral literature, and 'Thoughts of the Day' were used as implementations to determine whether calming, community cooperation, and discussions help the inclusion of special needs students.

After analyzing the data collected regarding the effectiveness of the implementation listed above, a few conclusions can be made. One finding was a clear increase in the self-use of implementations for the targeted students over the duration of the study, along with an almost inverse reduction of inappropriate behaviors. The class discussions were based on the readings of *Wonder* (2012) and the 'Thoughts of the Day' and generated many profound conservations. Through these discussions, a student in the class verbalized the sentiment, "Just because he (the character) looks different on the outside doesn't make him different on the inside" (Field Journal, September 21, 2020).

The Parent surveys of the targeted students helped answer how inclusion affected the special needs student. Both of the parents of the two targeted students cited a gain of confidence in their Post Surveys. These findings showed the value special needs students gain from an inclusive Montessori classroom.

Previous research from both Montessori (1967;1967) and Pickering (2003a) wrote extensively about the Silence Game and its ability to bring a deeper sense of calm and centeredness. Pickering (2004a) used the Silence Game for special needs students, particularly to help with behavior control. This previous research corroborates this study's findings, although the students of this study were of a more advanced age.

Almost three-fourths of the students cited the centering activity in their post study prompt "Choose one of the following and tell what you learned from the activity: Centering Activities, Thoughts of the Day, and Team Building Activities" (Students Journal Writing, October 7, 2020). One of the student's writing summed up the sentiments of the others. He wrote, "Centering helps because when we center, we can't see what other people are doing so it helps us calm down so we can do are (sic) work for the day" (Student Journal Writing, October 7, 2020). The team building activities seemed to spark the older students to want to give younger students lessons. As more trust and cooperation was developed, the community seemed to have become stronger.

The success of this study is encouraging. The researcher will continue to utilize the implementations within the classroom community as well as increase the scope of selection of different implementations. Different options resonate with different children. We will continue to practice the Silence Game at the start of each day. The researcher will continue to

bring in cooperative learning activities and books or thoughts that lead to the discussion of inclusion.

Despite the successes of this study, as demonstrated by the above data, this study needs to be conducted on a larger scale, both in terms of the number of students and duration. The researcher's in-person class size was about half of what it has been from the previous three years, not counting the distance students. Several medically vulnerable students or students who live with a medically vulnerable family member were in the distance school program, who could have been used to track as they would have been targeted students if they were in person school. Having a larger size of targeted students to repeat this study would be beneficial to find implementations that were favored by more of the students, as well as having a larger sample class size. A longer duration study on the use of these implementations would also be beneficial. A longitudinal study would help determine the long-term effects of the intervention on student calming and centering. There is a need for more research involving the inclusion of special needs students in the Montessori Elementary classrooms since the current literature is so sparse. More research will inspire literature that will allow schools to see the value in including a spectrum of special needs students as it enhances the overall community. Exploring the benefits that special needs students receive from an inclusive community would be valuable research. More work is needed to see special needs students better represented in the ABAR work.

This researcher hopes that there will be a renewed focus on special needs inclusion in Montessori Elementary classroom because when a classroom is enriched with special needs children, both the special needs students and the community at large benefit. Special needs students peers' positive performances inspire special needs students, and they will rise to the

higher expectations of their teachers. Special needs children's brains develop stronger neural connections in a richer learning environment (Armstrong, 2016).

All students improve communication and interpersonal skills in an inclusive community. Students learn how to work with all types of learners. But one of the most significant benefits of an inclusive classroom community is all students learn to value all learners and respect each member of the community for what they bring to the classroom. Montessori classrooms are uniquely adept at including special needs students because of the Montessori educational method and philosophy.

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Appendix A

Student sense of Community in an Upper Elementary Montessori Classroom
Parent Permission Form

August 19, 2020

Dear Parents,

In addition to being your child's Upper Elementary teacher, I am also a St. Catherine University student pursuing a Masters of Education. As a capstone to my program, I need to complete an Action Research Project. I am going to study student's sense of community and ways we embrace differences in the Upper Elementary classroom. I will also be looking at how each student holds value for our classroom community.

In the coming weeks, I will be focusing on teaching different implementations, mostly through Grace and Courtesy lessons and self-regulation activities as a regular part of our classroom activities. We will also work on some team building activities as well as have classroom discussions on the "Thought so f the Day" which we begin our morning with as well as literature discussions.. All students will participate as members of the class. In order to understand the outcomes, I plan to analyze the usage of these implementations and activities to determine which best work in the Upper Elementary classroom.

The purpose of this letter is to notify you of this research and to allow you the opportunity to exclude your child's data from my study.

> **If you decide you want your child's data to be in my study,** you don't need to do anything at this point.

> **If you decide you do NOT want your child's data included in my study,** please note that on this form below and return it by August 26, 2020. Note that your child will still participate in the implementations but his/her data will not be included in my analysis.

In order to help you make an informed decision, please note the following:

- I am working with a faculty member at St. Kate's and an advisor to complete this particular project.

- We anticipate the implementations will be beneficial for all students.

- I will be writing about the results that I get from this research. However, none of the writing that I do will include the name of this school, the names of any students, or any references that would make it possible to identify outcomes connected to a particular student. Other people will not know if your child is in my study.

- The final report of my study will be electronically available online at the St. Catherine University library. The goal of sharing my research study is to help other teachers who are also trying to improve their teaching.

- There is no penalty for not having your child's data involved in the study, I will simply delete his or her responses from my data set.

If you have any questions, please feel free to contact me, at sdtalbert@maitlandmontessori.org. You may ask questions now, or if you have any questions later, you can ask me, or my advisor Dr. Dawn Quigley at (612) 414-9212 who will be happy to answer them. If you have questions or concerns regarding the study, and would like to talk to someone other than the researcher(s), you may also contact Dr. John Schmitt, Chair of the St. Catherine University Institutional Review Board, at (651) 690-7739.

You may keep a copy of this form for your records.

_____   _____
Sunny Day Talbert   Date

OPT OUT: Parents, in order to exclude your child's data from the study, please sign and return by August 26

I do NOT want my child's data to be included in this study.

_____   _____
Signature of Parent   Date

Appendix B

Student Sense of Community in an Upper Elementary Montessori Classroom
Parent Permission Form

August 19, 2020

Dear Parents,

In addition to being your child's Upper Elementary teacher, I am also a St. Catherine University student pursuing a Masters of Education. As a capstone to my program, I need to complete an Action Research Project. I am going to study student's sense of community and ways we embrace differences in the Upper Elementary classroom. I will also be looking at how each student holds value for our classroom community.

In the coming weeks, I will be focusing on teaching different implementations, mostly through Grace and Courtesy lessons and self-regulation activities as a regular part of our classroom activities. We will also work on some team building activities as well as have classroom discussions on the "Thought so f the Day" which we begin our morning with as well as literature discussions. Notes will be taken on the use of the implementations and notes will be taken during discussions. The students will have a writing assignment centered around community. All students will participate as members of the class. In order to understand the outcomes, I plan to analyze the usage of these implementations and activities to determine which best work in the Upper Elementary classroom. I am asking you to fill out three parent surveys during the study which are attached.

The purpose of this letter is to notify you of this research and to allow you the opportunity to exclude your child's data from my study.

> **If you decide you want your child's data to be in my study,** you don't need to do anything at this point.

> **If you decide you do NOT want your child's data included in my study,** please note that on this form below and return it by August 31, 2020. Note that your child will still participate in the implementations but his/her data will not be included in my analysis.

In order to help you make an informed decision, please note the following:

- I am working with a faculty member at St. Kate's and an advisor to complete this particular project.

- We anticipate the implementations will be beneficial for all students.

- I will be writing about the results that I get from this research. However, none of the writing that I do will include the name of this school, the names of any students, or any references that would make it possible to identify outcomes connected to a particular student. Other people will not know if your child is in my study.

- The final report of my study will be electronically available online at the St. Catherine University library. The goal of sharing my research study is to help other teachers who are also trying to improve their teaching.

- There is no penalty for not having your child's data involved in the study, I will simply delete his or her responses from my data set.

If you have any questions, please feel free to contact me, at sdtalbert@maitlandmontessori.org. You may ask questions now, or if you have any questions later, you can ask me, or my advisor Dr. Dawn Quigley at (612) 414-9212 who will be happy to answer them. If you have questions or concerns regarding the study, and would like to talk to someone other than the researcher(s), you may also contact Dr. John Schmitt, Chair of the St. Catherine University Institutional Review Board, at (651) 690-7739.

You may keep a copy of this form for your records.

_____   _____
Sunny Day Talbert   Date

OPT OUT: Parents, in order to exclude your child's data from the study, please sign and return by August 26

I do NOT want my child's data to be included in this study.

_____   _____
Signature of Parent   Date

Appendix C

Parent Survey- Initial:

What is your assessment of how things have started this year?

Do you have any areas of concern?

Has (child's name) shared any feedback about how their classmates have been interacting

with them? If so, what have they shared with you?

Is there anything else you would like to share with me?

Parent Survey- Midpoint:

How do you feel things are going so far this year?

Has (child's name) discussed any of the implementations we have been practicing at school?

We are reading Wonder for our oral literature and have discussions on the characters and their

effects. Has (child's name) talked about the book at home? If so, what have they shared?

Has (child's name) started using any of the implementations taught at school being used

outside of school?

Do you think the implementations are supporting your child? If so, how?

Do you have any areas of concern?

What is the feedback on how the classmates are interacting?

Is there anything else you would like to share with me?

Parent Survey- Post Study

Have you seen any changes in (child)

Have you seen implementations taught at school being used outside of school?

What are things you are seeing at home that might indicate how your child feels about school?

Where have you noticed changes in social skills?

How do you know your child is being supported?

Do you think the implementations are supporting your child? If so, how?

Is there anything else you would like to share with me?

When a child has develops concentration, inner discipline and good judgement to use freedom correctly

Appendix D

Notes on Discussions

Date_____

Thought of the Day:_____

_____

Meaning of the thought from the student_____

_____

Discussion generated from the students_____

_____

_____

_____ _____

Notes on Discussions

Date_____

Thought of the Day:_____

_____

Meaning of the thought from the student_____

_____

Discussion generated from the students_____

_____

_____

_____ _____

Appendix E

USE OF IMPLEMENTATIONS TALLY SHEET

Name of Student _____ Week of_____

Time/ Date of Observation	Mon.	Tues.	Wed.	Thurs.	Fri.
Social					
Inappropriate peer interactions					
Inappropriate teacher interactions					
Following through practice					
Emotional					
Initiating "Silence Game"					
Walks in the garden					
Visiting herbs (mint)					
Runs a lap					
Academic					
Using Time Wisely					
Completion of Work Cycle					

Appendix F

These quotes from Dr. Montessori are included as they were the guiding framework for this

literature review.

Dr. Montessori explains the direction of her life's work:

> From the very beginning of my work with mentally retarded children in the years
> 1898 to 1900, I felt that the methods I was employing were not only a help to the
> mentally deficient but that they contained educational principles more rational
> than those then in use, especially since they were able to help a weak mind to
> develop. After I had left the school for the deficient children, this idea became
> even more fixed in my mind. Gradually I became convinced that similar methods
> applied to normal children would lead to surprising development of their
> personalities. It was then that I made a thorough study of the so-called "remedial
> education" and decided to study the education of normal children and the
> principles upon which it is based. I therefore enrolled as a student of philosophy
> at the university. I was animated with a deep faith. Although I did not know if I
> would ever be able to test the truth of my conviction, I gave up every other
> occupation in order to deepen it. It was almost as if I was preparing myself for an
> unknown mission. (The Discovery of the Child p 22-23)

Dr. Montessori described the advancements of the students from the State Orthophrenic School

> I succeeded in teaching some mentally retarded children from the lunatic asylum
> to read and to do neat and exact handwriting. These children were subsequently
> able to sit and even pass an examination in a state school together with normal
> children. (Basic Ideas of Montessori's Educational Theory p154)