

**USING ANIMAL ASSISTED THERAPY WITH STUDENTS WITH AUTISM
SPECTRUM DISORDER IN THE ART ROOM SETTING**

A Masters Degree Proposal by

© Karen L. Rosenburg

To

Moore College of Art and Design

In partial fulfillment of the requirement for the degree of
MA in Art Education with an Emphasis in Special Populations

Philadelphia, Pennsylvania

August 2016

Accepted:

Lauren Stitcher, Graduate Program Director

Masters in Art Education with an Emphasis in Special Populations

Dedication

To my son Marcus, who has changed my life and my teaching.

To my husband Mike, for your support and encouragement.

To my children, Owen and Nora, who keep the humor in my life.

Abstract

This case study focused on the addition of a therapy dog in an Art I level class at a public high school level that included students with Autism Spectrum Disorder. The purpose of this study is to determine how Animal Assisted Therapy may benefit autism support students in the art classroom. The data collected was analyzed to gain an understanding of how the inclusion of a therapy dog could assist in successful inclusion, assist students with ASD with socialization, and affect student choice within their artwork. The students participated in lessons that focused on representation of feelings through the use of color and combined realistic and abstract subject matters. Qualitative methods of research were used to conduct this study through use of observations, formal and informal interviews of students and teachers, student artifacts/artwork, and student questionnaires. The study focused on 2 students with ASD as well as the classroom as a whole.

TABLE OF CONTENTS

Title Page.....	i
Dedication.....	ii
Abstract.....	iii
Table of Contents.....	iv
Acknowledgements.....	v
Chapter 1: Introduction to the Study.....	1-16
Statement of Purpose.....	2
Problem Statement.....	2-4
Research Questions.....	5-6
Timeline.....	6
Challenges and Limitations	7
Literature Review.....	7-16
Inclusion.....	8-10
Sociocommunication in Students with Autism Spectrum Disorder.....	10-11
Animal Assisted Therapy.....	12-16
Chapter 2: Methodology.....	17-23
Introduction to Methods.....	17
Research Setting.....	18-19
Methods.....	19-20
Sampling.....	20-21
Data Analysis.....	21
Ethics	22
Limits and Validity.....	22-23

Chapter 3: Data Collection and Findings.....	24-53
Data Collection and Interpretation.....	24
Overview.....	24
Participants.....	25-27
The Study.....	27-33
Pre-Assessment.....	27-28
Lesson One: The Color of Emotions.....	28-30
Lesson Two: Pax Sketch.....	30-31
Lesson Three: Abstract Painting in Acrylic.....	31-33
Data Analysis.....	33-49
Findings.....	49-53
Chapter 4: Conclusion.....	54-56
Summary.....	54-55
Action Plan.....	55-56
Appendix.....	57-72
Appendix A: Pax Commands.....	57
Appendix B: Lesson Plan.....	58-63
Appendix C: Pre-Study Survey	64
Appendix D: Mid Study Survey	65
Appendix E: Post Study Survey	66
Appendix F: Consent Forms	67-68
References.....	69-72

Acknowledgements

I would like to thank Lynn Horoschak for accepting me into this wonderful program at Moore and Lauren Sticher for her support and guidance for the past 14 months. I would also like to thank Jo Viviani for her efforts towards making this thesis become a reality. With the help of these three women, I have learned so much more about my teaching and myself than I could ever have planned on.

I would also like to thank my writing partner, Angie Renish for being my biggest cheerleader. She gave me help, humor, and high praise when I needed it.

I would like to thank the administration on New Hope-Solebury School District; Superintendent Dr. Steve Yanni and Director of Education Chuck Malone, for allowing me to bring Pax to school and supporting my research without hesitation.

Lastly, I would like to thank United Disability Services. Thank you for bringing this sweet dog into my life. You have helped my son and family as well as the students of New Hope-Solebury High School.

CHAPTER 1

INTRODUCTION TO THE STUDY

Introduction

My son has autism. He doesn't like hugs or kisses, it's hard for him to look people in the eye and carry on a conversation, and he never liked to draw. In fact, if you gave him crayons and a blank piece of paper he would burst into tears. That blank piece of paper scared him; there was no concrete question on it for him to answer. If you told him to draw a tree he would ask a million questions about trees and still make no mark on the paper.

He does like animals. One day he asked if we could get a dog. While researching what breed of dog would be best for a child with autism, I discovered that we could get an autism service dog for him. Two years later we received Pax, a wonderful Chocolate Labrador Retriever who has helped my son in so many ways. I have noticed that his artwork has changed dramatically. He has gone from minimal marks on a paper, to getting his artwork picked for the district art show. His color choices are vivid and expressive. His mark making is thoughtful. He tells me that art is his favorite special at school. I wondered, "Did the presence of Pax have a role in this?"

Autism Spectrum Disorder (ASD) is a neurological disorder that is marked by deficits in communication. It is defined as "a group of developmental disabilities that can cause significant social, communication and behavioral challenges" (Center for Disease Control). Some people with mild ASD are fully able to perform all activities of daily

living while others with severe ASD require substantial support to perform basic activities. Having a clear picture of what a child with ASD is like is important when attempting to teach them art. Art is a form of human communication.

When we create art, we want to show others what we see, what we feel, and what we know. “A work of art does not exist until it has reached a state in which it can make its impact on the sensory perceptions of others” (Newtown, 1960). We want to create a discussion about it with others. In order to do this there needs to be discussions about our art before, during and after the process of art making. There is a strong social aspect to art, both in the professional world and in the classroom. The one section of the population that struggles with socialization and communication are those individuals with Autism Spectrum Disorder (ASD). Students with ASD can have great difficulty making friends, picking up social cues, and carrying on conversations with their peers. How can people with limited social skills be included in the communication with peers so that they can also take part in this artistic process? How will a therapy dog be able to help in fostering that communication?

Problem Statement

The purpose of this study is to examine the way that an art class can become a more inclusive environment through the use of a therapy dog, and aid in the social interactions between students with Autism Spectrum Disorder and peers in their class in an effort to increase their “artistic voice” in their own artwork as well as the possible change in artmaking brought on by the interaction between students with Autism Spectrum Disorder and a Therapeutic Dog in the school setting.

Some characteristic of autism include:

“qualitative impairment in social interaction; failure to develop peer relationships appropriate to developmental level; a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people; lack of social or emotional reciprocity; marked impairment in the ability to initiate or sustain a conversation with others” (Diagnostic and Statistical Manual of Mental Disorders, 5th Edition)

While there is no cure for autism (Rutter, 2005), many therapies have been used over the years to help people with autism with their social and emotional deficits. Recently, autism service dogs and therapy dogs have been used to help people develop social skills. Boris Levinson, a child psychologist at Yeshiva University Medical School, started animal-assisted therapy (AAT) in the 1960's (Levinson, 1969). At a meeting of the American Psychological Association in 1961, Levinson proposed the argument that playful interaction with dogs can improve sociocommunicative abilities of children with autism. He began incorporation his own dog into individual's treatment plans (Jacobs, 2013). Other research has demonstrated a positive relationship between Animal Assisted Therapy and areas of language development and autism (Chandler, 2001). Dogs can also enhance communication, increase joint attending, decrease stress, increase self-esteem, and increase motivation (Chandler, 2001).

This study will use animal therapy as a means to develop social skills of the student with Autism Spectrum Disorder and their peers in art class and analyze the effects it has on their artwork. A trained autism service dog named “Pax” will be used in social skills and art based lessons that encourage a dialogue between students with ASD and

regular education students. “The contributions of dogs to social interactions involving children with autism is in providing the children the opportunity to practice nonlinguistic but highly” social actions and to coordinate these actions with others, human and canine” (Soloman, 2010). One of the benefits of an autism service dog is that they help give a person with autism a common topic to talk about with their peers.

Recently, many schools have started a “Reading Dogs” program in their school. Therapy dogs are invited to elementary school and children spend time reading books to the dogs. The presence of the dogs increased student attention and motivation in the classroom (Jalango, 2005). The same strategy can be implemented into the Art classroom. If dogs can help increase attention and motivation within a written language, perhaps they can do the same for a visual language.

My research has not revealed any previous studies of this kind. It is advantageous to look for new and different ways to include ASD students into the regular education setting. The use of a therapy dog is exciting to all students and fosters a common interest. Actively engaging these students in art class could then lead to added success in other areas of learning. “Years of research show that art is closely linked to almost everything that we as a nation say we want for our children and demand from our schools: academic achievement, social and emotional development, civic engagement, and equitable opportunity.” (Smith, 2009) Perhaps success found through this study might lead to use of therapy dogs in other academic areas as well.

Research Questions

In an attempt to discover the connection between students with Autism Spectrum Disorder and therapy dogs, I plan to investigate the following inquiry: ***How will a therapy dog be a benefit to students with Autism Spectrum Disorder in the Art Classroom?*** This research will study the outcomes of the experiences of students with ASD and their interactions with a therapy dog a school setting. Additional focus will be placed on the following sub-questions:

- How will the inclusion of a therapy dog increase the amount of socialization between students with Autism Spectrum Disorder and regular education students? Will the increased socialization continue once the dog is removed from the class?
- Will the presence of the dog encourage the autism support student to have more frequent social episodes with their typical peers and will their typical peers be interested in responding to them?
- How will the inclusion of a therapy dog in the art classroom increase the participation of the ASD student as a whole in the art classroom?
- How will the inclusions of a therapy dog in the art room help aid students with autism spectrum disorder increase their level of participation not only in art projects, but in classroom discussions, being able to talk about their work, and the work of other artists?
- How will increased socialization between students with ASD and regular education students in the art classroom increase the personal narrative and

encourage divergent thinking (a thought process or method used to generate creative ideas by exploring many possible solutions. (Best, 2015) in artwork done by the ASD student?

Timeline

The location of this research is New Hope-Solebury High School, in New Hope, Pa. New Hope-Solebury High School is part of the New Hope-Solebury School District located in central Bucks County along the Delaware River. The district is fairly small and is comprised of 4 buildings; the Lower Elementary School (K-2), the Upper Elementary School (3-5), the Middle School (6-8), and the High School (9-12). In 2014-2015 the total enrollment of the school district was 1,511 students in grades K-12. There are currently 525 students enrolled in the high school where the study will take place. I will conduct a case study of my fourth period Art I class and focus on two students that are part of the autism support class or “The Learning Center” (TLC). The two “TLC” students each have a paraprofessional that attends class with them.

I intend to conduct a qualitative case study by conducting interviews with teachers and students, written and recorded observations, and teacher and parent surveys. The study will focus on the inclusion of the therapy dog in the art classroom, activities that include the dog in with the curriculum of the art room, and observational impact the dog has on the artwork of the ASD students.

Challenges and Limitations

Of course this study poses possible limitations. There is a possibility that absolutely nothing happens after all. However, even in failure, there is success, for then there would be proof that therapy dogs have no influence in the art room! Some other limitations would be student transfers in and out of the school district. There could even be limitations with the dog for there may be reasons that he might be unable to come to school due to illness or an unexpected issue with building safety.

LITERATURE REVIEW

Autism in School

The first documented diagnosis of Autism was made by Leo Kanner in 1943. He thought that most children with autism were more likely to be born to highly intellectual parents who were white and middle or upper class. He believed the children's inability to relate to others was probably innate. He also stressed what he observed to be the cold, intellectual nature of their parents, especially their mothers which he called "Refrigerator Mother". Since then many changes have been made in perception and prevalence in the diagnosis of Autism. In 1960, autism was reported in 4 to 5 cases per 10,000 individuals. That number rose to 5 to 31 cases per 10,000 individuals in 1990. When autism was added as a category to the Individuals with Disabilities Act (IDEA) in 1990, over 5,000 students were educated under that title. That number increased to over 65,000 during the 1999-2000 school year. Currently 1 in every 68 children in America is diagnosed with Autism Spectrum Disorder. In the 2012-2013 school year, 8 percent of all children attending school receives services for Autism Spectrum Disorder.

Inclusion

The Individuals with Disabilities Act (IDEA) of 1990 states that children with disabilities are entitled to a free appropriate public education and that each child's education will be planned and monitored with an individualized education plan (IEP). Children with ASD are educated under IDEA and are entitled to an IEP, which is a legal document that is put in place to ensure that a child receives all services needed in order to meet agreed upon goals for that child in the least restrictive setting. Currently, most schools strive for the model of inclusion as being the least restrictive setting. The concept of “full inclusion” is that students with special needs can and should be educated in the same settings as their normally developing peers with appropriate support services, rather than being placed in special education classrooms or special schools (Mesibov, Shea, 1996). Inclusion allows student with ASD to be educated in classrooms with regular education peers their same age. There have been many studies done that look at the impact inclusion has had on student with ASD’s sociocommunication. According to McGregor and Campbell (2001): Integration of children with autism has two clear goals. The first is to honor the right of all members of a community to take full part in its day-to-day life. The second goal is to improve the quality of children’s social interaction and academic development through daily contact with typically developing peers (p. 190).

To place a child with autism in a regular education classroom with no accommodations would be to set the child up for failure. The duty of the IEP team is to make sure the child has all the services and accommodations that they need in order to be successful in the regular classroom, but often overlooked is the biggest part of the regular classroom: the other children. Children with autism are predisposed to social isolation

because of their disability (Ochs, Kemer-Sablik, Solomon, Sirota, 2001). Students with autism have deficits in social communication skills such as limited speech to initiate comments, requesting information from others and listening and responding to others (VanMeter, Fein, Morris, Waterhouse, & Allen, 1997; Volkmar, Carter, Grossman, & Klin, 1997). This deficit of social communication behaviors may interfere with academic progress and friendship development. Identifying effective interventions that improve social competence may lead to more positive outcomes with typical peers. For example, peer-mediated social interventions have been successful in increasing social communication of children with autism (Harring & Breen, 1992; Kamps et al., 1992; Pierce & Schreibman, 1995; Sasso, Peck, & GarrisonHarrell, 1998). Typically, children with autism are helped in their communication by adults; they are giving the instructions after all. However, research has shown that we really need to be teaching students with ASD skills to interact with their peers in class. “Because ASD children can be unpredictable, intense in what they do, and difficult to read, connection is difficult to come by” (Senator, 2008, p. xxi). Students with ASD can become marginalized if their peers do not understand their issues or why they act the way they do. In order for inclusion to create a positive student atmosphere, or “positive inclusion”, classmates, as well as teachers and staff need to be educated in the struggles of the ASD child (Ochs, Kremer-Sadlik, Solomon, Sirota, 2001). “Certain peers may be less fazed by occasional oddities of high functioning autism children and that with their help high functioning autism children are able to experience friendship” (Ochs, Kremer-Sadlik, Solomon, Sirota, 2001). By simply explaining what challenges the ASD student faces to other children in the classroom, it allows for greater understanding and acceptance of that

student and therefore makes inclusion work the way it is envisioned to do so (Silverman, Weinfeld 2007).

Other research suggests that there is very little empirical evidence for full inclusion for children with autism spectrum disorder to be effective at all (Mesibov, Shea, 1996), however this research was done quite some time ago and due to the newer research that was previously discussed, with the correct approach, inclusion can be effective. What this study concludes that simply placing a student in a regular education classroom does not foster inclusion.

Sociocommunication in Students with Autism Spectrum Disorder

Once the child with autism spectrum disorder is included in the classroom, the social communication difficulties of the child with ASD should be addressed. Many times, a child with autism will come into the classroom and learn how to interact with the adults in the room such as the teacher or instructional aids in the room, but not know how to interact with the other students in the room.

Being able to communicate with their peers is an important part of the learning process. Student with ASD can learn from their peers, but they need the social piece in order to do so.

“Imitation in play is essentially a social act. Imitation arises from wanting to “be like”, or “do like”, someone else. If the social drive is missing and social motivation has not yet been developed, social imitation will likely be low. Teaching a child to respond to social reinforcers and teaching formal imitation skills must go hand in hand for spontaneous imitation to begin.” “Watching others can help the child engage in the activity more effectively.” (Siegel, 2003 p 242)

Students with ASD often lack the social drive and motivation that Seigel references.

Without that drive they there will be little to no social initiation and therefore no peers to imitate social interaction and learn appropriate social cues.

Students with ASD have pragmatic language impairment which is an impairment in the appropriate use of language and is a hallmark of ASD (Bishop, Leonard 2014).

Pragmatic language refers to the use of social language and includes verbal utterances, paralinguistic utterances, and non-verbal behaviors (Prutting & Kirchner, 1987). Verbal utterances include staying on topic, taking turns, interrupting the other speaker, and the amount of talk. Paralinguistic utterances include intensity, intelligibility, tone, and rhythm. Non-verbal behaviors include eye contact, expression, physical proximity, and gestures. A broader definition of pragmatics incorporates behaviors that encompass social, emotional, and communicative aspects of social interaction (Adams, Baxendale, Lloyd, & Aldredge, 2005).

Students with ASD need to be taught how to socialize with other students. Not only do they not understand nonverbal cues, but they often do not understand the rules of conversations (Silverman, Weinfeld 2007). This can be explained through the term “Theory of Mind”. Theory of Mind refers to the notion that many autistic individuals do not understand that other people have their own plans, thoughts, and points of view (Lantz 2002). Furthermore, it appears that they have difficulty understanding other people's beliefs, attitudes, and emotions. When you combine Theory of Mind with a Pragmatic Speech Impairment, it becomes clear why it is so difficult for students with ASD to communicate with their peers.

Animal Assisted Therapy

Boris Levinson was the first person to integrate animals in a clinical psychological setting in 1962. He coined the term Animal Assisted Therapy in a paper published in *Mental Hygiene* when he found he made significant progress using his dog Jingles while working with “disturbed children”. He found that these children who were withdrawn and uncommunicative actually interact positively with the presence of the dog (Chandler, 2001).

Levinson was also the first person to suggest that children with autism might benefit from interacting with dogs. In his book, *Pet Oriented Child Psychology*, Levinson argued for using dogs to help children with autism to achieve emotional health. “When the child plays with the dog, he establishes his own world, the boundaries of which he himself prescribes” (Levinson, 1969). Within this world, the child with autism feels safe. Giving a child with autism the ability to form these boundaries reduces their anxiety towards the unfamiliar. The dog can help make the child world smaller, and less scary which makes them feel like they have more control in a world that overwhelms them.

“Animal-assisted therapy address challenges in the lives of children with autism and their families that are not often discussed in biomedical autism research” (Solomon, 2010). In a way, a dog can do the actual work of sheparding the child with autism into possibilities of social integration and increased social communication. Dogs are easy for children with ASD to understand: they throw a ball and the dog retrieves it; they hold the leash and the dog walks with them; they tell them to sit and the dog sits. There is no confusion in the interpretation of communication (Haraway 2003). Social interactions

with dogs minimally involve highly local sequences of actions that do not require speech and are usually repeatable and practicable (Solomon 2010).

In a study done by Olga Solomon (2010), two children with autism were studied during interactions with therapy and service dogs. The first child was a nine-year-old child in 4th grade. While the study does not describe where on the spectrum this child falls, by the way she is described as being verbal but having “no facial expression in family pictures” it would seem that she would fall in the moderate to high functioning area. She exhibited behaviors such as unpredictable behavior and outbursts of anger. There was also limited interaction between her and her siblings. She was distressed by loud objects and became violent when changes in environment occurred. She would often bolt from her environment. For this study, the first child was visited by a therapy dog named Crystal. Over 3 sessions working with the therapy dog, the first child exhibited behaviors such as speaking and playing with her siblings, being okay with a dog barking, giving the dog commands, and an impromptu extended social interaction with an unfamiliar peer.

The second child was 13 years old and monitored by Solomon after obtaining an autism service dog. In the first month after obtaining the service dog the child learned responsibilities for the dog (walking, feeding) and wrote a story in school indicating how much happier he is with the dog in his life. The second child’s mother also reported that they were also able to go out into the community more often as a family – out to dinner, to visit friends, etc. “Having the dog in the family restructured this child’s interactional ecology in a way that enables his communication and participation in his family’s life much more than before” (Solomon, 2010).

Another study done in 1989 Laural Redefer and Joan Goodman published a study in the *Journal of Autism and Developmental Disorders* that studied 12 children with autism utilizing a therapy dog. The authors concluded that:

This small and preliminary study suggests that a dog, when used as a component in therapy, can have a strong impact on the behavior of seriously withdrawn children. We found a highly significant increase in prosocial behavior with a parallel decrease in self-absorption with the introduction of a friendly dog. The children showed fewer autistic behaviors (e.g., hand-posturing, humming, and clicking noises, spinning objects, repetitive jumping, roaming) and more socially appropriate ones (e.g., joining the therapist in simple games, initiating activities by giving the therapist balloons to blow up, balls to throw, reaching up for hugs, and frequently imitating the therapist's actions.) ... At post treatment, with no dog present, and at follow-up, when there was neither the dog nor the familiar therapist, the children performed better than at baseline, though there was a continuous erosion of improvement from treatment to follow-up. (p. 464)

Redefer and Goodman's study shows that after a child with autism interacts with a dog in a therapeutic setting, there can be an improvement in their behavior even after the dog is no longer present although this improvement would dissipate after therapy with the dog was discontinued. Perhaps improvement can be maintained through frequent exposure to a therapy dog spread out over a longer period of time.

The use of service dogs for individuals with autism is relatively new. In the book *Animal-Assisted Intervention for People with Autism* (Pavlidis 2008) there is a great variety of tasks assigned to an autism service dog depending on the needs of the person they are assisting. A service dog might be trained to do any of the following tasks:

- Keep a child with ASD from eloping or dangerous bolting.

- Often children with ASD can wander off or become scared and run away. They can be unaware of any dangerous situations around them such as traffic or getting separated from their parents and becoming lost. Children with ASD can be tethered to their service dog while their parent holds the leash, so if they try to run, the dog will be trained to sit and not move. Some dogs can also be trained to search for a child if they do elope.
- Function to facilitate sensory integration and calming
 - Just the presence of the service dog seems to calm the child with ASD, reduce the occurrence of meltdowns and can even improve sleeping when the dog sleeps with them. Dogs can even be trained to provide deep pressure for sensory stimulation by sitting or lying on top of the child with ASD.
- Be used for social support and social lubrication
 - A service dog provides a social ice breaker for a child with ASD. A dog is a common topic that they can talk about with their peers. The service dog also provides comfort to the child with ASD while in a social situation when they might be feeling anxious and uncomfortable.

In conclusion, these three points of reference combine to make an interesting argument for the use of a therapy dog in the art classroom. While the research exists for the proper use of inclusion, issues of pragmatic speech and

animal assisted therapy, there does not seem to be any research involving anything specific being employed in the art room environment.

CHAPTER 2

METHODOLOGY

Introduction to Methods

The purpose of this study is to determine how Animal Assisted Therapy may benefit autism support students in the art classroom. Qualitative Research will be used to explore this question. The research conducted for this project will follow in accordance with the Action Research Data Collection Techniques (The Three E's) as outlined by Mills (2011). The Three E's: Experiencing, Enquiring, and Examining help teachers make use of data collection to gather useful information about that can be analyzed and interpreted. Through "Experiencing", I plan on observing participants in the study. Through "Enquiring", I plan on using informal interviews and questionnaires. I plan on using 3 approaches to "Examine" data; artifacts (in the form of artwork created by the students), field notes that I take daily and video recordings.

I will be using a participant observer approach (McMillan, 1996, p.245) since I am the teacher in the classroom, and I will be observing my own students. As a researcher, I will gather data by interviewing other teachers and instructional assistants that work with the autism support students in my class. I also plan to gather information from a questionnaire, observations from video recording of the students with ASD, and notes written in a field journal (Mills, 2011). By the conclusion of this research, I hope to present accurate data on the benefits of the use of animal assisted therapy and make recommendations on further use of therapy dogs in the art room setting.

Research Setting

I have been teaching in the New Hope-Solebury School District for 10 years. I am the only art teacher at New Hope-Solebury High School. I teach 6 classes a day that include AP Studio Art, General Art I, II and III, Ceramics, and Crafts. This study will involve my 4th period General Art I class. Two of these students have moderate to severe ASD and are in the autism support classroom, or the “Transition Learning Center (TLC)”. One student is in 11th grade and the other is in 10th grade. In addition to these students, there is another ninth grade student that has high functioning ASD and is fully included. He has an IEP and receives social skills support and support for obsessive/compulsive disorder (OCD) and anxiety, but does not spend any time in the TLC. This class is held in the art room with 15 neuro-typical students in grades 9th through 12th. My research will take place in this setting.

This study will utilize a trained autism service dog named Pax. Pax is a 3 year old chocolate labrador retriever that was trained to be a service dog by United Disabilities Services in Lancaster, PA. He was placed with my family in March, 2015 to aid my son with sensory overload while out in public. Pax is able to keep my son calm in overstimulating situations, places that are unfamiliar to him, and/or places that are loud, crowded or have a lot of movement. My son has high functioning ASD and is fully included in 3rd grade. Because Pax is only used for community based outings, he does not require to take Pax to school with him. The Superintendent of my school district as well as my principal granted permission to bring Pax to school with me. He started attending school with me every day for 3 weeks in June 2015. This school year he attended school on Fridays but during the study he will be attending every day. The ASD

students as well as the neuro-typical students, faculty and staff in school are all familiar with Pax and very much enjoy his presence.

Methods

A qualitative approach to collecting data will fit this study best due to its open-ended methodology in addressing the goals of this study (Maxwell, pg.31). I plan on creating a case study of my 4th period art class because my sample size is specific and selective (Maxwell, pg.79). The methods of gathering information through the Three E's: Experiencing, Enquiring, and Examining, (Mills, 2001) will allow me to get an accurate picture of how a therapy dog may or may not be beneficial to the ASD student in the art classroom.

For this study I will be using a 3-prong approach to implementing my study. The first part will begin with Pax presence in school with me every day. I will conduct an interview with the students to ask them how they feel about dogs and will also send home a questionnaire to their parents asking for the student's history with dogs. I will also ask the students to draw a picture that shows a picture of them interacting with Pax. I will attempt to have the ASD students interact with Pax in some way each day from just saying hello to him to having the student give him commands or taking him for a walk. It is my hope to slowly make the students comfortable and familiar with Pax. I will use video recordings (Mills 2011, pg. 87) and field notes (Mills, 2011 pg. 76) to document this process as well as artifacts in the form of their artwork (Mills 2011, pg.88), interviews (Mills 2011, pg. 79)and questionnaires (Mills 2011, pg. 9).

For the second part of this study, I will be designing lessons that will utilize Pax in the interaction between the ASD student and the neuro-typical students. This could include having the ASD students discuss Pax with the other students to teaching the other students commands that they learned. I will use video recordings (Mills, 2011 pg.87) and field journal (Mills, 2011 pg.76) to document this data.

For the third part of this study all students will complete a project based on an encounter with Pax. Students will participate in life drawing sessions with Pax and use those drawings as a reference for their final project. Students will create a painting in acrylic based on their drawings of Pax. All students will then use an assessment worksheet to assess their project. I will then provide a survey to all students in the class as well including the students with ASD and their teachers and instructional assistants. In addition to the survey, I will also document this data through video recording (Mills, 2011 pg. 87), field journals (Mills, 2011 pg. 76), and artifacts (Mills, 2011 pg. 88). These artifacts will be represented as student projects done as part of the study and photos of the students working in the classroom and interacting with Pax. These photos will visually illustrate the study in motion and show the outcomes of this research project.

Sampling

I intend on using purposeful selection to choose the participants for this study because my 4th period class contains all the students that are relevant to my questions and goals (Maxwell, 2013 pg. 97). The students in my 4th period Art I class are in grades 9th-12th and are in their first year of art instruction with me, however the 2 ASD students from the TLC were in my Art 1 class last year as well. Their teacher and parents felt that benefited from the class, so they took the class again instead of moving up to Art II. The

neuro-typical students have a variety of artistic skill and educational abilities. Other than the three ASD students, four other students have IEP's for specific learning disabilities and other health impairments. The three ASD students are boys and there are eleven girls and four other boys.

While I am primarily interested in the primary sampling group, I am also interested in the perspectives of the TLC teacher and the student with ASD's instructional assistants (para professionals). This group will be able to offer insight as to changes that might have noticed in the ASD students over the course of this study. I will use their feedback as an important part of the data collection in this study.

Data Analysis

At the end of each week, I will review the video recordings and write out a narrative analysis of each recording in a field journal (Maxwell, 2013 pg. 105). I will record my findings based on observations for each student with ASD and label them by date. Throughout the study I will look for any changes in the amount and frequency of interaction between the ASD students and their peers. I plan on comparing the ASD student's artwork at the end of the study with artwork at the beginning of the study to note any changes technique, composition and narrative qualities. I will compare and summarize parent and teacher interviews and surveys with the beginning of the study with interviews and surveys at the end of the study. I will compare and summarize student surveys done at the beginning and end of the survey as well as student project assessments. I will use connecting strategies to understand the data collected through case studies and narrative analysis (Maxwell, 2013 pg. 112).

Ethics

Informed consent will be obtained by the Superintendent and Principal, all participating students, their parents and their teachers and instructional assistants who will be a part of the research process (Mills 2011 pg.30). All student, parent, and teacher names will be changed to ensure that confidentiality will be maintained for all participants during every step of the study. All data will be entered into a personal computer using only fictitious names. No person shall receive any type of monetary compensation for participation in this study. If a participant would like to withdraw from the study, they may do so at any time and all data from the participant will be destroyed.

Limitations & Validity

During the course of this study, I may encounter certain limitations that would threaten the validity of this study. My project may be limited by such factors as logistics, sampling, personal bias.

Because this study will take place in a public school, I may be limited by the normal time constraints of the day and the 42 minute length of the class period. Other issues that often arise at my school include disruptions in the school day such as ½ days, standardized testing, field trips, and assemblies. Often the students in the TLC will take social outings outside of the school, and they also volunteer at the local playhouse and hardware store. The timing of these activities could interfere with their attendance in the class. There may also be issues that arise with the ability of Pax's participation in the event that he might get sick or become overwhelmed with his participating in the study.

Secondly, limitations could arise in the sampling of students for the study. Because there are only three ASD students in the class even the withdrawal of just one of these students could greatly affect the outcome of the study. In addition, any unwilling parents or students could also affect the data and the outcome of the study. It is important to remember that the findings of this study will not offer a comparison of data from multiple settings as I am only concentrating on the class that these students are in. I also understand that the outcome of this study is not easily applicable to all art classrooms as most art teachers would not have access to a trained autism service dog.

Lastly I may experience limitations as a teacher due to personal bias. As the teacher in the room, the owner of Pax, and mother of a child with autism, I am incredibly invested in the outcome of this study. It is my personal belief that the students will have a positive reaction to the implementation of a therapy dog to the classroom because I have already observed that experience with my own son. I intend to remind myself of this as I conduct each part of the study. Maintaining complete objectivity not only will ensure a reliable outcome, but even a negative outcome will present useful information.

Being aware of the limitations of this study will help me create an accurate account of observations and collection of data. This study could not only help art teachers with the inclusion of ASD students in their class, but also offer Autism Support Teachers a new therapy for their students in their class, as well as the potential creation of a therapy dog club or group that will be able to visit schools and work with ASD students.

CHAPTER THREE

DATA COLLECTION AND FINDINGS

Overview

The purpose of this study is to examine the way that an art class can become a more inclusive environment through the use of a therapy dog. This study will examine how a therapy dog can aid in the social interactions between students with autism spectrum disorder (ASD) and peers in their class in an effort to increase their “artistic voice” in their own artwork. Additionally, this study will examine the possible change in artmaking brought on by the interaction between students with autism spectrum disorder and a therapeutic dog in the school setting. In order to understand this, I observed and recorded data from the classroom as a whole in regards to communication with peers and choices within their artwork. Before the study began, Pax was regularly coming to school every Friday. Once the study began, Pax attended school almost every day. Data was collected through observation, field notes, surveys, student artifacts, and informal interviews with participants. Throughout each 42 minute class observations were recorded in a field journal. A pre-study survey was given to all participants at the beginning of the study. Another survey was given midway, and a final survey was given at the end of the study along with a self-assessment and rubric. Student artifacts such as drawings, paintings, sketchbook assignments and classwork were collected throughout study and recorded in the form of photographs and stored digitally. At the conclusion of the study, a survey was also given to the teachers and instructional assistants involved to gather feedback on behaviors of participants outside of the art classroom as well as personal experience of being in the art room throughout the study.

Participants

My participants consisted of the students in my 4th period class, which is made up of 20 students in grades 9th through 12th. Four students are diagnosed with disorders that affect communication, including autism spectrum disorder, Coffin-Lowery Syndrome, and Wolf – Hirschhorn Syndrome. I selected this general art class because it the class with the highest concentration of students with autism and students that have IEP's for specific learning disabilities along with regular education students.

Two of the students that I concentrated on as case studies were MP and TG. I have taught MP and TG for two years now in both art and ceramics class. While I studied the effects of Pax on the entire class, I focused on these two specific students. Below you will find the description of these students whose names have been altered to protect their privacy.

This is the second year that I have taught the first participant, MP. MP is the lowest functioning out of the whole class. MP is in 11th grade and has a diagnosis of Coffin-Lowery Syndrome. This syndrome is a genetic disorder that results in physical disabilities such as micro/macrocephaly, small hands, and low muscle tone as well as cognitive disabilities. People with Coffin-Lowery Syndrome also exhibit transient autism spectrum disorder behavior (Coleman, 2005). MP is a friendly student. He has issues with fine and gross motor skills and cannot use scissors, button, or tie his shoes. He is clumsy and falls down often. He scored a 40 on the Kaufman Brief Intelligence Test (average IQ is 90-109) and has a limited ability to read and write. He struggles with 2-step directions as well as recalling events from the previous day. He has difficulty following a conversation and constantly repeats questions even after they have been

answered. He enjoys talking to peers, especially girls. He will mostly talk to people with questions such as “Mrs. Rosenburg, am I in art class now?” or “Are you my art teacher?” He often guesses when responding to a question and offers a different answer every time he is asked the question. He is well liked in the school and has a twin brother in the same grade. MP can hold a pencil and is able to make marks on a paper which are mostly short lines and circles. He can color with crayons, colored pencils, etc., but tends to focus in small areas and will not move onto another area of the paper unless prompted. He can use and hold a paintbrush but often pushes so hard that he rips the paper and destroy the paint brush so he primarily used sponges to paint. He exhibits sensory defensiveness while working with media that is wet, sticky, or dirty such as paint, clay, and pastel. While he is using it he repeats, “It’s okay to get messy?” When working on art projects he often says “help” or “angry” because he expects that he can’t do it or does not want to do it. According to Lowenfield’s Stages of Artistic Development (1947), MP is in the scribble stage, which is often exhibited by children between 2 and 4 years old. MP has a fond affection for dogs and talks often of his dog Sunshine. He enjoys seeing Pax and pets and talks to him on a daily basis both in class and when he sees him outside of the art room. He will tell Pax he is a good dog and say that Pax is his “baby”.

TG is the second participant I concentrated on for this study. TG is in 10th grade and this is also his second year in art class. TG has moderate/severe ASD. He has problems with expressive and pragmatic verbal communication. He reads and writes at a 4th grade level. His biggest strength is his long term memory and ability to recall events in detail. He is able to follow step by step directions well and often refers to written directions that I provide the class while doing his project. He has issues with flexibility

and is resistant against any type of change in his day. He gets easily frustrated when asked to wait and attempts to grab art supplies out of my hands while I am giving him instructions. He has problems understanding personal space and I often tell him that he is “in my (personal space) bubble” when I am giving demonstrations. He has temper tantrums if he is told to wait for longer than he wishes or is not permitted to do a preferred activity. TG also exhibits sensory impute deficits. He hates loud and unexpected noises. He enjoys working with clay and can easily become overstimulated when using clay and smears wet clay over his hands and arms because he enjoys the way it feels. He is very messy when working with any type of paint, as he enjoys the wet and drippy sensory experience. He is rarely social with peers in the class and only talks to them if he needs to share a medium or material that they are using. Art is one of TG’s favorite activities. He keeps his own sketch books and fills one with his drawing every few weeks. His sketches consist almost entirely of cartoon animals from movies or television shows that he watches. The images are usually crowded and overlapped and he typically labels everything in his pictures (Figure 16). For most of his art projects I need to specifically tell him that he is not allowed to draw any animals and he immediately questions “Why?” TG tends to shift between Pre-Schematic (4 to 6 years of age) and Schematic (7 to 9 years of age) stages of Lowenfeld’s Artistic Development (1947).

THE STUDY

Pre-Assessment

This research study is composed of a unit of three lessons with Pax present in classes on a regular basis. The unit addressed the abstraction of emotions with the three

lessons on abstract representation of color and emotions, sketching a live model of a dog, and representing realism to abstraction. The three lessons were taught over 42 minute classes for ten weeks.

The first day of the study I gave the students a survey to discover their comfort level with dogs and gain understanding of what they perceived would happen throughout the study. This survey was given via Google Forms, and students were able to fill out the survey anonymously and immediately submit their answers.

I introduced the beginning of the study by having the students be a “Dog Trainer for a Day”. I had them sit in a circle and gave each of them a handout (Appendix A) that had a list of 50 commands that Pax knows and a bit of dog food to reward him when performing a command correctly. I told them they could each have a turn giving Pax a command and reward him with food once he performed that command. I tried to get each student to give at least one command. The only student that refused was EK, a high functioning student with ASD. EK told me that his neighbors have a golden retriever that he is scared of and therefore he doesn’t like dogs. Students enjoyed the activity, and it helped them become more comfortable and friendly with Pax. It also helped give them “Pax’s vocabulary”, a language that Pax is familiar with so he would be able to understand the students. After the “Dog Trainer for the Day” lesson, I was able to begin the unit for this study.

Lesson One: The Color of Emotions

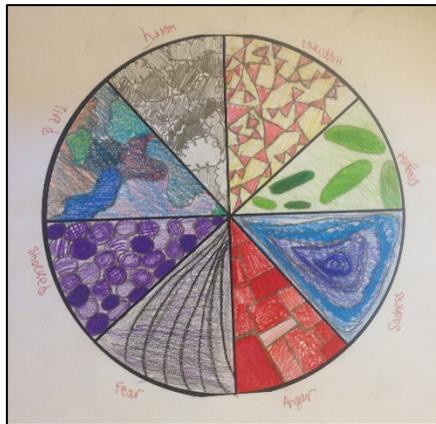
The first activity of the study was to watch the Disney/Pixar movie *Inside Out* (Docter, del Carmen, 2015). This movie illustrates how emotions work inside the mind

of an adolescent girl. There are 5 emotions: Joy, Sadness, Disgust, Anger, and Fear. At the conclusion of the movie, the students participate in a discussion on the color choices used in the movie to represent the different “emotions” in the movie. Students were asked the essential question: How can colors used in art communicate emotions?

(Appendix B)

The student received a handout of a circle divided into sections. I labeled this handout the “Wheel of Emotions” (Figure 1). Students were to assign each piece of the wheel a different emotion, then using colored pencils, use color, line and shape to represent that emotion for each piece of the wheel. Students stored the completed activity in their sketchbooks.

Figure 1:



This image is evidence of Wheel of Emotions student work from lesson one

The students were given a piece of 18”x 24” paper and told to fold it into quarters. Then they were to pick 4 emotions represented in their “Wheel of Emotions” and assign one of those emotion to each section of the paper. Then, using oil pastels, they were to expand upon the emotion by using color, shape, and line. They were instructed that each

part of their drawing should be abstract and that no one should be able to recognize any type of object within each area of the drawing. Students were given free choice of color and shapes and if they asked me for help or suggestions I would not offer any.

Lesson Two: Pax Sketch

The goal for this lesson was to answer the essential question: How is it possible to draw something that moves? (Appendix B) How can artists use basic shapes, gesture drawing and contour lines to draw live models? Students answered this question by the practice of using shape, line, and form by creating sketches of a dog. The students were instructed to start with basic shapes when drawing the dog, then move to more specific lines to define the shape of the dog, and lastly to add detail. The challenge of this lesson was to draw quickly as there was no

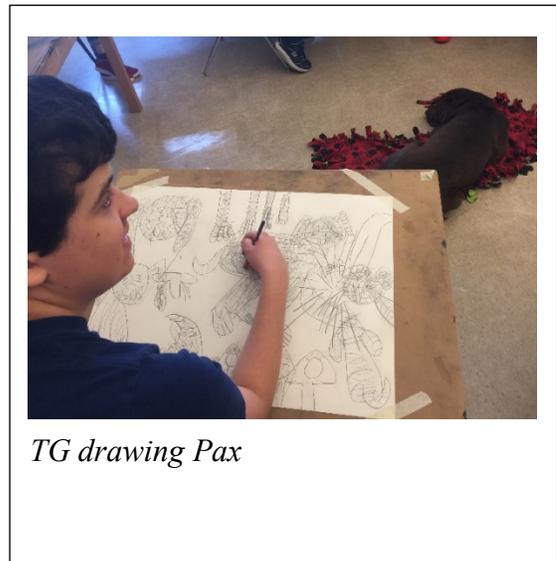


Figure 2:

guarantee how long the dog would hold one position. Pax was the model for this lesson, and he laid on his blanket in the middle of the classroom while students sat around him,

drawing on a drawing board for 2 classes (Figure 2). At the beginning of each class they were given a 24”X18” piece of white drawing paper. They were instructed to draw Pax as they saw him and not to make up anything they could not see such as a face or a tail. Every time Pax got up and moved, they needed to start another sketch but had to continue using the same paper. At the end of each class they were to have a paper filled with sketches of Pax (Figure 3).

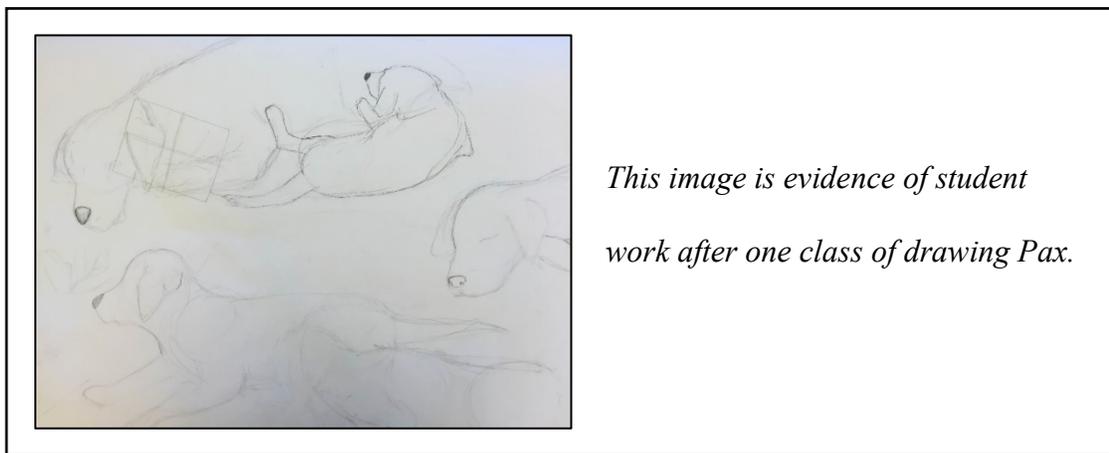


Figure 3:

Lesson Three: Abstract Painting in Acrylic

This lesson expanded upon the first two lessons. The goal of this lesson was to create an abstract painting in acrylic paint by answering these essential questions: How is it possible to draw something that moves? How can artists use basic shapes, gesture drawing, and contour lines to draw live models? (Appendix B) The students needed their work from the first two lessons to complete this assignment. First, they received cardstock that had a 3”X4” rectangle “window” cut out of the middle of the paper. Then

they were instructed to move this paper over their sketches of Pax. The window allowed them to be able to see only parts of their sketches of Pax, focusing them on creating an abstract composition. Once the students found a composition they liked, they received a 20"x16" canvas and drew the composition they saw in the window onto their canvas.

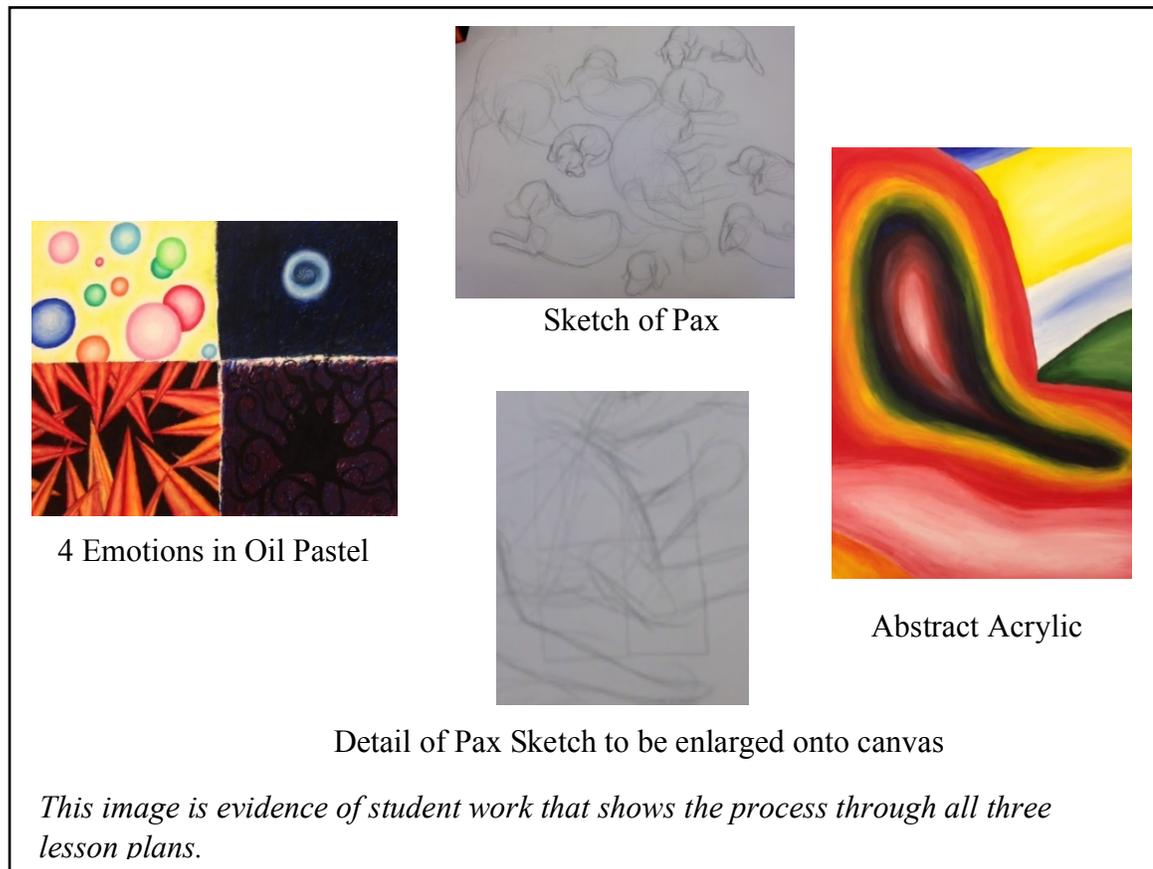
Next, the students referenced the project they created in Lesson One. They chose an emotion that they liked the best from that project and used the colors from that emotion to create the color palate for their abstract painting. As they painted in each shape, the students were instructed to mix their colors gradually with white paint to create value and gradation until the canvas was completely painted (Figure 4). You can see in Figure 5 the progression of the project, from the beginning sketch to the final product. Each step was its own assignment however each step was necessary to build skills towards the final assignment.

Figure 4:



This image is evidence of an abstract student work done in acrylic which shows abstraction and gradient colors.

Figure 5:



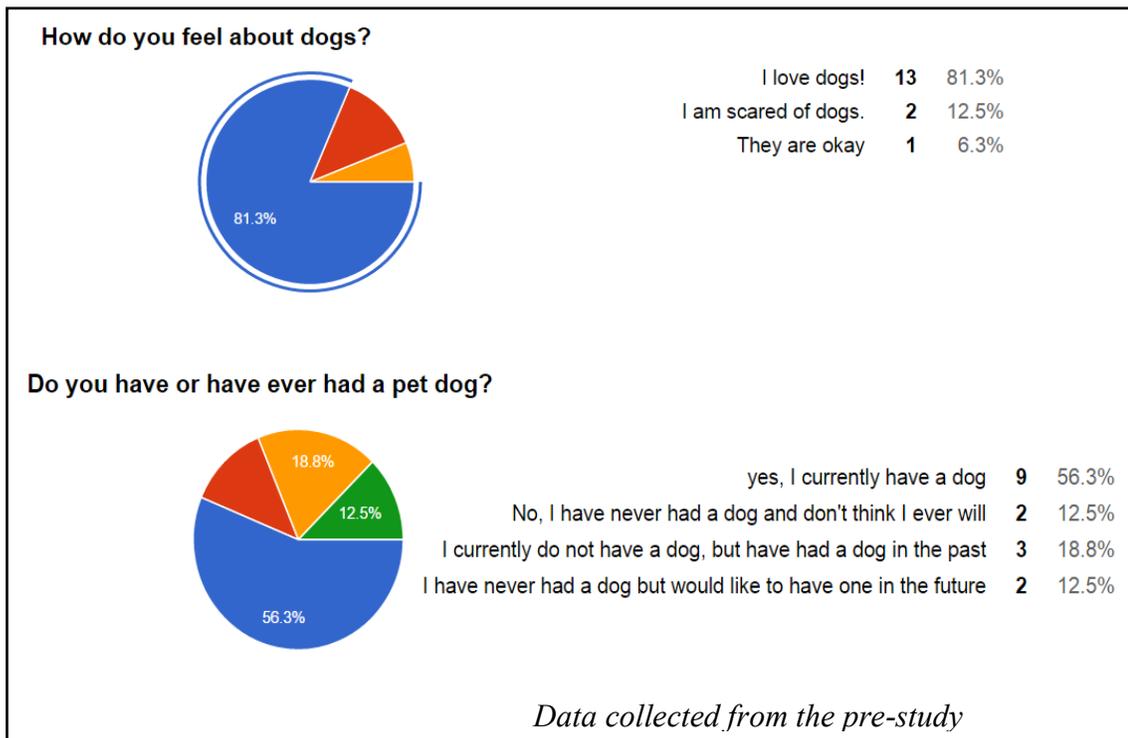
Data Analysis

The purpose of this study is to examine the way that an art class can become a more inclusive environment through the use of a therapy dog, and aid in the social interactions between students with autism spectrum disorder their peers. Data was collected on evidence of an increase their “artistic voice” in their own artwork as well as the possible change in artmaking brought on by the interaction between students with

autism spectrum disorder and a therapeutic dog in the school setting. Throughout this study, I looked for evidence of increased social interactions, evidence of student voice within their artwork, as well as a change in their artmaking, and an increased inclusive environment in the art classroom.

At the beginning of the study I had the students fill out a Pre-Study Survey (Appendix C). This survey allowed me to understand their comfort level being around a dog. Two students answered that they were scared of dogs and 25% of the class never had a pet dog (see Figure 6).

Figure 6:



Knowing this, I was sensitive to the needs of the student that stated they were afraid of dog. My student, EK, who has high functioning ASD, told me he does not like dogs because his neighbors have a golden retriever that they let it out without a leash, and he doesn't like that the dog is not under control. Throughout my study I would tell Pax to move if he was too close to EK or if I noticed him looking uncomfortable. One day EK decided to he wanted to pet Pax and had a positive experience (Figure 7). At the end of the study I asked the students again what they thought of dogs. This time 100% of the students had a positive reaction to dogs (Figure 8).

Figure 7:

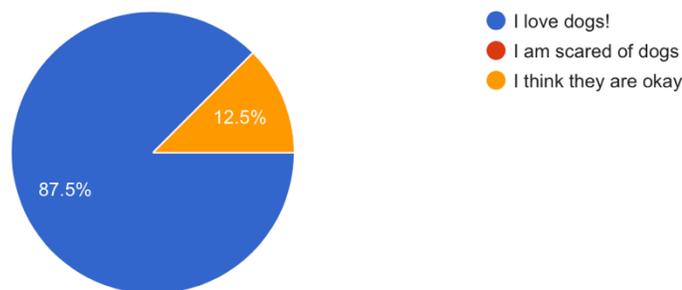
Today EK approached me and Pax and said "I'm very afraid of dogs but Pax seems like a nice dog so I decided today that I would like to pet him." I said, "That's great! Go ahead." EK pet Pax on his back and said "That wasn't bad."

Personal Communication, January – April 2016

Figure 8:

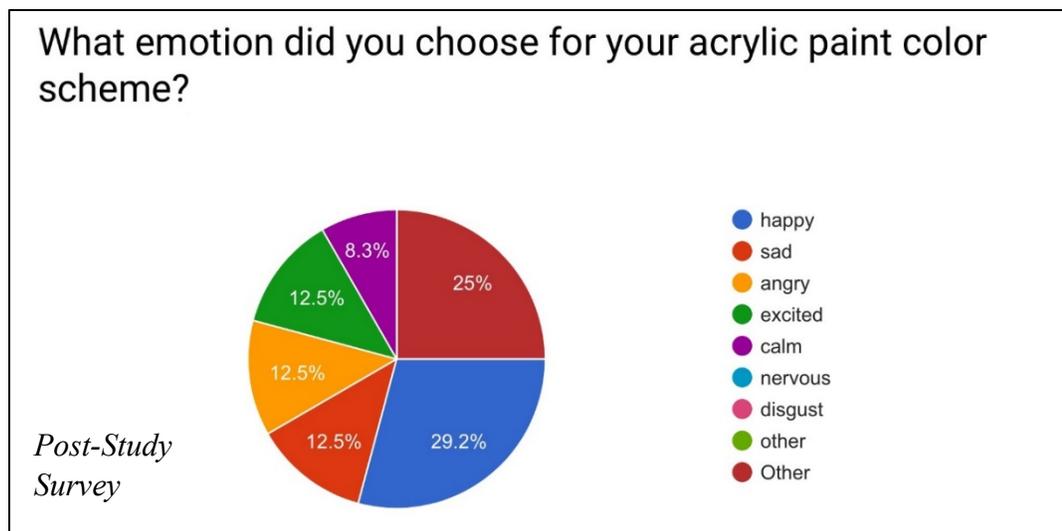
Now that the project is over, has your opinion about dogs changed?

(24 responses)



I was interested to see what emotion they would choose as their color palette. Because of the reaction to Pax not being present when the students picked negative emotions for their oil pastel drawing, I was expecting the student to choose positive emotions because Pax was present in school they day they started painting. The emotion “happy” was certainly used the most in all of the students’ paintings but it was not an overwhelming majority. While 29.2% of the students picked “happy” as their color scheme, 25% of the students picked “other” stating that the emotion they picked was not listed therefore the emotion they picked could have been positive or negative (Figure 9).

Figure 9:



In my pre-study survey, I asked the students “Do you think Pax's presence in your art class will have any effect on your artwork? Please specify why or why not.” The answers from students all suggested that they did not think that Pax’s presence would not affect their artwork except for TG. He wrote “Yes (Pax does affect my artwork)! Because I want to draw Pax!” Most responses stated that Pax would not affect their artwork because they are able to ignore Pax while working on their project. I believe the

students thought I was asking this question to find out if I thought that Pax would be a distraction and inhibit them from completing work.

I did see evidence of Pax influencing the artwork of students in the class. The first suggestion that Pax may have been a deciding factor in the subject of student artwork came the first day that the class started the oil pastel project. Pax was unexpectedly not in school that day. The students let me know exactly how upset they were. Once I gave them the paper and materials to start and told them they could pick any emotion to start their piece (figure 10).

Figure 10:

Most students said they chose “Anger” and “Sad” as an emotion to start their project. Coincidentally, the first day they were working on their project – that day they chose what emotions to represent, Pax was not here. I had not warned the students that he would not be there. So on that day all students were working on sad or angry as previously noted, however, most students didn’t think Pax had an influence on their work. (*Personal journal, March 3, 2016*)

I found that while the work from MP and TG showed growth over the study, their communication improved slightly. There was evidence of increased communication with both MP and TG and their peers (Figure 11). What I was most surprised to find is that while I was expecting MP and TG communication with their peers to significantly

Figure 11:

MP was talking with Sam in class today. He talked to her the entire class period. He asked questions such as:

“What are you drawing?”

“Can I show you my picture when I am done?”

Then Sam asked MP about his color choices. He stated, “I’m picking gray”. He continues chatting with Sam the entire class period.

TG also started talking to Reily about the age of planet earth. Reily, a 10th grade girl, showed interest in TG’s topic and the two of them talked throughout the class about everything TG knows about the planet. Reily was happy to engage him in this conversation and told him at the end of the class that she learned a lot from him today. TG replied with, “You’re welcome Reily!”

This was significant because MP engaged in conversation about his artwork and showed interest in what someone else was doing which, to my knowledge, has never occurred before. TG’s conversation was also a new experience as he typically would not hold a conversation that long. How wonderful that Reily was so invested in the conversation with TG. (*Personal communication, January – April 2016*)

increase, the communication of the regular education student in the class was the most affected and improved. Students stated throughout the study how relaxed they felt in Pax’s presence.

I found the communication and social interactions improved with all students in the class, not just the students with ASD. Although the pre and post study surveys indicate that there was a small improvement in how difficult it was for students to talk to people in their class about their artwork (Figure 12), my observation of students and

records in my log indicate more growth than the students indicated. Students reported that the presence of Pax made the class a more relaxing place to be. The mid-study survey indicated that 77.8% of the students agreed that there was a change in the classroom between then and the beginning of the study (Figure 13) and the reason most given was “It’s a much more positive and happy environment.” (Appendix D) Students also indicated they missed him when he wasn’t in school (Figure 14). The question “Do you think there is a benefit to having Pax in the classroom?” was asked in the pre-study survey. All but 1 student replied that they believed there is a benefit. One student wrote, “For students with other support and educational needs, I believe that Pax’s presence is very beneficial. He allows them to feel familiarity, comfort, and an overall sense of happiness.” By the end of the study 100% of the students stated that there was a benefit to having Pax in class (Figure 15). Some benefits students listed were: he makes the class more comfortable, he makes people happy, he is calming and uplifting, he boosts morale, and he makes the room cheery and interesting. (Appendix E)

Figure 12: Survey data

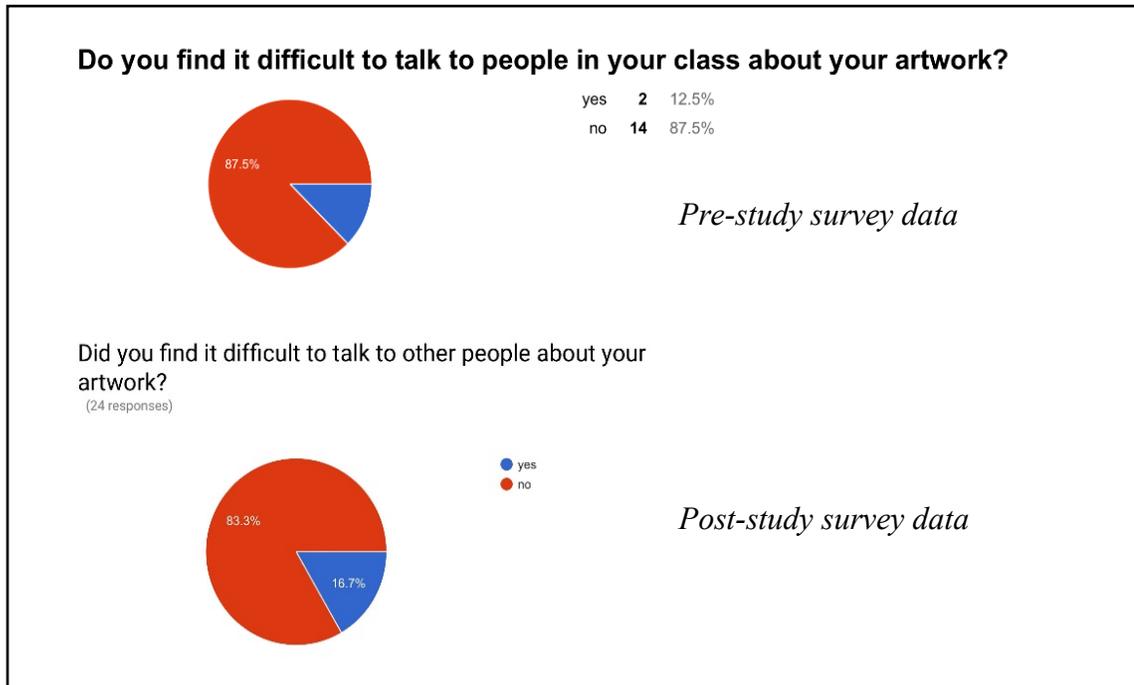


Figure 13: Data from mid-study survey

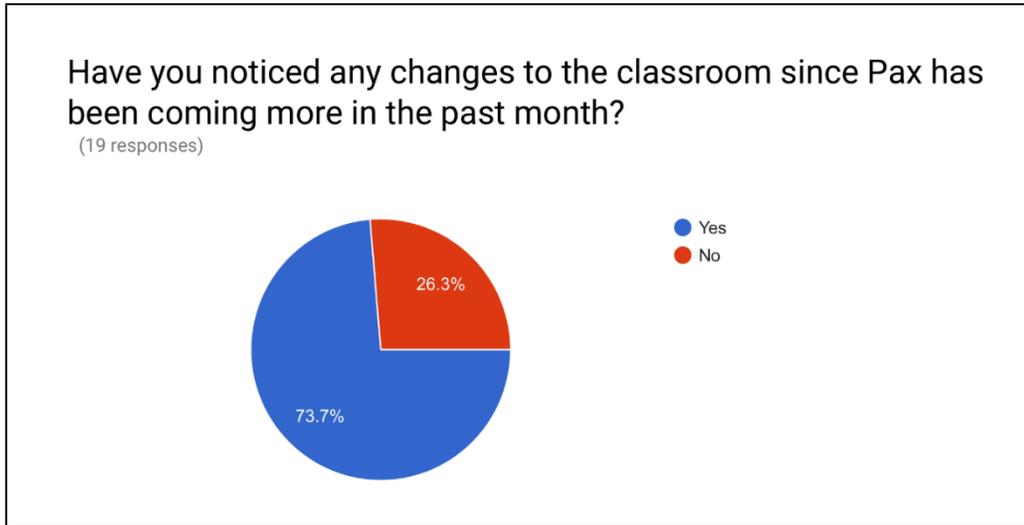


Figure 14: Data from mid-study survey

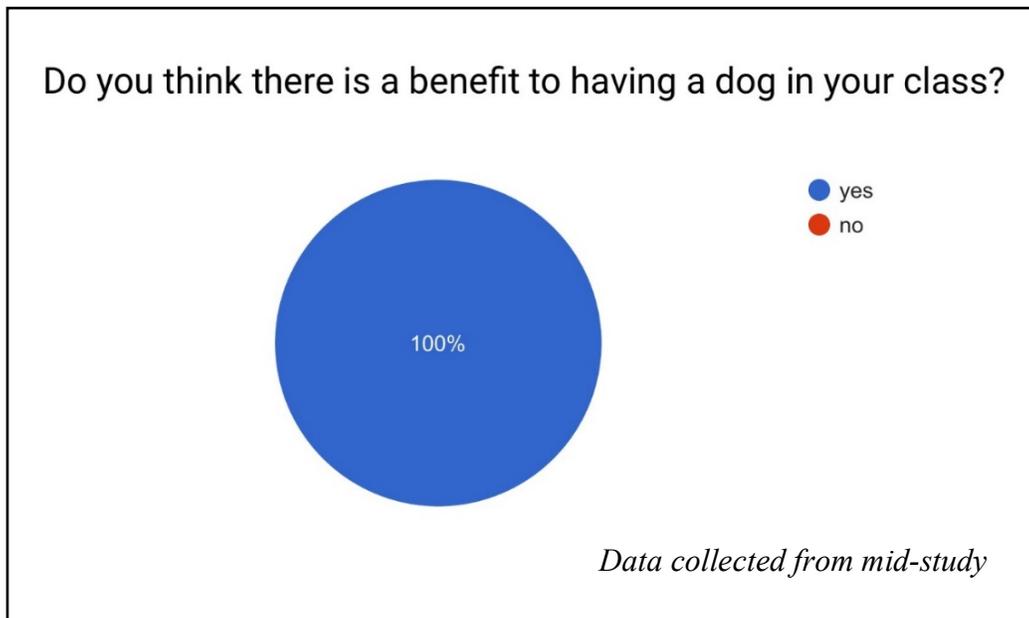
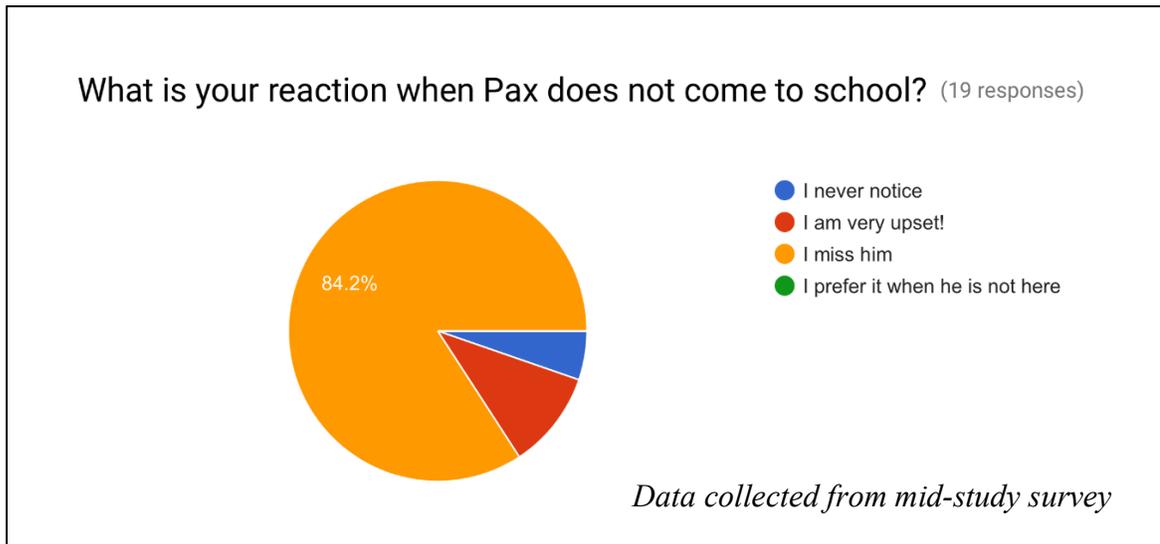
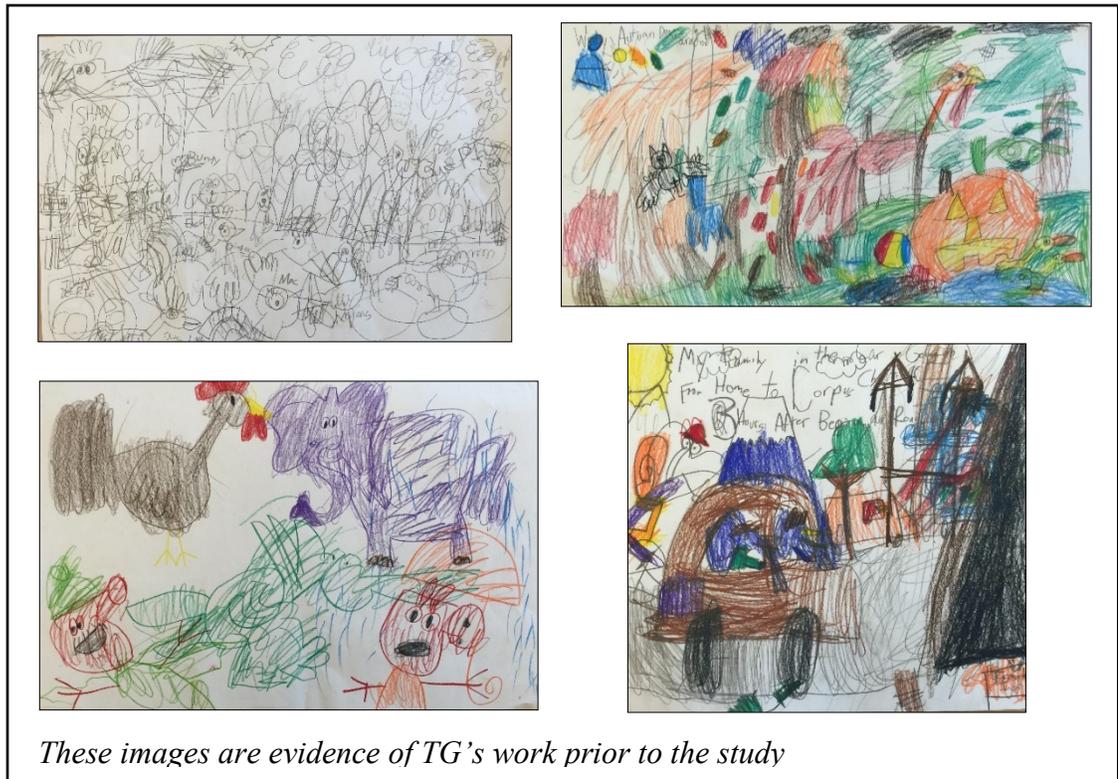


Figure 15:



There is also evidence of growth in the work of TG and MP between the beginning of the study and the end. Figure 16 shows TG's work prior to the study. His pictures consisted of cartoon animals from children's cartoons that he likes to watch. His images were overlapped and he used text to label everything in the drawing. He did not exhibit a lot of care when coloring in his characters and his work often looks rushed. His preference would be to start and finish a drawing in the same class period. He did not like stopping his drawing at the end of the class if he was not finished and when he was given the project to finish the next day, he took little care in completing it so that he could start on his next drawing.

Figure 16:



TG's work during the study showed improvement. While his sketches of Pax take on that same rushed aesthetic of his previous work, the scribbled marks on his drawings are indication of the texture of Pax's fur (Figure 18). He took great care at looking at Pax while he was drawing him, and it is evident in his work that he did draw Pax in different positions due to Pax moving during the life drawing session. The only text in this work happens to be the word "Pax" written on a tag that hangs from his collar. His abstract painting was taken from the section of Pax's tag on the bottom sketch of Pax in figure 18. TG took great care in creating this painting. His abstract painting shows thoughtful planning of the colors and application of paint. His color scheme was based on the emotion "brave", as TG stated, "Painting makes me feel brave!" The last piece was a

self-portrait that he completed after he was finished his abstract painting. His only instruction for this painting was that he was permitted to paint any animals. He started off by drawing the background in a patchwork style of colors. He added dots and some stripes to some of the blocks. I conducted an informal interview after the background was completed (Figure 17).

Figure 17:

I asked questions about his painting:

Me: What do you like best about your painting so far?

TG: The dots and dark brown

Me: What do you like least?

TG: Green, it makes me feel sick

Me: Are you finished?

TG: No

Me: What else do you want to put on it?

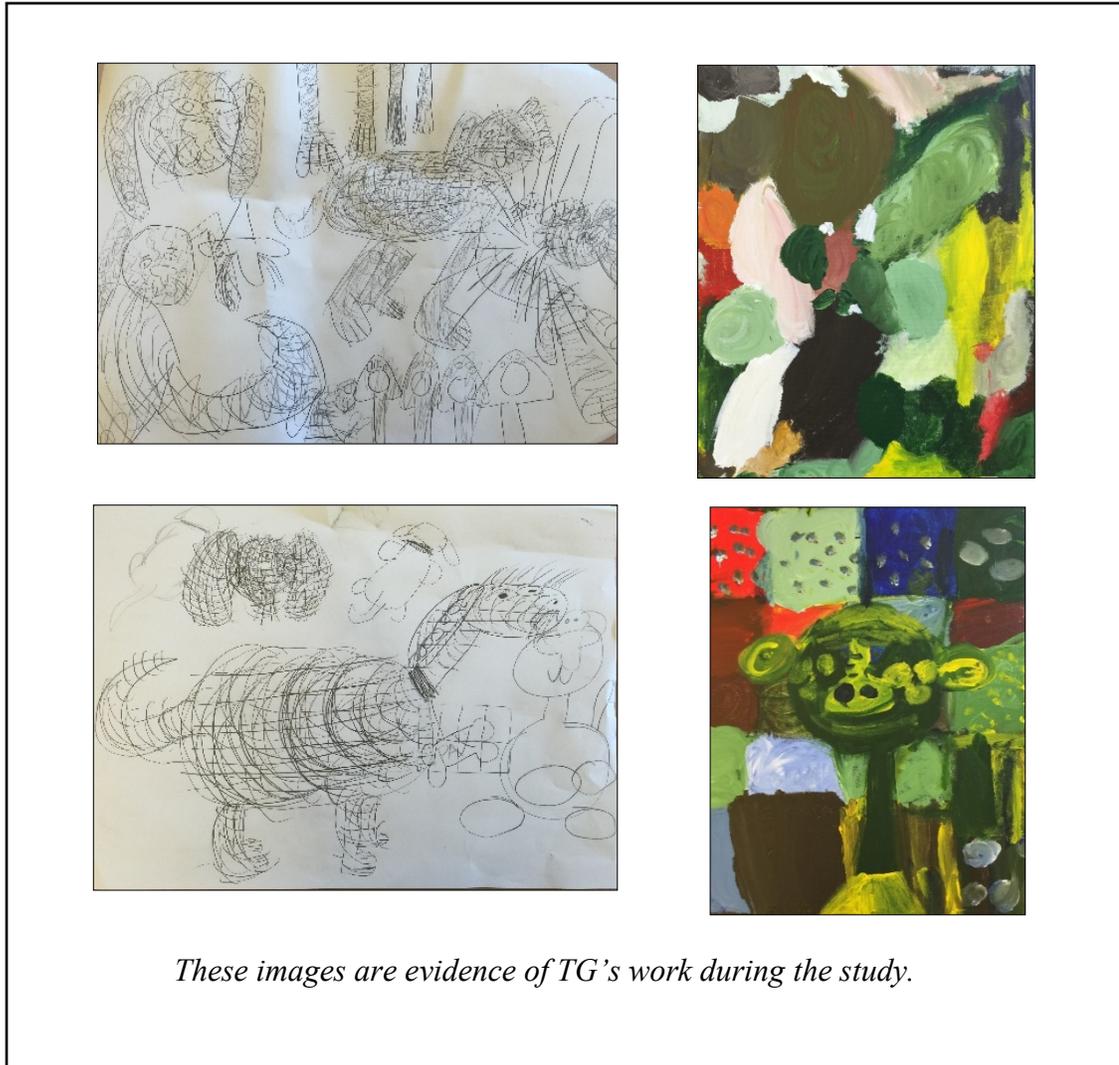
TG: Self-portrait

Me: Do you want a picture of yourself to look at while you are painting?

TG: Yes

(Personal Communication, January – April 2016)

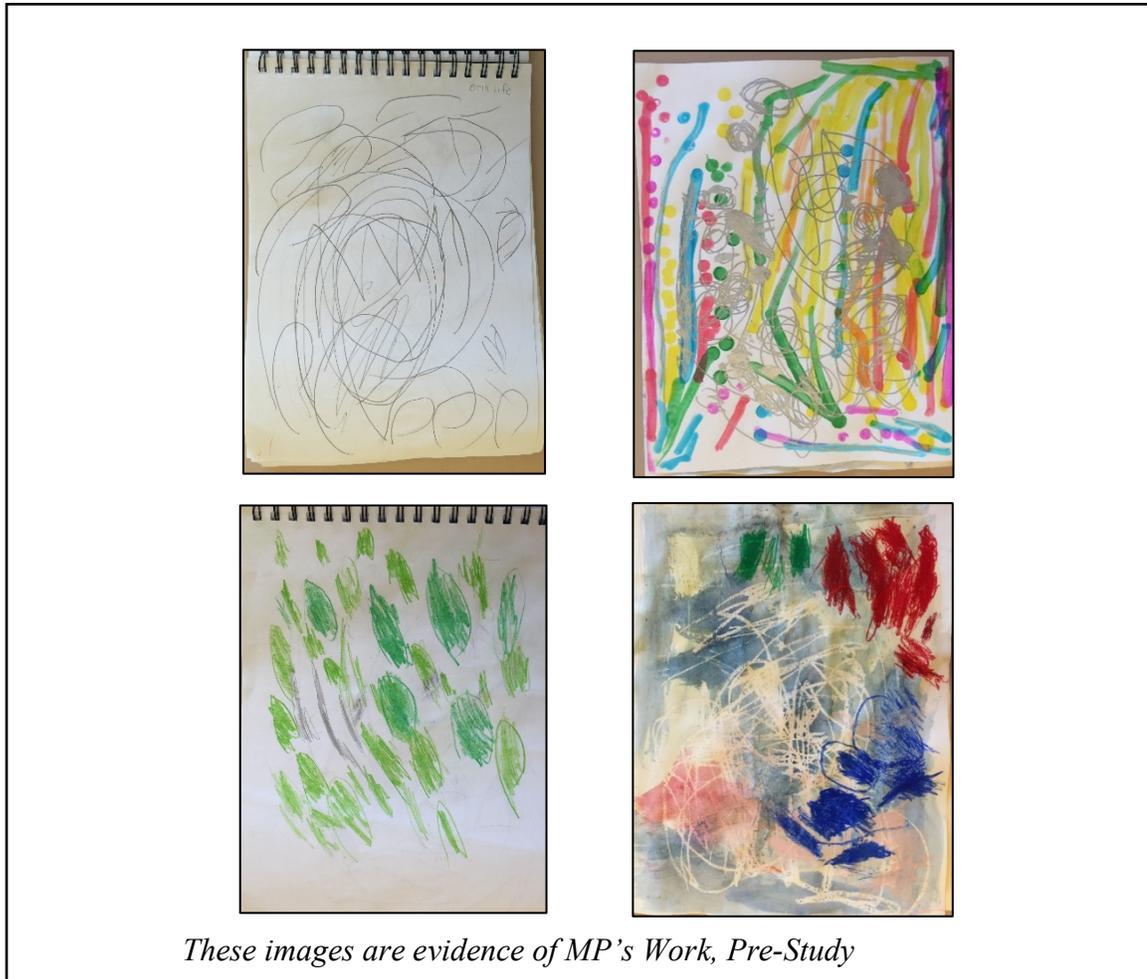
Figure 18:



MP's work throughout the study showed improvement as well. Because of MP's issues of fine motor control, it is difficult for him to simply hold a drawing implement and move his hand and arm together while paying attention to the marks he is making on the page. This year in art class, I have been trying to get him to make marks within a pre-

determined space. This space could be circles that he drew, or an area that was defined by me or with a shape or tracer. In Figure 17 it is evident that his mark making was scattered.

Figure 19:



Throughout the study MP was highly motivated to work when Pax was present. I had him complete two versions of the first assignment. His instructional assistant would draw a line around a quarter of the paper he was to work in. During the class he was encouraged to look at his paper and make marks only in that defined area, which he

was successful at. He was so successful at this, I had him make two of them. When it was time to draw Pax, I gave MP an alternative assignment. If I had him participate in the life drawing lesson, he would have grasped the idea of looking at the dog and drawing what he saw. Because of past experience with MP, I knew that he would have filled the paper with circles instead of pictures of Pax, which he is unable to do developmentally. I cut out a tracer in the shape of a dog. I taped it down to a paper and gave him colored pencils to use. I instructed him to start the pencil on the dog and draw a line off of the dog. He was able to follow these directions so every few minutes I asked him if he wanted to try a new color and he would pick a different colored pencil and continue drawing lines from the tracer to the paper. Once a section was filled, either I or his instructional assistant would point to a new area until he had all of the paper around the tracer colored in. When I removed the tracer he exclaimed “I drew a dog! That’s Pax!” (Figure 20).

He was able to replicate this technique on the painting after increasing the amount of dog tracers to four and switching the medium to tempera paint applied with a sponge. With each project that he completed, he was able to build upon skills. MP struggles with remembering things previously mastered. He can learn a skill, such as setting a table and be able to do it perfectly then unable to remember how to do it the next month. Being able to carry a skill through three projects was notable for MP.

Figure 20:



On the few times that Pax was not present, MP's behavior changed. He would be purposely defiant. He would not speak with anyone at his table. He would refuse to do work and instead, stare straight ahead the entire class. The only thing he would say would be "Angry!" (Figure 21). On another day while Pax was sitting next to his chair, MP was exhibiting off-task behavior and stated, "I'm silly". I made Pax leave his side and lay down under my desk. I told MP that Pax will be back once he got back to work.

MP stated, “I’m sorry, I will do work.” Pax was a motivating factor in exhibiting appropriate behavior.

Figure 21:

Pax did not come today. MP had a terrible day today. I gave him the task of “drawing with tape”. He refused to do it. He sat the entire period and stared at the wall and did not speak to anyone. (*Personal Communication, January – April 2016*)

Findings

The data collected across the three lessons illustrates that all students benefit from the presence of a therapy dog. I found evidence of increased social interaction between students with ASD and their peers, personal growth within in their artwork, and a strong correlation between the presence of a therapy dog and creating a more inclusive environment in the art classroom.

The population most affected by Pax’s presence was my regular education students. Throughout the study, the students reported the following benefits from Pax’s presence:

- a. Feeling of calmness and comfort to the classroom
- b. Boosts student morale
- c. Promotes a relaxing atmosphere
- d. Made students happy
- e. Was an interesting addition to the everyday schedule

f. Makes the art room feel like home.

These accounts of how Pax changed the atmosphere of the room then affected the behavior of the students. While originally I thought the behavior of the students with ASD would change, the addition of Pax had the opposite effect. All of the student in the class exhibited an open and friendly attitude. Pax helped promote an inviting and welcome atmosphere in the classroom. Students exhibited interest in positive communication with each other in class. The only negative behavior displayed in the class was when Pax was absent. When Pax was not present, most student would voice their displeasure by telling me how much they look forward to seeing him every day in art. MP was affected most when Pax did not come with his off task and inappropriate behavior (Figure 19). However, when Pax was present, students spoke to and treated each other with respect. They became more interested in talking to MP and TG and in turn began to socialize more with the students in their class. MP and TG both learned the names of more of the students in their class. There was unprovoked spontaneous socialization between all students in class. The students made a point of talking to MP and TG and asking them about their artwork. This is an example of successful inclusion practices as outlined in the literature review.

I feel the calming nature of the class allowed students to feel more comfortable in communicating with each other. The regular education students ended up being the ones that sought out interaction with the students with ASD and therefore increased the amount of authentic interactions of the students with ASD. I found this increase in communication to create a more inclusive environment in the class. Pax's presence made the students enjoy the class more and that joy was transferred to the way the student

interacted with each other. I allowed students to interact freely with Pax. They could pet him if he came over to the student's seat, they could call him over by saying "Come, Pax!" or play fetch with him by using the commands "Get it!" and "Bring it". Many times I would have MP take Pax outside to relieve himself. Sometimes Pax would lay on a blanket that was his "bed" and students would ask if they could go over and pet him for a few minutes which I would allow during the last 10 minutes of each class.

While initially I thought that the communication of the students with ASD would increase purely due to their interaction with Pax, what really happened is that the students with ASD increased their level of participation because the other student in the class sought out their participation. Pax was not able to completely aid the ASD students in initiating conversation, but he didn't need to. Pax influenced the general population of the class enough for them to ask the students with ASD about their work, ideas, and opinions.

I found that Pax was able to increase the amount of time on task with MP and TG. Throughout the delivery of the unit, Pax was present in the class. Sometimes I would let him roam freely around the class. Pax became very comfortable in the classroom with these students and even started to show preference to some students. MP was certainly one of his favorite students. On a few occasions I would place Pax next to MP in a down/stay (Figure 5). Other times Pax would voluntarily go lay down next to MP. I also commanded Pax to be in a down/stay next to TG on two occasions. MP and TG were their most productive when Pax lay at their feet.

Figure 22:

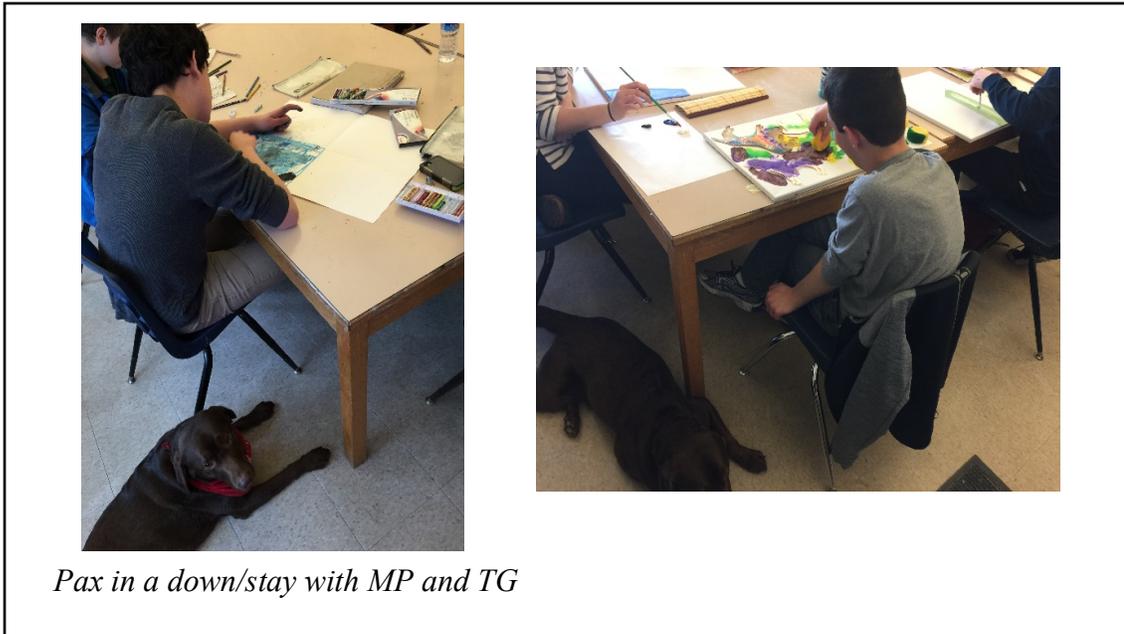


Figure 23: Data collected from Teacher Transcript Log

I noticed this week when I had Pax lay at MP's feet while he was working, his work and behavior improved. He was working on drawing squiggly lines with the Do-A-Dot Markers. Before he would randomly scribble on the paper and not watch what he was doing. With Pax he looked more at the paper and made an obvious attempt to fill the paper with wavy lines. He also needed less redirection and was able to stay on task longer. He also did not have to be told repeatedly to do certain tasks like sharpening his pencil. I also noticed TG talking more to the students at his table. He needed certain colors of colored pencils and would ask them very politely if he could borrow their colored pencils. He is now attempting to remember the names of the students that sit near him. *(Personal Communication, January 2016-April 2016)*



I was able to observe changes in the work of MP and TG. MP was able to remember a technique though 3 projects. He was happy and excited to make something that referenced something he cared about. I was able to find new techniques in helping him create art such as standing up while using markers to make long lines (Figure 10). TG's work expanded to subject matter beyond his usual animal cartoon characters. He was able to embrace the idea of a piece of his artwork being abstract because he was able to relate it to something that was concrete. He spontaneously used geometric designs in one of his pieces as a background and added dots and lines on top to create pattern as evident in his self-portrait in Figure 16. He was able to relate color to emotion by creating a self-portrait that portrays him with green skin while making the connection to the representation of the color green as feeling brave. All of this was possible because TG was able to communicate his ideas with other and develop those ideas of color, emotion, line, shape, pattern and form in his work.

CHAPTER FOUR

Conclusion

Summary

The action research that I conducted provides evidence that introducing a therapy dog in an art room setting has a positive effect on all students involved. This research found, through teacher observation, an increase in socialization in all students in the classroom including students with disabilities such as autism spectrum disorder. This study also showed a correlation between increased student socialization and participation with a deeper understanding of students that were included in the classroom. This study supports earlier studies that have shown that inclusion is more successful if there is an effort to increase communication and support acceptance of all students in the class.

As evident in the literature review, children with autism are predisposed to social isolation because of their disability (Ochs, Kemer-Sablik, Solomon, Sirota, 2001). The goal of inclusion is to decrease social isolation by improving the quality of children's social interaction and academic development through daily contact with typically developing peers (McGregor and Campbell (2001). If other students in the classroom are not open to social interaction and daily contact with students with ASD and other special needs, the goal of inclusion cannot be met. The introduction of a therapy dog allowed student to feel more comfortable and improved the general atmosphere of the classroom. Student felt more secure which resulted in the ability to increase socialization with different students in the class including the students with ASD. Due to the support the students with ASD felt from their peers, they were able to communicate with them

about their artwork and consequently, the overall quality and technique of their artwork improved from discussions with their peers.

This study also illustrates the importance of having a classroom that promotes a relaxed, happy atmosphere. Students reported the Pax made them feel happy and relaxed and their emotional status reflected upon their behavior and artistic choice.

Action Plan

Now that I have witnessed the benefits of introducing Pax as a therapy dog to my classroom I will continue to bring him to school with me. The students have grown incredibly fond of Pax. He brings smiles to students in the hallway that we pass including students that I do not teach. He has made connections with the Principal and office staff and the Superintendent of the school district regularly visits my class to say hello to Pax. I am interested in developing more lessons that utilize his presence in class. I will continue to use Pax as a subject matter for life drawing lessons and other art projects. I am also interested in the effect Pax has on the entire school both emotionally and academically.

This study showed the relationship between student's emotional status and its link to their behavior and artistic choices in the art room, it can help Art Teachers realize the importance in promoting a relaxed and happy atmosphere. This certainly does not have to be done by using a service or therapy dog. There are many ways to have a positive classroom culture that makes students feel comfortable.

Having Pax in the classroom encouraged successful inclusion by allowing all students to feel comfortable in the classroom and with their peers. I plan on finding more

ways to incorporate activities to aid in successful inclusion practices without the use of Pax. I plan on sharing my sharing this knowledge with other art teachers by submitting to professional journals, professional development and possibly presenting at conferences. All art teachers can benefit from this study by promoting inclusionary practices in their classrooms so that all students feel comfortable interacting with their peers.

Since the study began I have been asked to introduce Pax to other classrooms in the school such as Learning Support Classes and English Literature. I have also had requests for Pax to visits other grades levels such as the elementary art class and autism support classes and fully included 3rd grade classrooms. When I visited the Kindergarten through second grade early learning support classroom I did the dog trainer for the day lesson. The students were taught a few of Pax's commands. Two second grade students from the classroom next door were then asked to join us. The support students then taught their peers Pax's commands in an effort to strengthen social skills and follow two step directions. One student was very afraid of dogs and spent most of the class sitting on the teacher's lap. By the end of the lesson, he gave Pax a pat on the head and held his leash as we walked out of the building. It is my hope that Pax will continue to promote positive emotional health and support successful inclusion throughout the school district where I currently teach.

I have also been approached by two school districts that have shown an interest in having Pax visit their classes. Perhaps one day I will create an organization of therapy dog owners that, along with an innovative curriculum, will be able to visit support classrooms from requesting districts as well local universities.

Appendix A

PAX COMMANDS

No/AahAah	Used to stop dog from inappropriate action
Come	Used to call dog to you
Kiss	A quick dart of the tongue on your cheek
Get Dressed	dog is to slip head through vest
Help Me	dog it to pull head out of vest
Let's Go	Casual forward walking on leash
Forward	Dog should move forward with or without you
Roll	Dog should roll onto back
Sit	Dog should sit on his bottom
Shake	Dog should lift front paw
Speak	Dog should bark on command
Go lay down	Dog should go to a designated are and lie down
Wait	Dog should stay temporarily and remain alert
Stay	Dog should stay for an extended amount of time
Down	Dog should lay down quietly
Up	Dog should jump onto designated area
Off	Dog should get off a person or furniture
Leave It	Used to tell dog to ignore something
Over	Command to leap over an object
Under	Command to go under an object
Heel	Dog should position themselves on your left side
Side	Dog should position themselves on your right side
Follow	Dog should follow behind you
Move	Dog should get out of the way
Out	Used to send dog out of a room
Stand	All four paws planted in standing position
Turn	Dog should turn 180 degrees and assumes the same position
Get your leash	Dog should pick up leash with mouth and give it to handler

Appendix B

LESSON PLANS

Lesson Title: **Colors of Emotion**

Grade Level: High School

BIG IDEA: Feelings and emotions can be represented and communicated through the use of color.

ESSENTIAL QUESTION: How can colors used in art communicate emotions?

OBJECTIVE

Knowledge: Students will learn how color can be attributed and communicated through the use of colors.

Skill: Students will learn how to create composition representing 4 different emotions through line, shape, and color using oil pastels.

Attitude: Students will become aware of how we are influenced though color and how it is communicated through art, film, and other media.

MOTIVATION

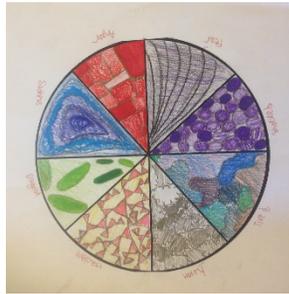
Introduction: Before we start I will show the movie “Inside Out”. This movie is about a young girl named Riley when she is uprooted from her Midwest life and moves to a new state and how her emotions - Joy, Fear, Anger, Disgust and Sadness - conflict on how best to navigate a new city, house, and school. I will then ask students about the movie with leading questions such as “Why do you think each emotion was assigned a specific color? How was Riley dressed in the beginning of the movie? How was she dressed at the middle and end of the movie? How else is color represented and used throughout the movie?”

ADAPTIVE STRATEGIES – Hand over hand, one on one instruction,

Adaptive Aids: none

Exemplar:

Wheel of Emotion



4 Emotions in Oil Pastel



ACTIVITY:

Students will then be given a handout with a circle divided into 8 sections. Students will label each section with a different emotions and then use colored pencils to depict each emotion using shapes, line and color. Students will keep these in their sketchbook when completed.

Students will then be give a 20”X18” piece of white drawing paper. They will fold it into quarters. When they unfold it, they should have 4 equal rectangles. They will then pick 4 emotions from their “Wheel of Emotions” sketchbook assignment and assign each emotion to an area on their paper. They will then use oil pastel to draw shapes and lines that are representative of the emotion they are depicting. They will color in each shape using value to create form.

Week 1: Watch the movie “Inside Out”

Week 2: Complete the “Wheel of Emotions”

Supplies: Handout, colored pencils

Vocabulary: color, line, shape, emotion

Week 2 – 3: Emotions in Oil Pastel

Supplies: 20”X18” white drawing paper, oil pastel

Vocabulary: oil pastel, color, shape, value, form, emotion

Closure: Students will complete an online assessment.

Assessment/Evaluation: Students will complete a self-assessment. Teacher will complete a rubric.

LESSON TWO

Lesson Title: **Pax Sketch**

Grade Level: High School

BIG IDEA: Drawing live models help can develop drawing skills.

ESSENTIAL QUESTION: How is it possible to draw something that moves? How can artists use basic shapes, gesture drawing and contour lines to draw live models?

OBJECTIVE

Knowledge: Students will learn flexibility and quick decision making during the drawing process.

Skill: Students will learn how to use basic shapes to quickly draw a 3 dimensional form.

Attitude: Students will become aware of how skills learned though life drawing can be transferred to other artistic and creative processes.

MOTIVATION

Introduction: For the first class students sat in a circle and a blanket was placed in the middle of the circle. I instructed Pax to lay on the blanket. For 5 minutes I had the students watch Pax and count how many times he moved. After the five minutes we discussed his movement, from raising and lowering his head, to getting up, walking away, returning to the blanket, and laying back down in a completely different position. Some questions I asked were: What are some skills needed in order to draw something that moves? How can we draw a realistic, proportional drawing before our subject moves?

ADAPTIVE STRATEGIES-

Adaptive Aids: Tracers for shapes for student that have fine motor skills. Photographs of Pax provided to student with ASD/OCD that works slow.

Exemplar:



ACTIVITY:

Week 1: I will give a demonstration on drawing Pax. I will show the students how to use shapes and contour lines to quickly draw a living model before he moves. I will also demonstrate what to do if Pax moves; either start over, wait to see if he moves back into the previous position, or adapt the drawing to the new position. Students will use drawing boards and get 1 20”X18” piece of paper each day. Student will draw the entire class period and fill the paper with sketches of Pax. They students will do this for 2-3 class periods.

Supplies: 20”X18” white drawing paper, drawing pencils, drawing board

Vocabulary: life drawing, contour line, form, gesture

Closure: Student will view all sketches once they are finished drawing. Student will use Pair/Share to discuss their drawing and choose their most successful sketch of Pax.

Assessment/Evaluation: Students will photograph their assignment and submit on google classroom. Teacher will complete a rubric for assignment.

LESSON THREE

Lesson Title: **Abstract Painting**

Grade Level: High School

BIG IDEA: Abstract forms and compositions can be found and developed from realistic images.

ESSENTIAL QUESTION: What is the process of realism to abstract?

OBJECTIVE

- Knowledge:** The student will know how abstract images can be developed from a realistic drawing or image
- Skill:** The student will use a drawing of a dog to create an abstract composition and then paint it on a canvas using acrylic paint
- Attitude:** The student will understand how different artists use realism to abstraction in their art work.

MOTIVATION

Introduction: Students will be shown the work of Chuck Close. I will show them his earlier hyper-realism portraits, then discuss how a medical condition affected the way he painted and how he was able to adapt his work. I will then show the student his later portraits and point out how each square of the painting is an abstract form, but when viewed together, make a realistic portrait. Some questions I will ask are: How does Close's work go from realism, to abstract, to realism? What was Close's motivation to do this? If you lost the ability to do something you enjoyed doing, how do you think you would compensate for it?

ADAPTIVE STRATEGIES – One student with fine motor skill issues will be given tracers in the shape of a dog. The student will tape the tracer to a canvas. The teacher will provide the student with tempera paint and a sponge. The student will use the sponge to apply the paint to the canvas. Once the paint is dry, the tracers will be removed, leaving the shape of 4 dogs.

Another student with ASD/OCD will be given extra time to complete the project

Adaptive Aids: Tracers, sponge, tempera paint

Exemplar:



ACTIVITY:

What will the students do?

Week 1: The student will take out sketches of a dog from the previous lesson. Student will select their most successful sketch of the dog. The students will be given an 11"x14" piece of card stock with a 3"x4" rectangle window cut out of the middle. The student will move this window over their drawing until they find a composition they like. Student will be instructed that the composition should exhibit balance, and be able to apply the golden ratio to the composition. Once the students have selected their composition, they will enlarge and draw the composition onto a 20"x18" canvas.

Week 2: Students will take out their 4 Emotions in Oil Pastel project from the previous lesson. Students will choose 1 emotion from this project. The colors used to create this emotion will be the color palette for this abstract painting. Students will use these colors and white to create gradients in each shape of the painting. I will first demonstrate this to the students on how to mix, apply and blend the acrylic paint.

Supplies: Pax sketch, Emotions in Oil Pastel project, card stock window, pencil, 20"x18" canvas, acrylic paint, palette, brushes, water, paper towels

Vocabulary: Chuck Close, grid, Golden ratio, gradient, balance, abstract

Assessment/Evaluation: Students will fill out an online assessment. Teacher will fill out rubric.

Appendix C

Pre-Study Survey

1. How do you feel about dogs?
2. Do you have or ever had a pet dog?
3. Do you think there is a benefit from having Pax in the classroom? Why or why not?
4. Do you feel that input from your classmates is helpful when making art?
5. Do you find it difficult to talk to people in your class about your artwork?
6. Do you think that being able to talk with your classmates about your artwork is helpful?
7. Do you think Pax's presence in your art class will have any effect on your artwork? Please specify why or why not.

Appendix D

Mid-Study Survey

1. Have you noticed any changes to the classroom since Pax has been coming more in the past month?
2. If you have seen any changes, please let me know what you have noticed.
3. What is your reaction when Pax does not come to school?
4. Please check all of the emotions that you included on your project:
Happy, sad, mad, joyful, excited, disgust, fear, other
5. Do you think that Pax had any influence with the emotions that you chose?
6. Please describe your experience or interactions with Pax so far.

Appendix E

Post-study survey

1. What emotion did you choose for your acrylic paint color scheme?
Happy, sad, mad, joyful, excited, disgust, fear, other
2. Why did you choose this emotion for your acrylic?
3. Do you think the presence of Pax influenced the emotion that you picked for the acrylic painting?
4. Do you think there is a benefit to having a dog in your class?
5. If you think there is a benefit, please describe how you feel it benefits the class.
6. Did you notice any changes in the classroom during this project, either in classroom culture, interactions with your classmates, or change in the quality of your work?
7. Did you seek out input or help from classmates during this project?
8. Did you find discussing your artwork with your classmates helpful?
9. Did you find it difficult to talk to other people about your artwork?
10. Now that the project is over, has your opinion about dogs changed?

Appendix F

Student Consent Form

Karen Rosenburg, Art Teacher
New Hope-Solebury High School
182 W. Bridge St.
New Hope, Pa 18938
krosenburg@nhsd.org

Dear Parent/Guardian,

I am a currently a graduate student at Moore College of Art and Design in the Art Education with an Emphasis in Special Populations program. I am conducting a study on the use of a therapy dog in the art room setting to foster inclusion, student communication, and divergent thinking in all student artwork. The purpose of this study is to see if the addition of a trained therapy dog can encourage students with special needs to communicate with their peers and to see what kind of impact is reflected in their artwork. The results of the study may help art teachers as well as other special area teachers, understand the importance of and encourage the communication between students with special needs and their peers as well as the possible impact that it may have in their work. These results may or may not directly help your child, but may benefit future students. With your permission, I would like to ask your child to volunteer for this research.

This study will take place during the 4th period Art I, II, and III class. The students in this class will be asked to complete a questionnaire at the beginning and the end of the study. They will also participate in 2 assignments that feature a trained Autism Service Dog named Pax. They will be asked to draw him and include him in a narrative art project. This study will take place between February 1st and March 18th. With your permission, your child will be video recorded during the instructional period. The video will be accessible only to me for verification purposes. At the end of the study, the video will be erased. Their identity will be kept confidential to the extent provided by law and I will replace their names with pseudonyms. Participation or nonparticipation in the study will not affect your child's grades or placement in any programs.

You and your child have the right to withdraw consent for your child's participation at any time without consequence. There are no known risks or immediate benefits to the participants. No compensation is offered for participation. Results of this study will be available in August 2017 upon request. If you have any questions about this research protocol, please contact me at krosenburg@nhsd.org.

Thank you,
Karen Rosenburg

References

- Adams, C., Baxendale, J., Lloyd, J., & Aldredge, C. (2005). Pragmatic language impairment: Case studies of social and pragmatic language therapy. *Child Language Teaching & Therapy*, 21(3), 227–250.
- Best, C., Arora, S., Porter, F., & Doherty, M. (2015). The Relationship Between Subthreshold Autistic Traits, Ambiguous Figure Perception and Divergent Thinking. *J Autism Development Disorder Journal of Autism and Developmental Disorders*.
- Bishop, D., & Leonard, L. (2014). *Speech and language impairments in children: Causes, characteristics, intervention, and outcome*. Hove, East Sussex: Psychology Press.
- Centers for Disease Control and Prevention - Autism. (2015, August 17). Retrieved October 9, 2015.
- Chandler, C. (2001). Animal-Assisted Therapy in Counseling and School Settings. *ERIC Digest*.
- Coleman, M. (Ed.). (2005). *The Neurology of Autism*. Oxford University Press.
- Diagnostic and Statistical Manual of Mental Disorders. (1992). Richland, Wash.: Pacific Northwest National Laboratory (U.S.); 5.
- Docter, P., & Del Carmen, R. (Directors). (2015). *Inside Out* [Motion picture on DVD]. USA: Disney/Pixar.
- Haraway, D. (2003). *The companion species manifesto: Dogs, people, and significant otherness*. Chicago: Prickly Paradigm Press.
- Haring, T., & Breen, C. (1992). A peer-mediated social network intervention to enhance the social integration of persons with moderate and severe disabilities. *Journal of Applied Behavior Analysis*, 25, 319–333.

- Individuals with Disabilities Education Act (IDEA) Data. (2006). 2008, from www.ideadata.org
- McGregor, E., & Campbell, E. (2001). The Attitudes of Teachers in Scotland to the Integration of Children with Autism into Mainstream Schools. *Autism*, 189-207.
- Jacobs, C. (2013). *Animal-assisted therapy and the child-animal bond: Children's well-being and behavior*. Southern Illinois University Carbondale. Research Paper 427.
- Jalongo, M.R., Astorino, T., & Bomboy, N. (2004). Canine visitors: The influence of therapy dogs on young children's learning and well-being in classroom and hospitals. *Early Childhood Education Journal*, 32(1), 9-16.
- Lantz, J. (2002). Theory of mind in autism: Development, implications, and interventions. *The Reporter*, 7(3), 18-25.
- Levinson, B. (1969). *Pet-oriented child psychotherapy*. Springfield, IL: Charles C. Thomas.
- Lowenfeld, V., & Brittain, W. L. (1970). *Creative and mental growth* (5th ed.). [New York]: Macmillan.
- Maxwell, J. (2013). *Qualitative research design: An interactive approach* (3rd ed.). Thousand Oaks, Calif.: Sage Publications.
- Mesibov, G., Shea, V. (1996). Full inclusion and students with autism. *Journal of Autism and Developmental Disorders*, 26, 337-346.
- McMillan, J. (1996). *Educational research: Fundamentals for the consumer* (2nd ed.). New York: Harper Collins.
- Mills, G. (2000). *Action research: A guide for the teacher researcher*. Upper Saddle River, N.J.: Merrill.
- Newtown, E. (1960). Art as communication. *The British Society of Aesthetics*, 71.

- Ochs, E., Kremer-Sadlik, T., Solomon, O., & Gainer Sirota, K. (2001). Inclusion as social practice: Views of children with autism. *Social Development, 10*(3).
- Pierce, K., & Schreibman, L. (1995). Increasing complex social behavior in children with autism: Effects of peer implemented pivotal response training. *Journal of Applied Behavior Analysis, 28*, 285– 295.
- Pavlidis, M. (2008). *Animal-assisted interventions for individuals with autism*. London: Jessica Kingsley.
- Prutting, C., & Kirchner, D. (1987). A clinical appraisal of the pragmatic aspects of language. *Journal of Speech and Hearing Disorders, 52*, 105-117.
- Redefer, L., Goodman, J. (1989). Brief report: pet-facilitated therapy with autistic children. *Journal of Autism and Developmental Disorders 19*, 461-467
- Sasso, M. G., Peck, J., & Garrison-Harrell, L. (1998). Social interaction setting events: Experimental analysis of contextual variables. *Behavioral Disorders, 24*, 34–43.
- Senator, S. (2008). In Parish, R., *Embracing autism: Connecting and communicating with children in the autism spectrum*. (p. xix-xxii). San Francisco, CA
- Siegel, B. (2003). *Helping children with autism learn: Treatment approaches for parents and professionals*. Oxford: Oxford University Press.
- Silverman, S., & Weinfeld, R. (2007). *School success for kids with asperger's syndrome*. Waco, Tex.: Prufrock Press.
- Smith, F. (2009). Why arts education is crucial, and who's doing it best: Art and music are key to student development. *Edutopia, 1-6*.
- Solomon, O. (2010). What a Dog Can Do: Children with Autism and Therapy Dogs in Social Interaction. *Ethos, 38*(1), 143-166.

VanMeter, L., Fein, D., Morris, R., Waterhouse, L., & Allen, D. (1997). Delay versus deviance in autistic social behavior. *Journal of Autism and Developmental Disorders*, 27, 557–569.

Volkmar, F., Carter, A., Grossman, J., & Klin, A. (1997). Social development in autism. In D. Cohen & F. Volkmar (Eds.), *Handbook of autism and pervasive developmental disorders* (pp. 173–194)